A STUDY OF THE POTENTIAL FOR INCREASING THE EXPORT OF HORTICULTURAL PRODUCTS BY AIR FROM NIGERIA

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A thesis submitted to the University of Huddersfield in partial fulfilment of the requirements for the degree of Doctor of Philosophy

The University of Huddersfield

April 2017

Abstract

The decline in global oil prices is considered an impetus for Nigeria to diversify into non-oil export as an additional means of generating growth. Horticultural products' export (HPE) has been suggested as a means through which Nigeria could increase its foreign exchange earnings along similar lines as other African economies, such as Kenya and Ethiopia. However, to achieve competitive advantage in HPE necessitates participation in global horticulture value chains. Meanwhile, there are preconditions to gainful participation such as compliance with stringent food safety and quality standards, importing countries' regulations, buyers' specifications and other international trade regulatory standards, in addition to employing practices that can enhance market penetration.

The aim of this study is to explore the potential for increasing horticultural products' export from Nigeria. The study has employed a single-case embedded design and multiple perspectives of five stakeholder groups were explored through interviews (a focus group, in-depth and telephone interviews) in addition to direct observations and archival records. These multiple sources of evidence have enabled this study to provide valid evidence of the barriers inhibiting HPE from Nigeria. The empirical findings show that there are multi-layered issues which require that a deliberate resolution must be made to position Nigeria's horticulture sub-sector to participate in global horticulture value chains. The main barriers identified are the existing institutional framework, infrastructure and logistics issues, market penetration issues, stakeholders' inadequacy, food safety and quality concerns, high cost of finance, export operational challenges, neglect of agriculture and the current airline market structure.

While recognising there are a number of hurdles to overcome while participating in global horticulture value chains, the thesis concludes by outlining a number of recommendations to strategically improve HPE, emphasising that the onus for improvement lies on the Nigerian government and its institutions, private organisations and stakeholders who are seeking to increase the export of horticultural products from Nigeria.

Table of Contents

List of Figures

List of Tables

Acknowledgement

I would like to express my profound gratitude to:

- My darling husband, Olawale Olaitan for believing in me and supporting me all the way to achieve success in my entire endeavour. “You are a rare gem!”
- My lovely children, Toluwanimi and Toluwalase, for their endurance and understanding throughout my research journey.
- The University of Huddersfield, for the scholarship awarded in the pursuit of my doctorate degree.
- Dr. Nick Hubbard and Prof. Colin Bamford, my research supervisors, for their constructive feedbacks, encouragement and support throughout this research work.
- The European International Business Academy (EIBA) for the invaluable comments and recommendations at the 4th EIBA Doctoral Symposium and Qualitative Research workshop in conjunction with the 41st Annual Conference of the EIBA at Pontifical Catholic University (PUC) Rio de Janeiro, Brazil in December, 2015.
- Important contributors to this research work: Dr. Dayo Folorunsho of the Nigeria Plant Quarantine Service (NPQS); Mr. Babatunde Olusegun Faleke of the Nigerian Export Promotion Council (NEPC); Mr. Abayomi Adetola of DHL Aviation, Nigeria; Mr. Femi Afolabi of British Airways World Cargo, Nigeria; Alhaji Fatai Abiola and Mr. Oluitan, former Director at NPQS, for their resourceful assistance.
- My father, Mr. Joseph Akinola Ariyo and my late mother, Mrs. Julianah Ariyo for their foundational investment in my career and general wellbeing that have kept me equipped and encouraged.
- My siblings, Iyadunni, Olusola, Babatunde and Opeyemi, for their understanding, encouragement and prayers. Also my in-law, Mr. & Mrs. John Ademola Olaitan for their support, prayers and encouragement.
- Mr. Benjamin Dorgbetor, and other unnamed contributors such as family members, in-laws, friends and colleagues, Thanks a lot!

All glory to the Almighty God for His grace, mercy and provisions.

Dedication

This research work is dedicated to my lovely children, Toluwanimi and Toluwalase Olaitan. I remember all your yearnings whenever I was busy studying:

Lase: Mum, when will you finish your PhD so that you can play with me?

Nimi & Lase: (discussing in their room) We can't wait for mummy to finish her programme because the only way you can make her happy in this house is to read. Otherwise, she'd say you are disturbing!

I love you.

Dissemination of Research work

The research outcomes were disseminated during the following events:

- Poster presentation at the University of Huddersfield Postgraduate Research Conference – 13th November, 2015.
- European International Business Academy (EIBA) conference at Pontifical Catholic University (PUC) Rio de Janeiro, Brazil - 1st December, 2015.
- Poster presentation at the Business School Research Conference, University of Huddersfield – 14th January, 2016.
- Recent work submitted for publication:
  Olaitan, O.F., Hubbard, N.J. and Bamford, C.G. "The potential for the participation of Nigeria in global horticulture value chains" Journal: International Journal of Emerging Markets. Submission date: 15th February, 2017.
- The research work will be further spread to government authorities and relevant stakeholders in Nigeria after the award of PhD.

List of Abbreviations

CBI	Centre for the Promotion of Imports from developing countries
EUROPHYT	European Union Notification System for Plant Health Interceptions
FAO	Food and Agricultural Organisation of the United Nations
FMARD	Federal Ministry of Agriculture and Rural Development
GAP	Good Agricultural Practices
GDP	Gross domestic product
GHVC	Global horticulture value chain
GVC	Global value chain
HCD	Horticultural Crops Directorate
HCDA	Horticultural Crops Development Authority
HPE	Horticultural Products' Export
IATA	International Air Transport Association
IITA	International Institute of Tropical Agriculture
IPPC	International Plant Protection Convention
ISHS	International Society for Horticultural Science
ISPM	International System for Phytosanitary Measures
KFC	Kenya Flower Council
NACHO	Nigerian Aviation Handling Company Plc.
NBS	National Bureau of Statistics
NEPC	Nigerian Export Promotion Council
NEXIM	Nigerian Export – Import Bank
NIHORT	National Horticultural Research Institute
NNPO	National Plant Protection Organisation
NPQS	Nigeria Plant Quarantine Service
OECD	Organisation for Economic Co-operation and Development
OPEC	Organisation of the Petroleum Exporting Countries
SPS	Sanitary and Phytosanitary Agreement
UNCTAD	United Nations Conference on Trade and Development
WHO	World Health Organisation
WTO	World Trade Organisation

Chapter One: Introduction

1.1 The Research Problem - The Nigerian economy: problems and prospects

Nigeria is an important country in Africa because of its population, gross domestic product (GDP), natural resources and cultural diversity. In 2011, Citigroup listed Nigeria as one of the global generators of growth (3G). These countries are predicted to be the fastest growing economies in the world between 2010 and 2050 (The Organisation for Economic Co-operation and Development [OECD], 2013a; Citi, 2011). Nigeria has emerged as the largest economy in Africa with an estimated GDP of $1.1 trillion in 2015 after the revision of its GDP in 2014 (Central Intelligence Agency [CIA], 2017a).

Nigeria is also one of the MINT countries identified as 'emerging economic giants' in 2014 by a renowned economist, Jim O'Neil who previously identified BRIC countries as the potential world economy powerhouses in 2001. MINT refers to Mexico, Indonesia, Nigeria, and Turkey. While all the MINT countries have geographical advantage that could enhance their trade patterns, Nigeria's advantage is threatened by the lack of development, a dilemma common for African countries. According to the forecast, MINT countries are countries that could drastically improve their economy in the next two decades if their trade patterns and infrastructure are rightly positioned for the advancement. It is significant that the economic situation in Nigeria has worsened since the aforementioned predictions.

Nigeria is a West African country situated in the continent of Africa, bordering the Gulf of Guinea, between Benin and Cameroon (Figure 1.1). Geographically, it covers an area of about 924,000 square kilometres of which agricultural land use covers 78%. Nigeria's climate varies from one region to the other – tropical in the centre, equatorial in the south and arid in the north. A population of approximately 186million in 2016 places Nigeria as the most populous in Africa and with a population growth rate of 2.44%, its population is projected to grow to 392million in 2050 (CIA, 2017a). Its natural resources include arable land, natural gas, petroleum, coal, iron ore, lead, limestone, niobium, tin and zinc (CIA, 2017a; The Organization of the Petroleum Exporting Countries [OPEC], 2017a).

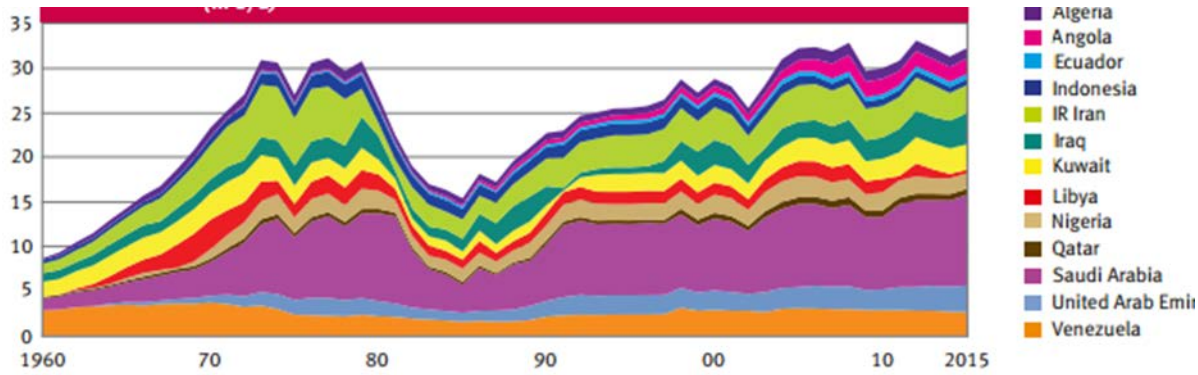
Figure 1. 1: Map of Nigeria

Source: CIA (2017a)

Notwithstanding the abundance of its minerals, Nigeria is literally a mono-economy and has relied on oil as its main source of national income as well as the predominant source of government revenue since the oil boom in the 1970s (CIA, 2017a; Odulari, 2008). Nigeria depends mainly on limited commodity exports (petroleum and petroleum products, cocoa, rubber) and is therefore vulnerable to global market volatility and resultant national income fluctuations (Dennis & Shepherd, 2011). For instance, not quite long after the World Bank warned mono-economy countries, most especially those relying on oil, against the risk of global price fluctuations, the extraction of US shale oil and gas boom in 2014 has affected the Organisation of the Petroleum Exporting Countries' (OPEC) share of oil supplied to the global market.

OPEC is an organisation whose mission is to "co-ordinate and unify the petroleum policies of its Member Countries and ensure the stabilisation of oil markets in order to secure an efficient, economic and regular supply of petroleum to consumers, a steady income to producers and a fair return on capital for those investing in the petroleum industry" (OPEC, 2017b). Nigeria became a member of OPEC in 1971. Other Member Countries include Iran, Iraq, Kuwait, Saudi Arabia, Venezuela, Qatar, Indonesia, Libya, the United Arab Emirates, Algeria, Ecuador, Gabon and Angola (OPEC, 2017a). Figure 1.2 to 1.4 shows its members' share of petroleum production and exports.

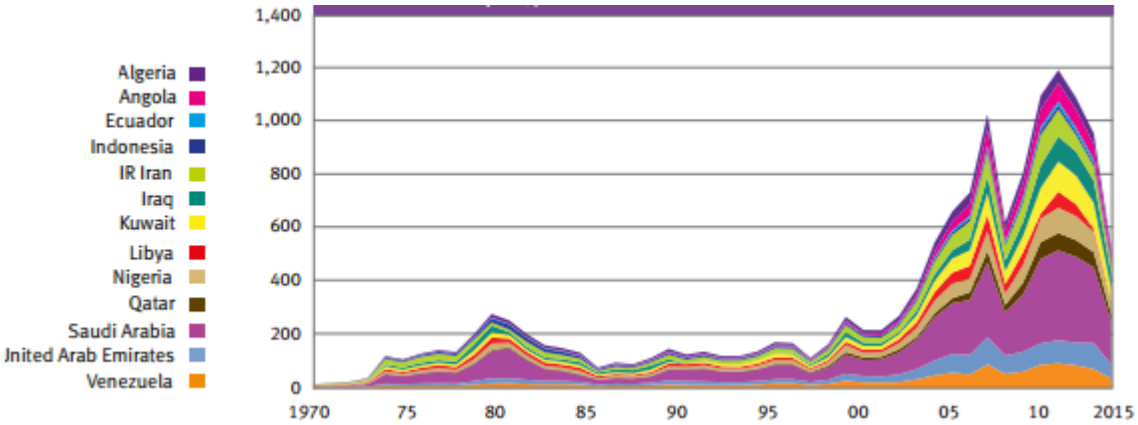
Figure 1. 2: OPEC Members' crude oil production (in barrels per day)



Source: OPEC (2016)

Figure 1.2 shows the share of crude oil produced by each member relative to others between 1960 and 2015. Between 2011 and 2015, OPEC's share of total world crude oil production was on average of 44% compared to 75% in the 1970s (OPEC, 2016).

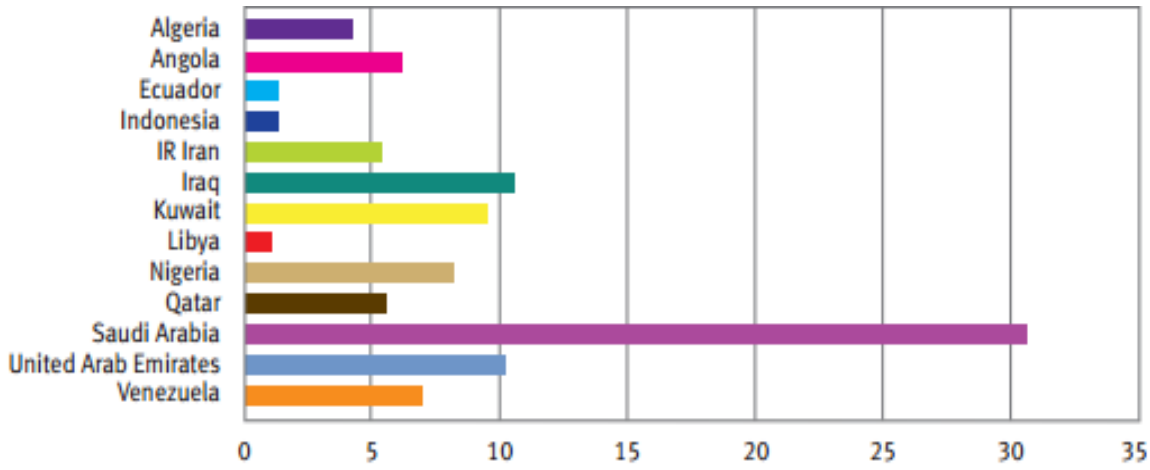
Figure 1. 3: OPEC Members' values of petroleum exports (billion $)



Source: OPEC (2016)

The values of petroleum exports from Nigeria in 2011, 2012, 2013, 2014 and 2015 were $88,449m, $95,131m, $89,930m, $77,489m and $41,818m respectively. Figure 1.3 shows a general decline in the value of petroleum exports across OPEC member countries between 2014 and 2015, owing to a reduction in the global price of crude oil.

Figure 1. 4: Values of petroleum exports as a share of total OPEC, 2015 (per cent)



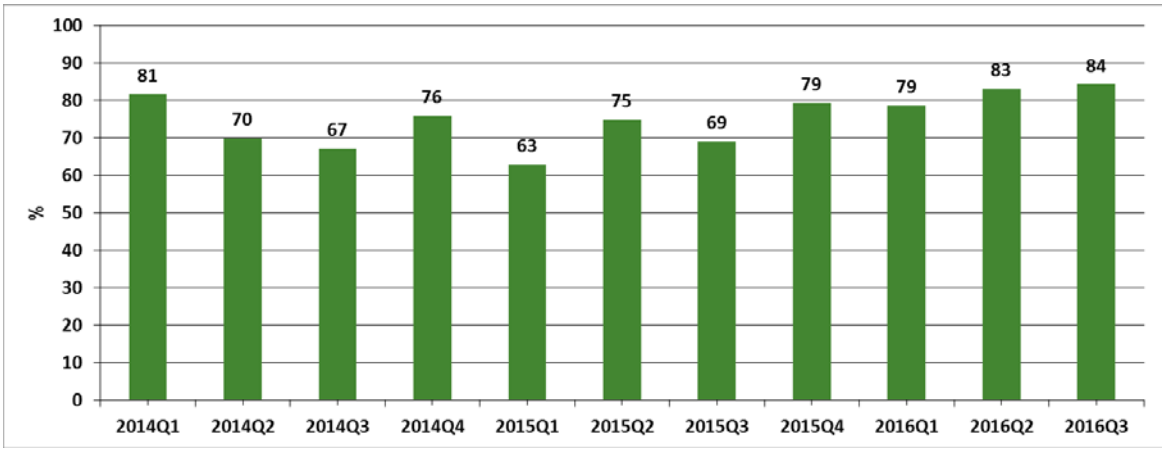
Source: OPEC (2016)

Figure 1.4 shows the values of petroleum exports of each member as a share of total OPEC exports in 2015 and emphasises the domination of Saudi Arabian exports.

In the 1970s, OPEC member countries assumed responsibility to develop their domestic petroleum industries and determined the crude oil pricing on the world markets (OPEC, 2017a). Their control led to a steep rise of oil prices in the 1970s but prices weakened gradually and crashed in 1986, leading to economic hardship for many of them. During this period, OPEC employed several interventions (such as a group production ceiling and a Reference Basket for pricing, OPEC/non-OPEC dialogue and cooperation) which brought about market stability and reasonable oil prices.

This upturn and downturn has been the experience in oil supply since then until the recent (2014) decline in global oil prices caused by oversupply. This cyclical instability in oil market prices has been a problem for OPEC countries and poses a greater danger to a mono-economy such as Nigeria, with its heavy reliance on oil revenue. For example, more than one-third of Nigeria's GDP is accounted for by the oil and gas sector and the revenue from petroleum products constitutes approximately 90% of its total export revenue (National Bureau of Statistics [NBS], 2017). Figure 1.5 shows the percentage of crude oil in total exports since 2014.

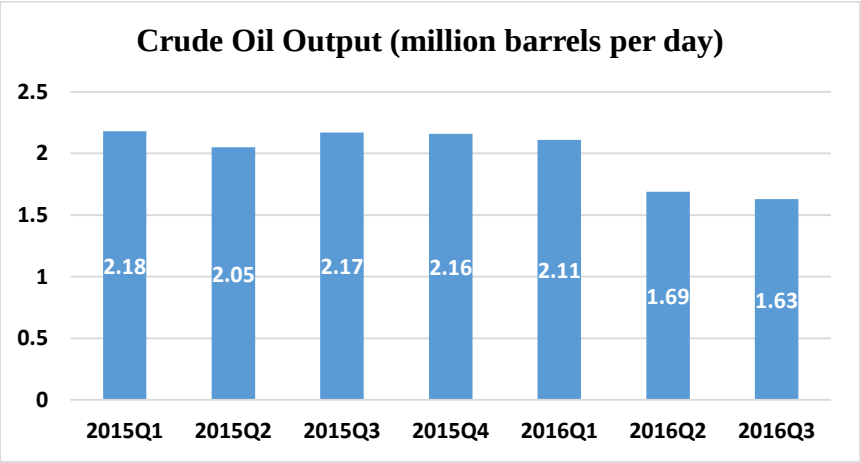
Figure 1. 5: Crude Oil in Total Exports (per cent)



Source: NBS (2017)

At the present time, Nigeria's economy is yet to recover from the effects of the decline in global oil prices that started in the second half of 2014. According to the Nigerian Gross Domestic Product Report by the National Bureau of Statistics (NBS), oil production fell to 1.63million barrels per day in the third quarter of 2016 compared to 2.17million barrels produced per day in the corresponding quarter in 2015 (NBS, 2016c). Figure 1.6 shows the reduction in crude oil output in 2015 and 2016 which implies that there has been a revenue loss for the country, adversely affecting its economy and its balance of trade. Consequently, Nigeria's economy slipped into a recession in the second quarter of 2016 recording a fall of 2.06% in year-on-year real GDP growth owing to the fact that the oil sector which has been the major source of revenue, continued to experience slow growth (NBS, 2016b; The Economist, 2016a).

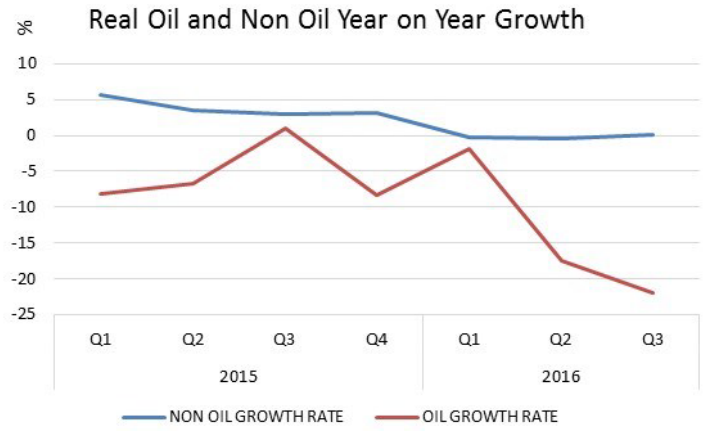
Figure 1. 6: Crude oil output in 2015 and 2016



Source: NBS (2016c)

Despite the significant effect the turmoil in global oil prices has had on Nigeria's economy, the slow growth rate can also be attributed to other factors (NBS, 2016a). On the one hand, other rapid growing sectors of the economy such as financial services and real estate output, have also slowed down with only few experiencing remarkable growth. On the other hand, Islamic insurgency in the Northeast of Nigeria has been affecting political stability; a shortage supply of refined petroleum products in the domestic market and import restrictions enacted in 2015 have also been affecting businesses. Figure 1.7 shows a comparison contribution of the oil and non-oil sector to the nation's GDP growth since 2015.

Figure 1. 7: Crude Oil and Non-Oil Growth



Source: NBS (2016c)

In the third quarter of 2016, the contribution of each sector to GDP are as follows: agriculture (24.1%), mining and quarrying (6.2%), trade (19.8%), information and communications (9.9%), manufacturing (8.6%), real estate (7.2%), and professional, scientific and technical services (3.8%) (NBS, 2016c). The agriculture sector comprises of the sub-sectors of crop production, livestock, forestry and fishing while the mining and quarrying sector comprises of the sub-sectors of crude petroleum and natural gas, coal mining, metal ore and quarrying and other minerals.

Since the recent 2014 decline in global oil prices, the non-oil sector has been growing significantly due to growth in sectors such as agriculture, Information & Communications and Other Services. According to NBS (2016c), the growth in agriculture is largely driven by crop production rather than by other types of agricultural production.

The Nigerian agricultural sector is a major driver of the Nigerian economy yet slow growth has been recorded due to the lack of storage facilities, transportation and security issues in the Northeast between 2011 and 2015 (NBS, 2016a). According to the NBS, the year-on-year

growth of this sector was 4.5% in the second and third quarters of 2016 which was a higher value than the corresponding quarter of 2015. The crop production sub-sector accounted for 93.5% and 95% of the growth in agriculture in the second and third quarters of 2016; this significant growth resulted from the concentration of the Nigerian government on agriculture (NBS, 2016b; 2016c). This is an indication that the Nigerian government can pave its way out of economic downturn if it focuses more on agriculture, especially the crop production sub-sector.

While OPEC continues to seek market stability and reasonable oil prices, the volatility in global oil prices considerably affects Nigeria's economy. According to The Economist (2017), slow recovery from recession is forecasted for Nigeria because of a shortage of foreign currency resulting from the weak oil sector and absence of a policy that can stabilise the naira currency. Many options are currently being considered to move Nigeria out of recession. One such possibility is a partnership between Nigeria and Spain, whereby the Spanish government assists in developing Nigeria's agricultural sector in order to diversify its economy (Onusi, 2016a).

Another example is the inauguration of Committees for the implementation of Nigeria-China Agricultural Mechanization programme in 2016 (Onusi, 2016b). The Economist Event, titled "Nigeria Summit 2017: Paving the way" scheduled for 6th - 7th March 2017 is also an event earmarked to discuss a possible way forward for Nigeria's economy (The Economist, 2016b). The purpose of this summit is to allow economists, government agencies, Nigerian civil society, foreign investors, industry and academic experts to brainstorm on policies and strategies required to improve Nigeria's economic growth.

In short, Nigeria urgently needs transformation of its economy in order to sustain its growing population. It is high time Nigeria shifted from being a mono-economy to a diversified economy. For Nigeria to diversify, there is a need to examine possible sectors of its economy which can sustainably improve its economic growth. Horticulture is a part of the crop production sub-sector which has largely driven the growth in agriculture (NSB, 2016b, 2016c). **This research study therefore proposes diversification into horticultural product export (HPE) as a growth strategy since arable land is one of the natural resources in abundance in Nigeria.** Some other African countries, such as Ethiopia and Kenya, export horticultural products to meet increasing demand in the global market despite having various challenges and the revenue generated has contributed immensely to their economic growth.

Horticultural products are part of the export commodities of the five countries shown in Table 1.1. The areas covered by their arable land are less compared to that of Nigeria (CIA, 2017). Another important consideration is that crude oil and petroleum products are not predominant natural resources in these countries, unlike Nigeria. This could be an explanation for why they concentrate more on agriculture for their economic development. Table 1.1 summarises how five other African economies have used HPE to enhance their rates of economic growth.

Table 1. 1: HPE in five African economies

Countries	Natural resources	Export commodities	Economic significance
Egypt (Northern Africa)	Petroleum, natural gas, iron ore, phosphates, manganese, limestone, gypsum, talc, asbestos, lead, rare earth elements, zinc.	Crude oil and petroleum products, fruit and vegetables, cotton, textiles, metal products, chemicals and processed food.	Horticultural products accounted for more than 80% of agricultural export earnings between 1998 and 2010 (Torayeh, 2013).
Ethiopia (Eastern Africa)	Small reserves of gold, platinum, copper, potash, natural gas, hydropower.	Coffee, oilseeds, edible vegetables, khat, gold, flowers, live animals, raw leather products and meat products.	Floriculture (flower industry) accounted for 80% of the total foreign revenue earnings generated from horticulture. It provided huge employment opportunity and generated more than USD 120 million foreign exchange earnings in 2008 which grew to USD 220 million by 2012 (Gebreeyesus, 2015).
Ghana (Western Africa)	Gold, timber, industrial diamonds, bauxite, manganese, fish, rubber, hydropower, petroleum, silver, salt, limestone.	Oil, gold, cocoa, timber, tuna, bauxite, aluminium, manganese ore, diamonds, horticultural products such as pineapples, mangoes and papaya	The total exports of fruits and vegetables double between 2000 and 2007 (Ouma, Boeckler & Lindner, 2013). Horticulture creates employment opportunity and contributes fiscal revenue and foreign exchange to Ghana's economy (Jaeger, 2008).
Kenya (Eastern Africa)	Limestone, soda ash, salt, gemstones, fluorspar, zinc, diatomite, gypsum, wildlife, and hydropower.	Tea, horticultural products, coffee, petroleum products, fish, and cement.	Horticulture is an essential source of foreign exchange earnings generating US$1 billion annually (European Commission Report, 2013). This sub-sector also provides employment opportunity (Horticulture validated report, 2012).
South Africa (Southern Africa)	Gold, chromium, antimony, coal, iron ore, manganese, nickel, phosphates, tin, rare earth elements, uranium, gem diamonds, platinum, copper, vanadium, salt, natural gas.	Gold, diamonds, platinum, other metals and minerals, machinery, equipment, and horticultural products such as maize, oranges, apples, grapes, grapefruit, pears and tangerines.	Horticulture is a significant sector providing employment opportunity. Fresh fruit is a prominent source of agriculture export earnings from 1998 to 1999 (Barrientos, Dolan & Tallontire, 2003) and between 2001 and 2011 (Barrientos & Visser, 2012).

However, Nigeria could exploit the benefits of horticultural products' exports in addition to the benefits of oil export. In other words, growth in HPE could coincide with the growth in oil exports because Nigeria is a member of several agreements and partnerships that could enhance its participation in the global horticulture value chains.

Nigeria has been a member of Codex Alimentarius since 1969 (FAO, 2016a). This is an international body established in 1963 by the Food and Agriculture Organisation of the United Nations (FAO) and World Health Organisation (WHO) to ensure the safety, quality and fairness of traded food products (FAO, 2016b). Codex Alimentarius refers to "Food Code" and it comprises all international food standards, codes of practice, guidelines and recommendations. In order to comply with Codex food safety standards in the world trade, agreement on Sanitary and Phytosanitary measures (SPS Agreement) is applied by members. Phytosanitary measures are certification processes that must be adhered to in order to ensure exported food products are free of harmful organisms. This implies that as a World Trade Organisation (WTO) member country, Nigeria has the obligation to apply Sanitary and Phytosanitary measures on exported agricultural products to protect human, animal and plant life and health from risks of harmful organisms such as pests, diseases and toxins (WTO, 2017).

Nigeria is also a member of the African, Caribbean and Pacific (ACP) region under the Lomé Convention which has an Economic Partnership Agreement (EPA) with the European Union (EU). One of the main goals of this agreement is to improve trade and develop the economies of members. This is therefore designed to improve the competitiveness of West African exporters in the European market through capacity building (European Commission, 2015). Through this, Nigeria has an opportunity to trade with European Union member states and could better develop this opportunity through increased HPE. Among the ACP Group, countries in West Africa are the main trade partners of the EU. This trade accounts for 40% of all trade between the EU and the ACP group. Exports from Nigeria, Ghana and the Ivory Coast to the EU account for 80% of all trade among the West African countries. Nigeria mainly exports oil to the EU while Ghana and Ivory Coast are the two largest exporters of cocoa in the world. They along with Senegal and Cape Verde are also exporters of horticultural products such as bananas, pineapples and mangoes (European Commission, 2015).

Apart from generating foreign exchange earnings from HPE, this is a growth strategy that enhances other aspects of economic development. Some of the significance of HPE is that it

increases agricultural productivity in exporting countries and enhances individual's (farmers, exporters, air freight forwarders) skills and supply chain know-how. For instance, as a result of the need to meet the growing demand for convenience and value-added horticultural products, workers become highly skilled in these activities. Participation in the global trade of horticultural products can also help to improve food safety in the domestic market because of the spill-over effect of conforming to international food safety standards. Moreover, HPE allows countries with less favourable climatic conditions to have access to the nutritional requirement that horticultural products offer for healthy living (Hatanaka, 2011), thus bringing about global food security.

It is however important to attribute all year round availability of these seasonal perishable products, first, to the World Trade Organisation (WTO) that removes trade barriers and therefore enables international trade among nations, and second, to air transport. Air transport is strategically essential for moving time-sensitive products between regions with greater geographical distances because of the short time horizon of delivery (Terry, 2014; Sales, 2013; Morrell, 2011; Kasarda & Green, 2005). Moreover, the aviation industry ensures that a seamless cooled supply chain is unobstructed thus providing the required packaging and specialised equipment such as temperature controlled warehouses and unit load device (ULD) or containers within the airports that keep the time-sensitive products safe, maintaining their quality and value (Terry, 2014; Sales, 2013). Hence, goods transported by air are often of higher quality and value than that used by ocean container vessels (Sales, 2013; Morrell, 2011).

Nigeria has not developed its horticultural products' export despite the opportunities available in the EU market. A shift to non-oil exports (such as HPE) is imperative for Nigeria's future well-being. Horticultural products are perishable agricultural products (such as vegetables, fruit, ornamental plants, trees, seeds and shrubs) that require traceability and special handling throughout their shelf life from the point of production to the point of consumption (International Society for Horticultural Science [ISHS], 2016). Due to seasonal fluctuations and unfavourable climatic conditions limiting the production of horticultural products in some developed countries, many developing countries are supplying these products to meet the increasing demand whilst improving their economic growth by participating in global horticulture value chains.

Nigeria therefore needs to overcome the barriers in the supply chain of HPE, maximise its opportunities for the production and exportation of these high-value agricultural products and

improve its economic growth like other African countries such as those outlined in Table 1.1 who are generating revenue from HPE in meeting increasing international demand for these products. There is therefore considerable potential for Nigeria to develop its horticulture sub-sector and diversify into an export trade in horticultural products along the same lines as other African economies in order to enhance its economic growth. Diversification into HPE might not be easy due to barriers which this research study seeks to explore and evaluate.

Though existing literature has identified some of the barriers to HPE in developing countries, little research has been conducted to explore the barriers pertinent to HPE from Nigeria. **Therefore, this research will address this very important issue by examining the barriers inhibiting HPE by air from Nigeria specifically to the United Kingdom, providing recommendations to improve its supply chain to enhance economic growth.**

1.2 Research questions

Based on the above contextual analysis, the research questions are:

- What are the barriers to increasing horticultural products' export by air from Nigeria?
- How can Nigeria improve the export supply chain of horticultural products to generate economic growth?

1.3 Research aim and objectives

The aim of this research is to examine the potential for increasing the export of horticultural products from Nigeria, especially by air, to the United Kingdom (UK).

The following objectives are presented as a means to achieve this aim:

1. To explore the determinants of economic growth in developing countries.
2. To analyse the significance of HPE in the economic development of selected developing economies.
3. To identify the extent of the current supply of horticultural products' exports from Nigeria, in particular to the United Kingdom.
4. To identify existing barriers that inhibit HPE from Nigeria.
5. To make recommendations as to how these barriers might be reduced, in particular with respect to the supply chain in order to increase the volume, quality and value of HPE from Nigeria.

1.4 Research Methodology

A qualitative methodology has been employed to address the above research questions in order to provide solutions which will be beneficial to both academics and practitioners. Central to this is a case study of HPE from Nigeria and stakeholders in the upstream of the supply chain. The stakeholders selected for this investigation are farmers, exporters, air freight forwarders, aviation operators and relevant government institutions. The outcome of the research has been analysed using the combination of primary data and secondary data (Gray, 2014). The primary data are analysed both manually and with the aid of NVivo 10 computer aided software to highlight the themes that emerged in the empirical investigation.

1.4.1 Secondary Data

Secondary sources of data are articles in journals and books, and statistical data from government sources and trade publications. A literature review has been undertaken in such a way as to identify key issues pertaining to horticultural products' export. This review has been an essential input into the primary data collection phase of the research.

1.4.2 Primary Data

Primary data sources are interviews, direct observations and archival records. The use of these multiple sources of evidence enables triangulation (Yin, 2014) and helps this study to ensure the credibility of the empirical data that has been generated (Saunders et al., (2016).

- Interviews with five important stakeholder groups (farmers, exporters, air freight forwarders, aviation operators, relevant government institutions) provide rich data and allow key issues relating to HPE to be understood from their experiences. The interview method was selected to allow an in-depth knowledge about the research problem. Three forms of interviews namely, focus group, face-to-face and telephone, were conducted to generate information from the stakeholders in order to investigate the barriers to exporting horticultural products by air from Nigeria to the UK.

- Direct observations carried out at the Nigerian Aviation Handling Company's (NACHO) export cargo terminal and packing site at NPQS's office during the fieldwork, make clear the reality of HPE from Nigeria and provide additional information which is used to support the evidence from the interviews.

- Archival records (such as export seminar and promotional records, airway bills and export cargo flow chart) are useful data collected from relevant organisations during this study to aid understanding of the research context. These data help to support interviews and direct observations.

1.4.3 Reasons for the choice of case study approach

A case study research design is appropriate for exploratory and descriptive purposes (Yin, 2014). This study explores the barriers to exporting horticultural products by air from Nigeria to the United Kingdom (UK) and describes the present state of HPE. Air is selected as a mode of transport because air freight enables time-sensitive products (such as fruits, vegetables, flowers) to be transported within a short time horizon so as to preserve their quality. It supports shorter lead times and reduced inventory (Sales, 2013; Kasarda & Green, 2005; Leinbach & Bowen, 2004). Moreover, the choice of the UK is because it is currently the major export destination for Nigerian horticultural products.

A single-case (embedded) design provides the necessary understanding. The rationale for using this design is that it allows the barriers to increasing HPE to be adequately captured through the experiences of the stakeholders. Five key stakeholders are covered as five units of analysis. Each of the stakeholder groups has a different yet unique role and responsibility; their common perspectives have enabled this study to provide more robust evidence. Another reason for selecting a case study design is that it allows the use of interviews, direct observations and archival records as multiple sources of evidence and has helped to produce a more valid evidence.

1.5 Importance of the Research and its contribution

This research is important in the following ways:

- It explores the barriers pertinent to HPE from Nigeria so that Nigeria can participate in global horticulture value chains (GHCVs) in a more positive way; such an investigation is very limited in previous studies.

- The research raises an awareness of GVCs with particular emphasis on HPE. It therefore contributes to the body of literature on horticultural products' export from developing countries.

- It focuses on the exportation of horticultural products which is one of the viable sectors for export diversification. This is because horticulture development will not only facilitate Nigeria's economic growth and development but it will also have a greater impact on the international community and those who benefit from it.

- Recommendations will be presented. This will help the stakeholders to make necessary adjustments to increase their participation in GHVCs. It could also guide Nigerian policy makers in making strategic decisions that can improve the horticulture sub-sector locally and also boost its competitiveness in international markets.

1.6 Research Scope and limitations

A supply chain (SC) is a network of logistics processes and the interrelated information flow from the producer to the final consumer (Emmett and Crocker, 2010). The supply chain of HPE has a broad scope which this research is not able to cover due to time and resource constraints. It therefore focuses on the upstream (production to export gate) of the supply chain of HPE to achieve the stated aim and objectives. Secondary data will be relied upon for issues from the export gate to consumption.

Although Nigeria has bilateral agreements to trade with members of the European Union, the United Kingdom is selected as the export destination in this study. This is because most of the horticultural products from Nigeria are currently exported to the UK. It is believed that resolving the issues in the supply chain of HPE from Nigeria to the UK could enhance stakeholders' access to other export markets.

This study focuses on air as a mode of transport for exporting horticultural products. The reason is that air is the only means by which these perishables could be transported from Nigeria due to a lack of cold chain containers for sea shipping. Moreover, Lagos is selected as the study location due to the fact that horticultural products are mainly shipped from Murtala Mohammed International Airport.

1.7 Structure of Thesis

This thesis is organised into seven chapters as follows:

Chapter One: Introduction

This chapter introduces the research and provides the rationale behind the choice of the proposed study. It presents the research context, problem, aim, objectives, methodology and the significance of the study.

Chapter Two: The role of exports in economic growth and development

This chapter reviews literature on economic growth. The causes of economic growth are explored to determine the factors that facilitate growth and development in developing countries. It also discusses the role of exports in economic growth and development.

Chapter Three: Horticultural products' export and its issues

This chapter explores horticultural products' export and presents issues in their supply chains through a review of relevant publications. It discusses HPE in Egypt, Kenya and Nigeria and highlights their top export products, export markets, competitors, enablers of horticulture export and their challenges in global trade. Furthermore, this chapter discusses the barriers to HPE in developing countries and the role of air freight in global horticulture value chains.

Chapter Four: Research methodology

Chapter four discusses the research methodology adopted to achieve the aim and objectives of this study. It identifies and clarifies the philosophy underpinning the research, the research design, strategy and data collection method employed. This chapter also provides justification for the methodological choices that have been made.

Chapter Five: Barriers to HPE development in Nigeria - Stakeholders perspectives

This chapter discusses the findings from the thematic analysis of the original investigation into HPE from Nigeria. The findings of the semi-structured interviews, through the real experiences of five important groups of stakeholders (farmers, exporters, air freight forwarders, aviation operators and relevant government institutions) show the barriers inhibiting HPE from Nigeria. This chapter presents an overview of the current state of HPE, especially with respect to the supply chain of fresh vegetable export and the air cargo operational procedures.

Chapter Six: Synthesis of original investigation and Discussion

Chapter six presents the main barriers to HPE and discusses the findings in relation to existing studies. It shows how additional evidence from direct observations and archival records (Appendices 6.1 and 6.2) support the findings from the multiple perspectives of the key stakeholder groups. This chapter also presents a diagrammatical representation of the interrelationships and patterns that exist across several issues identified as barriers to HPE from Nigeria.

Chapter Seven: Findings, Recommendations and Conclusions

This final chapter offers recommendations to enable Nigeria to compete in international markets and participate in GHVCs. It draws from the ideas of appropriate literature and the Global Value Chain Concept (Gereffi, 1994) and develops a theoretical basis (from findings) for improving the supply chain of HPE by air. This chapter also presents the research contribution to knowledge, limitations of the study and identifies scope for further research.

Table 1.2 shows the research objectives and the chapters where these objectives are achieved within the thesis.

Table 1. 2: Objectives linked to thesis

Objective	Chapter(s)	Research process
To explore the determinants of economic growth in developing countries.	2	Literature review
To analyse the significance of HPE in the economic development of selected developing economies.	1, 3	Literature review
To identify the extent of the current supply of horticultural products' exports from Nigeria, in particular to the United Kingdom.	5 & 6	Firsthand investigation
To identify existing barriers that inhibit HPE from Nigeria.	5 & 6	Firsthand investigation
To make recommendations as to how these barriers might be reduced, in particular with respect to the supply chain in order to increase the volume, quality and value of HPE from Nigeria.	7	Literature review

Chapter Two: The Role of Exports in Economic growth and development

2.1 Introduction

This chapter presents a critical review of literature relevant to the research questions. A justified analysis of publications by other scholars provides a theoretical basis for this research area (Saunders et al., 2016).

Relevant concepts including economic growth and its determinants, exports and their role in economic growth and development are discussed through a review of books, journal articles, publications and reports from the databases of a range of organisations.

2.2 Economic growth and development

The recent June 2016 Global Economic Prospects report by The World Bank shows a slow growth throughout the world economy owing to the decline in global oil prices, low prices of other commodities, low capital inflows and a general low state of global trade. However, emerging markets and developing economies' weaknesses are considerably greater than those of advanced economies, and this has extended from 2015 up to the present time (World Bank, 2016a).

Economic growth is defined as "the percentage increase in the number of goods and services produced in an economy over a period of time usually expressed over a quarter and annually" (Mankiw & Taylor, 2011, p12). Economic growth indicates the increase in the productive capacity of a country as well as its living standards and growth rates vary from one country to the other (Mankiw & Taylor, 2014). For a country to reap the benefits of economic growth, Lipsey & Chrystal (2015) and Sloman & Wride (2009) caution that the population growth rate must be lower than the economic growth rate among many other restraints.

These authors also indicated that rapid growth occurs at a cost and it has effects on resource utilisation, the environment and income distribution. In the case of resource utilisation, alternatives must be devised for non-renewable resources to make growth sustainable for future generations. Moreover, as a country increases its productivity, more savings and higher investment are required to achieve greater growth. An example of an adverse effect of economic growth is that there may be a loss of jobs as new technologies replace human effort,

reducing the labour force. This therefore calls for government intervention to set appropriate policies that can be used to improve these constraints while maximising growth.

Over time, the change in Gross Domestic Product (GDP) per head has been used as a measure of economic growth, though it is not a perfect measure. The World Bank defines GDP as "the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products". It measures the income and expenditure of an average individual in a country capturing only the market prices, it does not measure other things that contribute to economic growth such as health, education, leisure, life expectancy and quality of the environment (Sloman & Wride, 2009). Human Development Index, a measure of economic development, however considers such factors. This is because economic development is a broader term which includes increase in the output (economic growth) and increase in the quality of life of the people within a country (Todaro & Smith, 2015).

Notwithstanding, the change in GDP remains a valid measure of economic growth. Real GDP per capita is used to measure economic prosperity of a country and the growth in real GDP per capita indicates economic progress (Mankiw & Taylor, 2014). Even though the difference in annual growth rate can be small, it accumulates over a long period of time consequently having a significant effect on material living standards (Lipsey & Chrystal, 2015). GDP per capita allows comparisons between countries; those with higher GDP per capita are categorised as high-income countries and often referred to as the developed economies while those with lower GDP per capita are classified as low-income countries and termed developing countries (see Table 2.1 for GDP per capita in selected countries).

Table 2.1 shows there is a wide disparity between the level of living standards of high-income countries and low-income countries. A high GDP per head indicates that such countries have better living standards than low-income economies in terms of quality of education, health care, nutrition and life expectancy (Sloman & Wride, 2009). Nigeria has a GDP per capita of $2,640.3 in 2015 and a Human Development Index (HDI) of 0.514 in 2014 (United Nations Development Programme [UNDP], 2015). The annual GDP per capita growth of 3.5% in 2014 declined to –0.0% in 2015 (World Bank, 2016) and then to -2.1% in the second quarter of 2016 (NBS, 2016b). Nigeria is therefore categorised as a developing country with a low human

development. This implies that majority of its citizens have poor living standards, and the quality of education, health care, nutrition and life expectancy is low.

Table 2. 1: Gross Domestic Product Per Capita, (current US$) 2015

Country	GDP per capita (US Dollars)
Developed	
Switzerland	80,214.7
Denmark	52,002.2
United States	55,836.8
Iceland	50,173.3
Netherlands	44,433.4
United Kingdom	43,734.0
Finland	41,920.8
Germany	41,219.0
United Arab Emirates	40,438.4
New Zealand	37,808.0
Developing	
Egypt, Arab Rep.	3,614.7
Nigeria	**2,640.3**
Vietnam	2,111.1
Ghana	1,381.4
India	1,581.6
Kenya	1,376.7
Cameroon	1,250.8
Senegal	910.8
Zimbabwe	890.4
Ethiopia	619.1

Source: World Bank (2016)

While developed countries have relatively stable annual growth rates with modest cyclical deviations, the growth pattern in developing countries has been unstable, increasing during a particular period and then stagnating at some other period (Mankiw & Taylor, 2014; Pritchett, 2000). For example, growth rates in African countries stagnated between 1975 and 1994 then increased by 2.2% between 1995 and 2005 (Mijiyawa, 2013). The decline in GDP per capita worldwide between 2008 and 2009 was due to a global recession which affected many countries. Nevertheless, more recent evidence of growth in the African economy (Mijiyawa, 2013; Beny & Cook, 2009) is an indication that developing countries are trying to increase their productivity in order to increase their standards of living.

Economic growth results in further economic development in a country and vice versa (Suri, Boozer, Ranis & Stewart, 2011; Ranis, Stewart & Ramirez, 2000). However, dependency theorists argued against this two-way relationship between economic growth and economic

development because less developed countries sometimes experience economic growth but lack initiatives for economic development. According to Suri et al. (2011) and Ranis et al. (2000), increase in per capita income furthers human development and an improved quality of life also contributes to economic growth. World Bank (2016i) also states that "economic growth is central to economic development; when national income grows, real people benefit". As a result, economists have extensively studied factors that determine economic growth (Lewis, 2013; Barro, 1998, 1991; Sachs & Warner, 1997; Sala-i-Martin, 1997) to enable policy makers to make the right decisions that can enhance economic growth. These factors will be explored in more detail below:

2.3 Determinants of economic growth

Several factors have been identified theoretically and empirically to determine growth across different countries (Adu, 2013; Damoense-Azevedo, 2013; Kumar & Pacheco, 2012; Rahman & Saahuddin, 2010; Asheghian, 2009, 2004; Ledyaeva & Linden, 2008) following the application of growth models such as the neoclassical and the endogenous growth models.

The classical theory of growth emphasised that an increase in labour and capital can increase growth but it was later discovered that in the long run, these variables are likely to result in a stationary level of growth as diminishing returns set in because wages and profits will decline (Sloman & Wride, 2009; Solow, 1956). In other words, long term economic growth cannot be achieved by increasing labour and capital alone. New theories of growth later evolved to find ways to move countries beyond the level of stationary economic growth and the evidence of growth from the technologically advanced countries in the twentieth century compared to the previous century led economists to analyse technological progress and its influencing factors. The neoclassical growth model and endogenous growth theory emphasise the importance of technological progress in economic growth and evidence from other studies further supports the view that technology increases productivity (Chansarn, 2010; Fagerberg, 2000; Grossman & Helpman, 1991). Positive externalities (such as improved education and communications) result from investment in advanced technology and this encourages more growth when there are appropriate government interventions (Sloman & Wride, 2009).

Endogenous growth theory expanded the neoclassical growth model and its supporters have argued that long-term economic growth depends on the rate of continuous innovation, advancement in technology and the rate at which new technology is disseminated in a country. However, institutions, appropriate policies by governments and necessary incentives are

required to endogenously determine continuous improvements in technology. This can be achieved through supply side policies which are directed at investment in research and development, education, adequate training of workers and encouragement to bring about innovation. In essence, the government determines the level of growth of a country by the type of established institutions, policies, incentives and human empowerment initiatives that are endorsed (Lipsey & Chrystal, 2015; Sloman & Wride, 2009).

In addition to an increase in labour, capital and technological progress, theoretical findings have indicated other factors that have positive effects on growth although empirical findings have proved that there is a lack of consensus on the relationship between some of the identified variables and economic growth. While some results indicate a positive correlation with economic growth, others show this not to be proven. Nevertheless, the determinants of economic growth in developing countries may be different from those of the developed economies because of the differences in income per capita, the low level of human capital, technology and policies to mention just a few variables. A recent investigation has indicated that factors responsible for growth in Africa between 1995 and 2005 were investment, exports, agriculture, credit accessibility and government effectiveness though the lack of appropriate strategies might prevent these factors from yielding sustainable growth (Mijiyawa, 2013). The following variables are some of the determinants of economic growth especially in developing countries. These factors will be considered individually. They are:

- Exports
- Human capital
- Foreign direct investment
- Macroeconomic stability
- Terms of trade
- Trade openness

2.3.1 Exports

Export is the shipping of goods and services from one country to another. Exports have several benefits and the export sector is an important sector of a country's economy. The importance of the role of exports in increasing economic growth and creating employment opportunities is seen in the Latin American and Asian economies. Meanwhile, evidence from previous studies in relation to exports and economic growth is sketchy. Statistical findings by Jung & Marshall (1985) show that only 4 out of the 37 countries studied supported the export-led growth

hypothesis; another study by Colombatto (1990) also rejected a hypothesis relating to export–led growth.

Bahmani-Oskooee, Mohtadi & Shabsigh (1991) found some evidence in support of the export-led growth hypothesis but their results are unconvincing. Bahmani-Oskooee & Alse (1993) therefore re-investigated the relationship in less developed countries and the empirical result showed a strong support for two-way causality between export growth and GDP growth in eight out of nine countries. These were Columbia, Greece, Korea, Pakistan, Philippines, Singapore, South Africa and Thailand with no co-integration for Malaysia. Other more recent empirical studies have provided evidence of a positive relationship and bi-directional causality between export growth and GDP growth (Bahmani-Oskooee & Economidou, 2009; Mahadevan & Suardi, 2008). The discrepancy in authors' findings has been attributed to their data set and the different statistical hypothesis tests used.

The study by Bahmani-Oskooee & Economidou (2009, p.203) considered that the relationship between export growth and output growth showed a non-uniform pattern hence, the results are country specific. Developing countries were therefore classified into four groups as follows:

- countries such as Algeria, Gambia, Ghana, Malawi, Senegal, Hungary, El Salvador and Honduras where it appears that export growth does contribute to output growth and vice versa.
- countries such as Burkina Faso, Burundi, Gabon, Kenya, Lesotho, Mali, Niger, Nigeria, Togo, India, Korea, Thailand, Egypt, Israel, Argentina, Bolivia, Brazil, Costa Rica, Dominican Republic, Guatemala, Mexico and Trinidad and Tobago where the direction of the long-run relation between export growth and output growth is difficult to establish.
- countries where increased exports may stimulate output and these are Congo, South Africa, Swaziland, Tunisia, Ecuador and Nicaragua since weak exogeneity is rejected for output but not for exports.
- countries that include Benin, Guinea Bissau, Rwanda, Zambia, Bangladesh, Indonesia, Papua New Guinea, Chile and Colombia where output growth contribute to export growth in the long-run.

There has been a lack of consensus on the relationship between exports and economic growth in Nigeria. While the result by Bahmani-Oskooee & Economidou (2009) shows that the relationship is difficult to establish, an empirical study by Omotor (2008) used the bounds test

analysis. The findings were not in favour of the export-led growth hypothesis. However, Udude Celina & Enyim (2012) employed several statistical hypothesis tests such as the Granger Causality test, Unit Root, Co-integration and Error Correction tests and their results confirm that there was a long-term relationship between exports and economic growth between 1970 and 2009.

Overall, several authors through their theoretical and empirical findings supported the argument that export expansion determines economic growth in developing countries (Sulaiman & Saad, 2009; Grossman & Helpman, 1990; Dollar, 1992; Esfahani, 1991; Balassa, 1985; Ram, 1985; Kavoussi, 1984; Tyler, 1981; Michaely, 1977). An export promotion policy is therefore emphasised as a supporting strategy to enhance economic growth in less developed countries (Bahmani-Oskooee & Economidou, 2009; Bahmani-Oskooee & Alse, 1993; Balassa, 1985). Also, notwithstanding the variation in the findings relating to export-led growth in Nigeria, much emphasis is placed on the need for export development. One of the suggested recommendations made for Nigeria is that the country should invest in infrastructure and resources for export development. Other recommendations are export diversification, exchange rate stability and export policies backed with determination (Udude Celina & Enyim, 2012; Omotor, 2008).

Though many of the developing countries adopted an import substitution strategy between 1950 and 1970, their focus shifted to an export-led strategy by the mid-1970s. Export-led growth is an outward-oriented trade strategy to achieve economic growth and increase the volume of trade surplus by tapping into international markets (Ma, 2009). Many governments therefore adopted this development strategy to promote the export of some goods and services where their countries have a comparative advantage. Consequently, exports are being promoted because of their importance although it is a complex strategy. This complexity lies in the fact that it entails cross border transactions which require compliance to export regulations, accurate documentation and adequate knowledge of export supply chains amongst others. Even more so with globalisation, is the need for exporting countries or organisations to compete through their global value chains to gain faster access to global markets (Gereffi & Lee, 2012).

Many studies have indicated that export expansion or integration into the global market enhances economic growth. However, some countries that participated have witnessed a decline in the resultant relative income shares (Kaplinsky, 2000). This brings many questions to mind. What is the reason for this decline? Are the appropriate procedures, methods and

practices adopted those that are required to participate? One of the answers to such questions is that many developing countries concentrate on commodity export and this sector is largely affected by terms of trade. Further arguments in the literature have been on the applicability of an export-led strategy in developing countries.

While some authors have argued that the type and mix of goods exported matters in determining how economical the export practice is (Hausmann, Hwang & Rodrik, 2007), others have stressed the need for economies of scale to enable countries to compete in the global market. The importance of export supportive government policies and the need for structural change in the exporting country to be able to benefit from export are other considerations (Shiferaw, Hellin & Muricho, 2011; Paalhaar & Jansen, 2011; Markelova & Mwangi, 2010; Narrod, et al. 2009; Roy & Thorat, 2008; Gereffi, 1995). However, Ram (1987) cautions that developing countries exporting to the advanced economies should be aware of exploitation that may be involved through some mechanisms employed by the latter. Bruton (1998) emphasised that exports can only lead to economic growth when a country allows internal structural change of its environment by setting appropriate policies, acquiring the essential knowledge and other requirements. Bernard et al. (2007) also lay emphasis on the need for developing countries to increase the number of firms exporting so as to increase their GDP and trade surplus.

For Nigeria to employ an export-led growth strategy and benefit from export trade, the country has an obligation to change its practices internally and strategically invest in resources and conditions which can result in growth so that it can compete effectively in the global market. In other words, there are lots of factors to consider. There is a need to identify appropriate types of products to export, increase productive capacity to meet international market demand, transform its internal business environment, establish policies and strategies that will favour exports and be ready to implement such guidelines.

2.3.2 Human capital

Human capital is defined as "the whole of investments, such as education, health, and on-the-job training, which improve a person's productivity in the labor market and in other domains" (Boccanfuso, Savard & Savy, 2013, p.57). Across the literature, human capital refers to investment in workers' knowledge, skills and wellbeing aimed at empowering them to produce greater output. According to Romer (1990), a larger stock of human capital brings about innovation which leads to economic growth in line with endogenous growth models. The augmented Solow model stressed the importance of human capital for economic growth especially in developing countries (Mankiw, Romer & Weil, 1992) in addition to investment in physical capital indicated by the neoclassical framework (Solow 1956).

Evidence from more recent studies suggests that human capital is one of the elements that determine economic growth (Qadri & Waheed, 2013; Whalley & Zhao, 2013; Kumar & Pacheco, 2012; Sarkar, 2007; Barro & Sala-i-Martin, 2004; Barro, 2001) because of its influence on technological progress. However, Pritchett (2001) and initial studies by Benhabib & Spiegel (1994) showed that there is no significant relationship between human capital and economic growth. The discrepancy in their findings has been attributed to issues relating to data and the variables used to measure growth but later studies following endogenous growth theory show that there is a positive correlation.

Further evidence of a positive correlation between human capital and economic growth is made by other authors (Boccanfuso et al. 2013; Qadri & Waheed 2013; Haldar & Mallik 2010; Sarkar 2007; Vinod & Kaushik, 2007; Gemmell 1996). According to Barro, (1991), increasing the level of human capital per individual in developing countries can help them to converge towards the advanced economies; workers' empowerment however, requires relevant education (Hanushek, 2013). Education plays an important role in an economy because it increases workers' ability to create new ideas and new products needed for technological advancement and it also speeds up the rate of adoption of new technologies but more than this, education increases the rate of technology diffusion which in turn improves economic growth (Nelson & Phelps, 1966). An educated population is believed to increase a country's productivity because they can easily adopt innovation and are more efficient in what they do. Nevertheless, the quality of education enhances productivity and growth as considered recently in countries such as India, now one of the fastest growing economy in the world.

Although education enhances workers' productivity and affects the rate of technological progress of a country, the quality of education has not been strongly emphasised (Hanushek, 2013). Empirical evidence has shown that developing countries have focused on school attainment rather than improving the cognitive skills of their population and as a result of this, the overall quality of education has not improved (Hanushek, 2013; Vinod & Kaushik, 2007). However, both basic and advanced skills of the population are important elements of education required to determine long run economic growth. Hanushek (2013) has stressed the need for an appropriate school policy that seeks quality improvement in the education of a country's population to achieve economic growth. Developing countries can benefit greatly from human capital enhancement more than advanced economies by allocating additional resources to boost their human capital (Qadri & Waheed 2013). Thus, it is important for the government in developing countries, such as Nigeria, to focus on quality education.

2.3.3 Foreign Direct Investment

Foreign direct investment (FDI) has been extensively studied as an important factor that determines growth in developing countries (Omri & Kahouli, 2014; Morrissey & Udomkerdmongkol, 2012; Anwar & Nguyen, 2011; Anwar & Nguyen, 2010; Mah, 2010; Borensztein, De Gregorio & Lee, 1998; Wang, 1990; Findlay, 1978). FDI is a process whereby a foreign firm acquires ownership of a firm in another country (host country) with a degree of control over the business transactions over a longer period. The Organisation for Economic Co-operation and Development (OECD) defines FDI as "cross-border investment by a resident entity in one economy with the objective of obtaining a lasting interest in an enterprise resident in another economy" (OECD, 2013). According to The World Bank, "FDI are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor". This signifies that foreign investors seek to have a considerable influence over the management of the firms in which they have invested.

There are several arguments why FDI is beneficial yet also detrimental to both parties involved. Its impact is different from one country to another (García, et al., 2013; Herzer, 2012; Bitzer & Görg, 2009). On the one hand, inward FDI enhances local firms' productivity through technology and knowledge transfer (Keller & Yeaple, 2009; Haskel, Pereira & Slaughter, 2007) and increases their competitiveness which results in the adoption of improved production processes. The negative impact is that it also reduces their innovativeness (García, Jin &

Salomon, 2013) and their productivity as a result of a 'crowding out' effect of increased competitive pressure preventing them from making profits (Spencer, 2008; Konings, 2001; Aitken & Harrison, 1999). Outward FDI creates an opportunity for new market access and cheaper labour but it reduces productivity and the employment rate in the home country. Since innovation is essential for economic growth, having a prior knowledge of the effects of FDI is crucial especially for developing countries in terms of its impact on their ability to innovate. Research by García et al. (2013) suggests that host countries should reconsider their policies for attracting inward FDI and plan to invest in their innovation capabilities.

Nevertheless, world FDI net inflows have increased significantly from US$51.5 billion in 1980 to US$1.7 trillion in 2013 although it has declined from a peak of US$1.9 trillion in 2011. FDI is one of the largest sources of capital flow to a country. It is a stable form of capital flow exhibiting lower volatility compared to portfolio investment and bank lending (Gould, et al., 2014). Since the inflow of FDI enables technology and knowledge spillovers that can further enhance the economic growth of developing countries, many countries seek to attract foreign investment because their population requires more than domestic investment to survive and improve their standards of living.

Though FDI facilitates capital, technology and skill transfer into a host country, the stock of human capital available can hinder the rate of absorption (Benhabib & Spiegel, 1994; Nelson & Phelps, 1966). An empirical study by Borensztein et al. (1998) showed that FDI and human capital complement each other hence, FDI can only contribute to economic growth in developing countries when it is enhanced by the required level of human capital. In other words, the stock of human capital capable of absorbing advanced technology is expected to exceed a minimum threshold to cause higher output of FDI. Therefore, the role of FDI in economic growth can only be achieved if sufficient human capital is available to effectively apply the knowledge gained from the advanced technology.

The prominent growth of developing economies in supply chain linkages has caused multinational firms to be attracted to developing economies. A host country, however, can only attract foreign investors when it possesses an enabling environment such as natural resources, a stock of human capital, less stringent labour market regulations, macroeconomic stability, improved governance and transparency and a modest corporate tax rate (Gould, et al., 2014; Dutta & Roy, 2009) to mention just a few.

Some developing countries have been attracting large sums of foreign investment. The World Bank data on FDI net inflows (% of GDP) in 2013 and 2015 (Table 2.2), shows a variation across developing countries. Based on the determinants of FDI, this variation can be said to reflect their national regulatory policies, stock of human capital, trade openness, political stability, corporate tax rate, available infrastructure, governance structure and their level of economic growth and development.

Table 2. 2: Foreign direct investment inflows (% of GDP)

Developing countries	Net FDI Inflows 2013	Net FDI Inflows 2015
Bahamas	4.5	4.3
Cameroon	2.0	2.1
China	3.8	2.3
Cote d'Ivoire	1.2	1.4
Egypt, Arab Rep.	2.0	2.1
Ethiopia	2.0	3.5
Ghana	6.7	8.4
Kenya	0.9	2.3
Libya	0.9	2.5
Nigeria	**1.1**	**0.6**
Niger	8.5	7.3
Senegal	2.0	2.5
Sierra Leone	3.5	11.6
South Africa	2.3	0.5
Zambia	6.8	7.5

Source: World Bank (2016b)

Nigeria had a low FDI net inflow of 1.1 (% of GDP) in 2013 which decreased to 0.6 in 2015. This is an indication that the country has not been attractive to a great number of foreign investors because it lacks some of the aforementioned determinants of FDI. Therefore Nigeria needs to improve its regulatory policies, provide the necessary infrastructure and invest in its stock of human capital. Also, the country has to be politically stable with an excellent governance structure to improve its level of economic growth.

2.3.4 Macroeconomic stability

Low national output, unemployment, inflation, an external imbalance and an unstable exchange rate are macroeconomic issues that affect the rate of growth of an economy. Thus, every government puts macroeconomic policy in place to pursue high and stable national output, low unemployment, low inflation, a stable balance of payments and a stable exchange rate. However, macroeconomic stability is not easily achieved as policies may conflict leaving governments with difficult choices (Sloman & Wride, 2009).

Macroeconomic stability has been identified as a determinant of growth by several authors (Yohanna, 2013; Fischer, 1993; Barro, 1991; Kormendi & Meguire, 1985). While volatile macroeconomic conditions such as unexpected inflation affect productivity and investment negatively, a low level of volatility in an economy in addition to appropriate policies can lead to increased productivity. Quality macroeconomic policy has been emphasised as a tool for increasing productivity and reducing inflation, unemployment and balance of payment deficits in order to promote growth especially in developing countries (Fatás & Mihov, 2013; Bleaney, 1996). In other words, appropriate government policies can bring about a low level of volatility in an economy because it can provide a secure environment for private investment which in turn contributes to growth.

Inflation is a macroeconomic issue that refers to a general increase in prices in the economy (Mankiw & Taylor, 2011). It affects productivity and investment negatively although many studies have shown that low inflation has no particular relationship with economic growth. Therefore, governments usually ensure inflation rates are kept low and stable (for example, the target is 2% in the UK) to assist firms in setting prices and wage rates and making other economic decisions (Lipsey & Chrystal, 2015; Sloman & Wride, 2009). For less developed countries, the inflation rate is usually higher and it can result in lower economic growth if it exceeds a certain threshold (which is country specific) (Kremer, Bick & Nautz, 2013; Adu, 2013).

Unemployment is measured by the International Labour Organisation, as those in the working age that are available for work but have no job. Sloman & Wride (2009) comment that unemployment is a waste of human resources. Moreover, it is a major problem that affects the growth of an economy and reduces government income because the unemployed do not contribute to national output and home tax revenue. The economic growth of a country is determined by the constituents of its labour market (Roa, et al., 2008). Literally, labour

productivity and the level of knowledge accumulation of the labour force are important for growth. However, empirical evidence on the relationship between unemployment and growth has produced mixed results.

Such empirical evidence has employed structural time series models in some developed economies and shows that unemployment has a negative relationship with growth (Anton Muscatelli & Tirelli, 2001). Wang et al. (2012) also argue that unemployment and high economic growth can coexist in more open developing economies such as Brazil and China. On the contrary, Aghion & Howitt (1994) observed the effect of economic growth on unemployment. They stated that growth had different effects on unemployment. While an increase in growth can reduce unemployment through job creation, it can also increase unemployment by hindering job opportunities. To a large extent, a decrease in the unemployment rate in developing countries will increase growth; governments should therefore set appropriate policies in place to enhance the productivity of its labour force.

Balance of payment deficits and the depreciation of the exchange rate are likely to occur when a country earns less foreign currency than it expends (Sloman & Wride, 2009). A country is said to have a balance of payment deficit on its current account if the value of its imports exceeds that of its exports of goods and services. The exchange rate is the rate at which one country's currency is exchanged with another and this is usually influenced by its balance of payments position. In essence, a balance of payments deficit leads to a fall in the real exchange rate. Some studies that looked at the effect of exchange rate volatility in isolation proved there is no significant difference between the effect of fixed and volatile exchange rate on growth (Frankel & Rose, 2002; Baxter & Stockman, 1989).

Aghion, Bacchetta, Rancière & Rogoff (2009) observed the interaction of exchange rate volatility with the nature of macroeconomic shocks and the financial development level. They indicated that a volatile exchange rate affects international trade and also economic growth. Exchange rate volatility effect is significant in countries with a low financial development level whereas the effect is insignificant in financially advanced countries (Aghion et al., 2009). This indicates that the level of financial development of a country determines the level of the impact of exchange rate volatility on the economy.

Rapetti, Skott & Razmi, A. (2012) and Rodrik (2008) suggest that currency undervaluation can improve economic growth in developing countries. The good management of macroeconomic issues can stimulate growth in developing countries however, the stability of these factors is

dependent on a certain level of investment (Fatás & Mihov, 2013; Bleaney, 1996). Therefore the instability of macroeconomic issues should be avoided with the right policies to increase the productivity level of a country because a rise in productive potential can lead to higher per capita real income and an improved standard of living.

With an unemployment rate of 7.5% of total labour force in 2014 (World Bank, 2016c), an inflation rate of 9% and an unstable exchange rate (World Bank, 2016g), Nigeria's economy is currently affected by these macroeconomic issues. Thus, the country has a low productivity level which has resulted in a low standard of living. There is therefore need for high level of investment and appropriate policies by the Nigerian government to bring about macroeconomic stability in order to improve its economic growth.

2.3.5 Terms of trade

The terms of trade refers to the relative price of exports of a country to its imports, that is, the ratio of export prices to import prices in a country. Favourable terms of trade has been identified as a determinant of economic growth, however it is expected to result in an increase in economic growth only when it is stable (Wong, 2010; Eicher, Schubert & Turnovsky, 2008; Imam, Granziera & Norbert, 2008; Bleaney & Greenaway, 2001). There are several arguments that a country's terms of trade is susceptible to volatility as a result of instability in the global prices of goods. This external shock is a concern to both advanced economies and the developing ones.

However, the effect of terms of trade shocks on developing countries is huge because of a high dependence on primary commodity exports and imported capital goods. For example, a fluctuation in the price of oil can lead to volatility in the terms of trade and this can adversely affect an economy especially in countries that primarily depend on oil exports as a means for generating their national income (Aliyu, 2009). On the other hand, empirical evidence by Raddatz (2007) shows that external shocks account only for a small fraction of output volatility in a typical developing country. This is an indication that internal factors might be more responsible for unstable growth rather than external shocks as popularly believed. Nevertheless, Jääskelä & Smith (2013) identified world demand shock, commodity-market-specific shock and globalisation shock as three types of shock that affect terms of trade because of the impact of commodity prices, global manufactured prices and global economic activities on the terms of trade.

Export prices, the real exchange rate and types of export products are identified as some of the elements that can cause terms of trade shocks (Wong, 2010). Empirical findings by Mendoza (1995) indicated that terms of trade shocks negatively affect output in developing countries accounting for half of their GDP variation. Turnovsky & Chattopadhyay (2003) provide evidence of the negative impact of terms of trade volatility on the growth rate of 61 developing countries. A deterioration of terms of trade affects growth and another implication is that real income is adversely affected since savings and investment would fall (Eicher et al., 2008; Harberger, 1950; Laursen & Metzler, 1950). Real income is reduced when foreign capital investment is removed as a result of an unstable real exchange rate (Bleaney & Greenaway, 2001). Since terms of trade are highly affected by exports, Aliyu (2009) and Baxter & Kouparitsas (2006) suggest that developing countries may diversify their exports in order to reduce terms of trade shocks which affect their economic growth.

Table 2.3 shows the net barter terms of trade index of some developing countries between 2010 and 2014. The net barter terms of trade index shows the measure of the ratio of the export price to the import price relative to the base year 2000. For many of these countries, their terms of trade have declined over this period and this implies that their trading position is not improving.

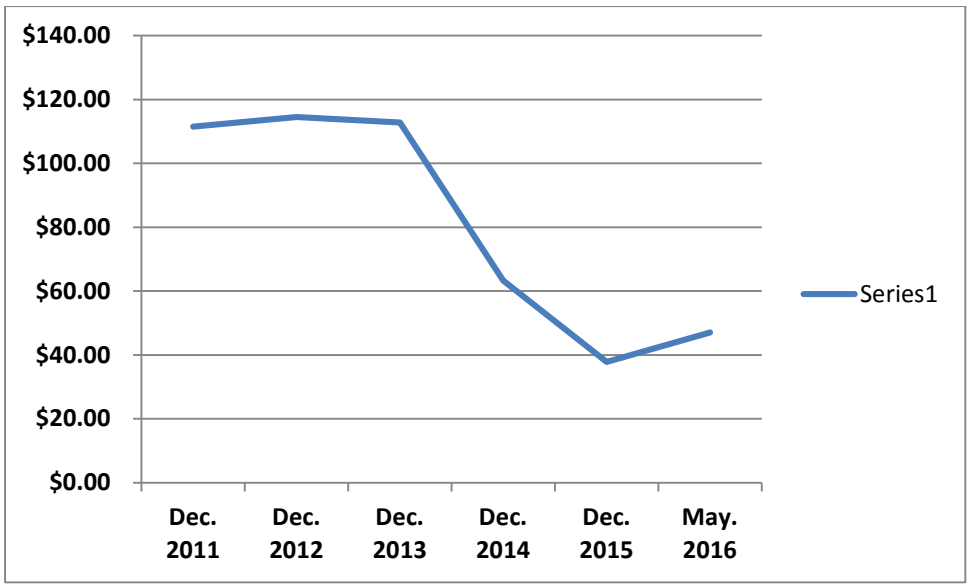
Table 2. 3: Net barter terms of trade index (2000=100)

Developing Countries	2010	2011	2012	2013	2014
Bahamas, The	82.9	87.6	87.5	81.6	81.0
Cameroon	152.0	162.9	156.8	154.4	156.4
China	82.0	79.0	79.7	81.8	84.0
Cote d'Ivoire	162.7	160.4	145.8	145.4	158.8
Egypt, Arab Rep.	140.5	148.7	152.5	151.0`	149.6
Ethiopia	129.3	135.8	131.1	128.3	136.9
Ghana	183.9	183.9	173.1	171.2	178.6
Kenya	95.2	92.0	92.0	87.8	88.1
Nigeria	**184.2**	**220.5**	**225.9**	**223.8**	**210.7**
Togo	116.2	118.8	116.4	111.8	111.1
Uganda	114.4	121.9	111.6	107.0	114.6
Zambia	192.9	197.8	184.5	177.3	172.2
Zimbabwe	113.9	114.1	105.7	105.2	108.4

Source: World Bank (2016d)

The recent decline in global oil prices has adversely affected the real exchange rate in Nigeria leading to unstable terms of trade. The crude oil price has declined considerably from $111.46/barrel in Dec 2011 to $47.01/barrel in May 2016 (Figure 2.1) rising slightly to $47.43/barrel in September 2016. As a result, Nigeria's terms of trade has been worsening since 2012. Rather than depending on petroleum as a primary source of national income, Nigeria needs to diversify its exports and include other valuable products in its export base in addition to improving internal factors to enhance growth. In so doing, the terms of trade would be less volatile so that the country can improve its economy.

Figure 2. 1: Crude Oil Price (US$/Barrel) 1, Production (mbd) and Export (mbd)



(Note: mbd = million barrels per day)

Source: Central Bank of Nigeria, CBN (2016)

2.3.6 Trade Openness

Trade openness refers to the level of trade liberalisation in an economy. Studies by Hossain & Mitra (2013); Yavari & Mohseni (2012); Harrison (1996); Sachs et al., (1995) and Dollar (1992) have indicated that there is a positive relationship between trade openness and economic growth in the long run but bi-directional causality in the short-run (Hossain and Mitra, 2013). There is no consensus among researchers about the relationship between trade openness and growth because of threshold effects, external shocks and the composition of exports. While some open economies may experience growth, others may not (Winters & Masters, 2013; Foster, 2008; Cunningham, 2003). One of the reasons may be as a result of market competition, institutional structure, and governance (Hausmann et al, 2007; Dollar & Kraay, 2003) while

another may be the extent of their product diversification or well diversified export base (Haddad et al., 2013).

Another argument raised is on the relationship between trade openness and growth volatility. This relationship is not well understood because trade openness is believed to contribute to economic growth yet open economies are prone to macroeconomic volatility. While some studies show that countries are less vulnerable to external shocks when they are largely opened to trade, others indicate open economies are indeed vulnerable to volatile growth through increased specialisation. A positive correlation between trade openness and macroeconomic volatility was found by Giovanni & Levchenko (2009) indicating there is higher impact of volatility in a typical developing country. Conversely, a study by Hnatkovska & Loayza (2004) provided evidence of a negative relationship between trade openness and output volatility. Nevertheless, Cavallo & Frankel (2008) found that export diversification plays a significant role in an economy because trade openness helps countries to overcome financial crises.

Macroeconomic volatility has been suggested as the outcome of shocks in demand and supply in the international market (Newbery & Stiglitz, 1984). Since international trade occurs between countries with different exchange rates and economic conditions, the global market is prone to price fluctuations and this instability is expected to have an impact on economic growth. On the contrary, despite the belief that fluctuations of global prices and natural disasters have caused low growth in developing countries, these external shocks only accounted for a small fraction of variance in the economic growth of these countries (Raddatz, 2007). It was further indicated that their low economic performance is mostly caused by internal factors rather than external risks. Nevertheless, Haddad et al. (2013) argued that though trade openness affects growth volatility, the effect is negative for countries with well diversified export composition while those with concentrated export composition are more likely to experience increased effects.

Terms of trade volatility has been emphasised as a contributory factor that accounted for the effect of trade openness on economic growth. According to Easterly & Kraay (2000), developing countries are more open to trade and as a result, they are more prone to terms of trade shocks and these shocks contribute to their growth volatility. Despite the fact that more openness to trade has caused higher growth volatility and terms of trade shocks in developing countries, empirical evidence by Easterly & Kraay (2000) indicated that the difference between their growth performance and that of the developed countries is not significant. This suggests

developing countries can experience more benefits from trade openness if they spread their risks and maximise their income advantage (in terms of natural resources and labour) as this can enhance economic growth.

Trade openness includes total exports and imports. Only exports show a positive correlation with economic growth in the long run whereas imports and the total volume of trade show a negative relationship with economic growth (Jawaid, 2014). Consequently, the positive link between exports and economic growth accounts for the reason why export-led growth has replaced an import substitution trade policy in some developing countries to enhance growth.

2.4 Role of exports in economic growth and development

In the midst of disparity in the export-growth nexus, exports have benefited some economies such as those in Latin America and Asia. Despite the mixed evidence, to a large extent, export growth strengthened a country's economy, provided sustainable growth, influenced the balance of payments and provided employment. Exports are one of the determinants of economic growth and a greater indication of the positive correlation between export expansion and economic growth is particularly observed in developing countries as previously discussed. However, other literature attributes the effect of exports on economic growth to the composition of exports in terms of their quality and variety (Feenstra & Kee, 2008; 2007; Hausmann et al., 2007).

The Ricardian theory of comparative advantage suggests that countries should engage in international trade by producing and exporting goods which they produce best at lower opportunity cost than others to improve their economy since no country is self-sufficient in all aspects. However, post-trade theories have criticised this theory because of several changes in today's market conditions and the rate of technology advancement. With present global supply chains, trade success is determined by patterns of trade, prices, new innovations and adaptability. Nevertheless, the law of comparative advantage encourages trade between countries and emphasises that exports enable countries to specialise in goods where they have comparative advantage and to import those goods and services where they have a comparative disadvantage.

Other studies indicate that the characteristics of exports a country specialises in determine the level of economic growth (Lee, 2011; Hausmann et al, 2007). In other words, some products might result in higher economic growth while others might yield lower levels of growth.

Empirical findings by Lee (2011) show that countries (for example, People's Republic of China) that specialise in the manufacturing and exportation of high technology products experiences greater growth compared to those that specialise in agricultural products and textiles. According to endogenous growth models, exports enable specialisation which in turn helps increase productivity through learning by doing (Grossman & Helpman, 1991; Rivera-Batiz & Romer, 1991).

Studies by Melitz (2003); Feenstra (1996) and Grossman & Helpman (1990) also emphasise that exports increase labour and total factor productivity because exporting firms are able to increase production to achieve economies of scale in order to meet the demand and intense competition in international markets. It is true that exports help increase productivity but it is necessary to attribute the importance to imports as an enhancing strategy to exports since it permits export-oriented countries to have access to capital goods required to improve production which in turn enhances their competitiveness (Bas & Strauss-Kahn, 2014; Bas & Berthou, 2012; Mody & Yilmaz, 2002). Although there is an indication that productive firms are those that engage in exports in the first instance (Clerides, Lach & Tybout, 1998), export practice in itself also induces exporting firms to be more productive in order to compete efficiently (Harris & Cher Li, 2012; Baldwin & Yan, 2012).

In addition to economies of scale, there are other externalities that result from exports. These include opportunities for transfer of technology, improvements in employees' skills and other economic benefits. Other studies have indicated that increased productivity enhances economic growth (Baldwin & Yan, 2012; Van Biesebroeck, 2005). Evidence of the role of exports in economic growth is observed in China (Jarreau & Poncet, 2012) and in the growth of the U.S Gross Domestic Product (GDP) of approximately 30% between 2009 and 2013 where exports played a predominant role in recovering and transforming its economy out of recession (The Economic Report, U.S. Department of Commerce, 2014).

Moreover, exports create employment by providing additional jobs and also supporting other jobs. For example in 2013, total exports (goods and services exports) in the U.S, supported approximately 11.3 million jobs with goods exports accounting for about 67% of the total jobs supported (The Economic Report, U.S. Department of Commerce, 2014). An additional benefit from exports is that workers in the export manufacturing companies earn more than their colleagues in non-exporting manufacturing firms (Riker & Thurner, 2011; Riker, 2010; Porter, 2003). The reason is that exporting firms invest in technology and capital due to their

accessibility to international markets and invest in workers' training to increase productivity and as a result of employees' basic and cognitive skills development, they are able to earn higher incomes. The increase in earnings, however, should not be attributed solely to exporting but rather the education attainment of the workers (Riker, 2010).

Export performance can influence a country's balance of payments. Though most economies target a trade surplus which occurs when a country increases its value of exports over its imports, it is not easily achieved due to exchange rate volatility and a country's vulnerability to globalisation problems. Factors that can determine a trade surplus include setting government policies to promote exports, reducing transportation costs, depreciation of exchange rates, financing manufacturers and exporters (Mankiw & Taylor, 2011; Sloman & Wride, 2009).

Some authors have placed emphasis on important criteria required by an exporting country to improve its economy. Such factors are exporting a variety of goods, increasing the number of exporting firms in a country, widening the size of export markets and exporting to markets that have a high growth rate of GDP because these factors are likely to have a significant effect on the growth of an economy (Reyes & Jiménez, 2012; Jarreau & Poncet, 2012; Weinstein, 2011; Athukorala, 2009; Hausmann et al., 2007; Herzer, Nowak-Lehmann & Siliverstovs, 2006; Cuaresma & Wörz, 2005; Hummels & Klenow, 2005; Greenaway, et al., 1999; Ukpolo, 1994; Fosu, 1990; Balassa, 1979) .

An important indication from these studies is that countries with a high record of economic growth usually trade in a greater variety of goods. For example, China exports a broad range of products including high-technology products, capital- and skill-intensive products and manufactured goods (Jarreau & Poncet, 2012), as well as fruits and vegetables (FAO, 2013). Also U.S. goods exports comprise a variety of goods from several industries namely petroleum products, chemicals, machinery, computer and electronic equipment, transportation equipment, beverages and tobacco, food products, and apparel (Riker, 2010; Economic Report, 2014) even though the contribution of some industries outweigh others. The size of U.S. export markets widened between 2009 and 2013 to more than 230 countries and the number of exporting firms was about 305,000 in 2012 (The Economic Report, U.S. Department of Commerce, 2014).

Notwithstanding the fact that exports lead to the increased generation of foreign income and employment opportunities and are promoted as an engine to economic growth, an exporting

country must be aware of global market complexity and export success factors which go beyond supplying the quantity and quality of goods demanded. Since the export market is more complex than the domestic market, familiarity with accurate market information and extensive knowledge of the market and customers are crucial for export success. Moreover, stringent regulations, documentation, geographical and cultural differences and other requirements need to be known and understood (Kalafsky, 2009).

Consequently many governments having recognised the benefits of exports have been engaging in trade facilitation to promote exports (Djankov et al., 2010). This accounts for the reason why many developing countries embarked on an export-led growth strategy to improve their economies. Many authors have indicated ways in which an exporting country can provide an enabling environment to support exports and these include helping organisations to overcome market entry challenges, removing/reducing trade barriers in export markets, lowering transport costs, increasing accessibility to global markets and providing financial support to exporters, manufacturers, workers, farmers to achieve economies of scale, and for innovators to engage more in research and development (The Economic Report, U.S. Department of Commerce, 2014; Sloman & Wride, 2009).

2.5 Conclusion

This chapter has explored several arguments on the factors that determine economic growth in developing countries. Much of the literature agrees that exports, improved terms of trade, trade openness, investment in physical and human capital and macroeconomic and political stability can lead to an increase in economic growth of developing countries. However, the need for primary sources of intervention cannot be overemphasised for these factors to yield economic growth. These are: the support of appropriate policies (aimed towards improving the aforementioned factors), stability of macroeconomic issues and a high level of investment in infrastructure and other resources.

The chapter draws attention to the Ricardian theory of comparative advantage. It also highlights the functions of exports from the theoretical point of view of endogenous growth models. The role of exports has been discussed which includes: specialisation, increased productivity, employment creation, balance of payments amongst others. For exports to result in economic growth on one hand, the need to trade in a variety of goods (especially those that have the potential to yield higher economic returns) has been emphasised in addition to increasing the number of exporting firms and export markets. On the other hand, there is a need to understand international market regulations, documentation and other exporting requirements. In a nutshell, exporting is a complex phenomenon which requires a deterministic approach to achieve success and the consequent increase in economic growth and development.

Chapter Three: Horticultural Products' Export and its Issues

3.1 Introduction

This chapter presents a review of literature relating to horticultural products' export (HPE) and the state of HPE in selected developing countries. While it discusses related theories, concepts and requirements for participation in global markets, it emphasises various issues in the supply chain of horticultural products exported from developing countries and also discusses the role of air freight in global horticulture value chains. This review enables the research findings to be positioned within an extensive body of knowledge (Saunders et al., 2016).

3.2 Horticultural Products' Export (HPE)

The horticulture sub-sector of agriculture has been the focus of developing countries, such as Kenya, Ethiopia and Egypt, as a means to improve their economic growth because these are high-value agricultural products that have premium prices compared to traditional types of agricultural products (Baglioni, 2014; Maertens & Swinnen, 2009; Belwal & Chala, 2008).

3.2.1 Definition of Horticulture

Horticulture is a sub-sector of agriculture which deals with crops such as vegetables, fruit, ornamental plants, trees, seeds and shrubs. Horticultural products include those that still respire at the point of consumption (fresh produce) and those that have undergone a semi-processing state of being frozen, preserved, dried, juiced and also used as ornamental designs (ISHS, 2016). These are products that require traceability throughout their shelf life from the point of production to the point of consumption because of their perishable nature. While flowers are usually used as ornaments, fruit and vegetables are consumed as part of healthy diets.

Fruit and vegetables are "soft, fleshy, edible plant products that contain high moisture content and are therefore relatively perishable in the freshly harvested state" (Desai & Salunkhe, 1991, p.301). They deteriorate easily within a short period of time if exposed to extreme temperature and hence lose value and become unacceptable to consumers (Amorim, Günther & Almada-Lobo, 2012; van Donselaar, van Woensel, Broekmeulen & Fransoo, 2006). These high-value agricultural products therefore require special handling to extend their life span, maintain their nutrients, freshness and quality and make them fit for consumption (Sales, 2013; Kuo & Chen, 2010). They are sometimes referred to as horticultural products or high-value agricultural products.

3.2.2 Importance of horticultural products

Horticultural products have both economic and nutritional benefits. The consumption of fruit and vegetables contribute to healthy living; they are known to boost immune systems and health practitioners have been advocating the increase in their consumption as an approach to alleviate deficiencies of some nutrients in humans. According to a joint report by World Health Organisation (WHO) and Food and Agriculture Organisation of the United Nations (FAO), fruit and vegetables provide the body with important vitamins and minerals required for well-being. An adequate daily intake of not less than 400g can boost the immune system and consequently reduce the risk of chronic diseases such as high blood pressure, cancer, obesity, diabetes and heart diseases (WHO, 2003).

Over time, the exportation of flowers, fruit and vegetables is a source of foreign exchange earnings for exporting countries. It is a source of income to the smallholders, it creates employment opportunities and it is a means of demand fulfilment (Sales, 2013; Leipoid & Morgante, 2013; McCulloch & Ota, 2002; Desai & Salunkhe, 1991). However, some authors have argued against the positive impact of horticultural export as a means of economic improvement because in some developing countries where these high-value crops are produced and exported, the poverty level is still high in addition to unethical practices in their production and distribution (Afari-Owusu, 2014; Leipoid & Morgante, 2013). In other words, a lack of the required resources and practices that could facilitate economic growth and poverty alleviation in the majority of the developing countries has deprived many in the population of these benefits (Afari-Owusu, 2014; Staaz and Dembele, 2008).

Nevertheless, the exportation of horticultural products can contribute to the development of African regions, create supporting industries, and increase the standard of production in agriculture (International Fund for Agricultural Development [IFAD], 2008; Dolan & Humphrey, 2000) if the appropriate practices, infrastructure, processes and policies are put in place. Horticultural products grow naturally in developing regions of the world because of favourable climatic conditions. Countries around the globe such as those in Europe where these seasonal products grow only in greenhouses, now consume them throughout the year (Hatanaka, 2011; Dolan & Humphrey, 2000) because import and export has removed the distance barrier among geographical zones (Vega, 2008).

Consequently, this perishable industry allows developing countries to partake in world trade (CBI Ministry of Foreign Affairs, 2014; Vega, 2008). For example in some actively

participating nations such as Kenya and Peru where flowers and asparagus are grown respectively, this industry has been a vital source of national income (Sales 2013). Previously unemployed people are engaged in the production of these products and they have been able to earn a living for themselves. Hence, the nation's economy is boosted while at the same time, international demands are met (Mithofer, Waibel & Asfaw, 2011; Maertens, et al., 2011). However, the stringent regulatory standards in developed regions limit the benefits of trade in developing countries causing the participation of small scale farmers and exporters to be restricted due to the high certification costs involved (Colen, Maertens & Swinnen, 2012).

According to the Centre for the Promotion of Imports from developing countries (CBI) and the Food and Agriculture Organisation of the United Nations (FAO), developing countries have enormous opportunities to tap into the global market of horticultural products because their climatic conditions are favourable to produce these high-value products if only they can improve supply chain practices and efficiency and also invest in resources required to enable the exportation of these products to other countries (CBI Ministry of Foreign Affairs, 2014; FAO, 2013).

3.2.3 Growth in fruit and vegetables production

Over the last ten years, the annual production of fruit and vegetables throughout the world has been increasing by approximately 3% per annum (FAO, 2013). In 2011, the world output of vegetables was over 1 billion tonnes while that of fruit was approximately 640 million tonnes. The significant growth in world production of fruit and vegetables has been largely driven by Asian countries and the increasing growth in horticultural production in sub- Saharan Africa (FAO, 2013). Recently, developing countries have been producing the largest share in the world production of fruit and vegetables and this has had a great economic impact on these countries. For instance, China is the largest producer of fruit and vegetables globally producing nearly 20% of fruit and over 50% of vegetables of the total world production (FAO, 2013).

The rise in the consumption and global demand for horticultural products especially, fruit and vegetables, has created opportunities for smallholders in developing regions (FAO, 2013). However, HPE is affected by global price fluctuations and strict requirements in the export market have hindered the successful participation of suppliers in exporting nations (USDA, 2013). Developing countries therefore need to invest in pest control management, infrastructure and other resources for an efficient supply chain to generate substantial economic benefits. In other words, a country can only compete effectively in the global trade of horticultural products

if it complies with the food safety and quality regulations, improves its customs services, increases its bilateral agreement with several countries as trade partners, ensures efficient supply chain management and an enabling environment with supporting policies (Torayeh, 2013). This chapter will discuss horticulture export in selected developing countries and examine the state of HPE and its significance to the development of these countries.

3.3 Horticulture export in selected countries

3.3.1 Egypt

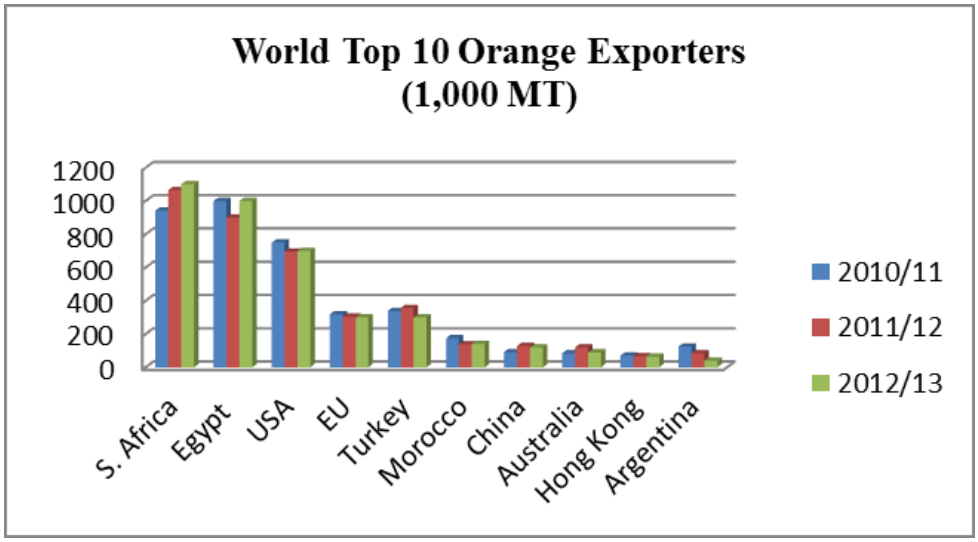
Egypt is located in Northern Africa (Figure 3.1). It is majorly a part of Africa but culturally considered as a Middle East country. It has a population of 91.51 million, a GDP of $330.8 billion, a GDP growth of 4.2% and an inflation rate of 10.4% in 2015 (World Bank, 2016e). Egypt mostly has an arid desert climate with less rainfall apart from the Mediterranean coastline therefore agriculture largely depends on irrigation (El-Nahrawy, 2011).

Figure 3. 1: Map of Egypt

Source: CIA (2017b)

Egypt is a developing country and a leading exporter of fruit and vegetables in the international market (Figure 3.2). Egypt was the fourth leading exporter of oranges and potatoes and ninth in grapes export in 2011 (FAOSTAT, 2013). Also in 2013, Egypt was the sixth largest producer of oranges in the world and the second leading exporter (USDA, 2013).

Figure 3. 2: Top Orange Exporters



Source: USDA (2013) Egypt: Citrus Annual Report 2013/2014

Horticulture export in Egypt

Horticultural products exported include oranges, potatoes, tangerines, grapes, mangoes and tomatoes (Table 3.1). The EU is the largest importer of fruit and vegetables from Egypt. Between 1998 and 2010, 41% of the total fruit and vegetables' exports from Egypt were supplied to the EU while over a period of 2000 - 2010, the share of fruit and vegetables exported to the EU increased by 31.6% and 6.6% respectively (Torayeh, 2013). During this period, horticultural products generated above 80% of agricultural export earnings.

Among the Mediterranean countries, Egypt's competitors in the EU market are Algeria, Jordan, Syria, Tunisia and Lebanon (Torayeh, 2013). Saudi Arabia is also an export destination for Egypt's fruit and vegetables. Saudi Arabia imports potatoes, oranges, onions, lemons and limes and over a period of 2005 and 2010, Egypt had the largest market share during which time vegetable exports increased by US$101.4million (Torayeh, 2013). Egypt also exports fruit and vegetables to Ukraine. The Netherlands, Spain and Syria were its superior competitors in this market between 2005 and 2010.

Table 3. 1: Top 20 Commodities, Export Value in Egypt 2013 (tonnes)

Item	Value
Oranges	1108895
Potatoes	427907
Beet pulp	426354
Molasses	407507
Rice – total (Rice milled equivalent)	335774
Onions, dry	329736
Sugar refined	237634
Vegetables, frozen	104116
Grapes	88144
Food prep nes	86005
Juice, fruit nes	82920
Tomatoes	74801
Flour, wheat	71708
Beans, dry	69597
Olives preserved	59634
Fruit, fresh nes	58516
Macaroni	55765
Fruit, prepared nes	55447
Potatoes, frozen	52377
Cheese, processed	52220

Source: FAOSTAT (2016a)

However, during 2006 – 2010, Egypt's fruit export to Ukraine increased by 2.7% while vegetable exports grew by approximately 5.7% (Torayeh, 2013). Egypt is the main exporter of oranges to Russia followed by South Africa, Turkey, Spain and Morocco (USDA, 2013).

In terms of oranges, Egypt's competitors in the global market are South Africa, Spain, the United States, China, Australia, Turkey, Morocco, and Argentina. South Africa is its major competitor. However, Egypt had competitive advantage over South Africa during the latter part of 2013 due to fungal black spot disease in South Africa's exports which led to a ban of South African oranges in the EU (USDA, 2013). In 2013, the top export destinations for Egypt's oranges are the EU, Russia, Saudi Arabia, Ukraine, the United Arab Emirates and Iraq. Other exporters of oranges to these markets are South Africa, Turkey, Spain, Morocco, the United States (U.S.), China, Australia and Argentina. Moreover, the U.S. became a new export market for Egypt's oranges and tangerines in 2013 and the export contract was predicted to yield high returns for Egypt (USDA, 2013).

Egypt has challenges despite its position in the global trade of horticultural products. For example, its oranges were banned in Iran due to payment difficulties that sprang from sanctions by the U.S. and the EU against Iran in 2010. This invariably caused a decrease in the volume

of exports from Egypt because prior to the ban, Iran was the third largest importer of Egyptian oranges (USDA, 2013). Although Egypt and the EU have had a bilateral agreement to facilitate the trade of agricultural products since 2004, produce with a high sugar content such as fruits and vegetables are not fully liberalised and this leads to a high trade cost of these products.

Mediterranean fruit fly (Ceratitis Capitata) affects Egypt's orange and peach production and exports. As a result, compliance with food safety and phytosanitary measures is a major problem encountered by the Egyptian farmers trading with the EU. Other markets such as Ukraine and Saudi Arabia have begun to compel Egypt to comply with the food safety health regulations due to the ban of Egypt's products by the EU (Torayeh, 2013). As a result, non-compliance with food safety and quality regulations have become a barrier Egypt must overcome in order to compete in the global market.

Competition in international markets is dependent on several factors such as bilateral agreements, trade costs, seasonality, transportation costs and food safety and quality control. Similarly, transportation costs, seasonality, tariffs, and distance to the market are the constraints to orange exports from Egypt (USDA, 2013). For example, Turkey benefits from distance advantage while South Africa has a seasonality advantage over Egypt. While the production period is July to September in South Africa, that of Egypt is November to May. This implies that South Africa would have captured the international market before the arrival of products from Egypt (USDA, 2013). Also, Yemen and Syria markets are preferred by Saudi Arabia to Egypt because of distance and the cost of trade (Torayeh, 2013).

Notwithstanding, the Egyptian government is investing in pest control and cold treatment training thereby supporting continuous production and exportation of fresh produce to other countries. One of such quality control programme funded by the government to combat the spread of pests is the "Fruit Fly Resistance Project" (USDA, 2013). Moreover, Egypt's aviation industry is well developed and this allows the increase of its cargo terminal capacity and the improvement of its cargo services. Egypt has EgyptAir as its flag carrier airline and EgyptAir Cargo flies to about seventy international cities in Europe, USA, Canada, Africa, and The Gulf area. Huge cargo facilities are dedicated to support air transportation of horticultural products in order to preserve their colour, taste and texture (EgyptAir Cargo, 2015). Therefore Egypt is likely to retain its position in global market due to substantial investment in support of its HPE.

3.3.2 Kenya

Kenya is situated in Eastern Africa. It has a population of 46.05 million, a GDP of $63.40 billion, an annual GDP growth of 5.6% and an inflation rate of 6.6% in 2015 (World Bank, 2016f). Kenya's climate varies from one zone to the other although it is mainly tropical. Most of its agricultural crops are grown in the Central Highlands and Rift valley; a region characterised with fertile land and high rainfall throughout the year (World Bank; CIAT, 2015).

Figure 3. 3: Map of Kenya

Source: CIA (2017c)

Kenya is highlighted because its horticultural sub-sector has become prominent among its sub-sectors of agriculture for more than three decades (HCDA, 2013). Kenya has the largest share of fruit and vegetables exports from African countries and currently, the majority of Kenyan fresh produce is imported by the UK (The Environmental Association of Universities and Colleges [Eauc], 2014). Also, Kenya is an African country with contextual similarities to Nigeria in terms of favourable climate, arable land for agricultural production and soil fertility. In addition, Kenya's horticulture development is well documented in the literature so, information can easily be accessed.

Horticulture export in Kenya

The Kenyan government has recognised that the horticulture sub-sector of agriculture has the potential of creating jobs for its citizens, improving healthy living, becoming a source of income and foreign exchange. It also has other benefits such as the horticultural products being raw materials for other industries and has invested generously in this viable sector. According to a horticulture validated report in 2012, Kenya's economy has been supported by its agricultural sector providing jobs for 80% of its population and the sector also accounts for 30% of its GDP.

Horticulture generates US$1 billion annually and has been an essential source of foreign exchange income to Kenya's economy (European Commission Report, 2013). The World Bank (2013a) indicates that among merchandise goods export in 2012, tea contributes the largest share (20%) to export income followed by horticulture (11%).

Kenya exports flowers, fruit and vegetables to different countries depending on the market demand. Green beans and pineapples are among the top horticultural products exported. Others include avocado and peaches (see Table 3.2 for top export products). The flower industry has also been growing since 1988 and there has been a considerable increase in the volume of flowers exported. In 1988, 10,946 tonnes were exported and it has been increasing annually up to 122,825 tonnes in 2015 (Kenya Flower Council [KFC], 2016). Cut flowers and vegetables are Kenya's main horticultural produce exported to the EU.

Table 3. 2: Top 20 Commodities, Export Value in Kenya 2013 (tonnes)

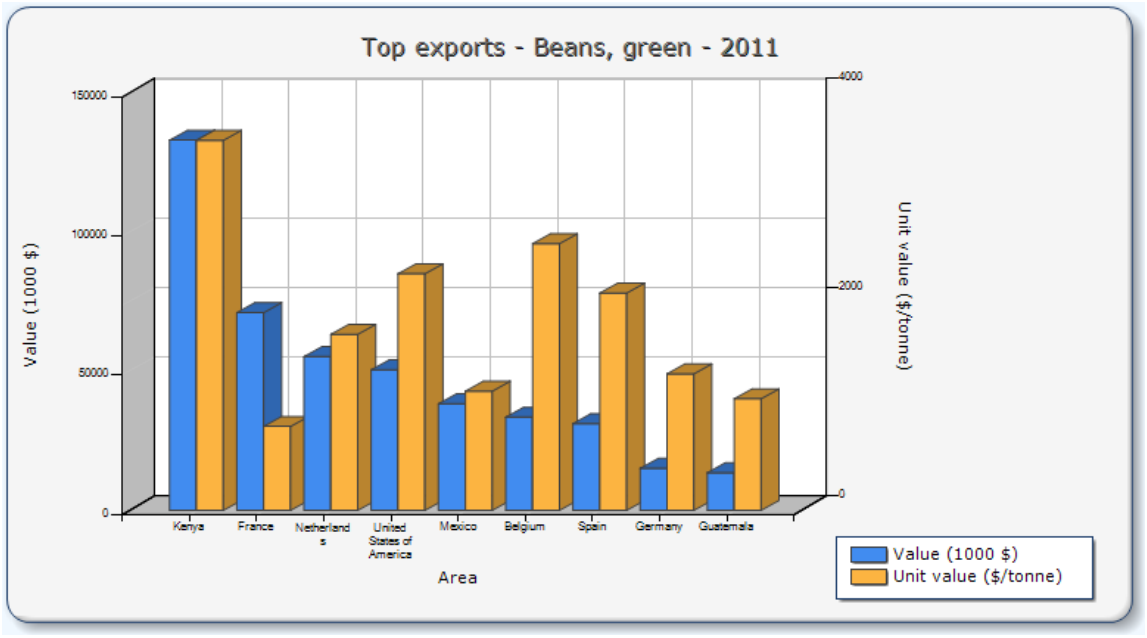
Item	Value
Tea	448809
Beverages, non-alcoholic	61002
Bran, wheat	60485
Pineapples canned	53574
Coffee, green	48890
Beer of barley	48450
Oil, palm	48015
Beans, dry	43313
Cigarettes	40526
Beans, green	32081
Sugar confectionery	30155
Avocados	25002
Vegetables, preserved nes	23521
Juice, pineapple, concentrated	17404
Juice, fruit nes	16904
Margarine, short	15877
Mangoes, mangosteens, guavas	15743
Food prep nes	12014
Wheat	10224
Tobacco, unmanufactured	10122

Source: FAOSTAT {2016a)

Since the colonial era, the major export market for Kenya's horticultural produce is the European Union. These products are exported to the United Kingdom, France, Belgium, Germany, Italy and Netherlands. However, one-third of its total exports to the EU is shipped to the UK. Other markets comprise of Saudi Arabia and South Africa (HCDA, 2013). Kenya was

the largest exporter of green beans in 2011 followed by France, Netherlands, USA, Mexico, Belgium, Spain and Germany (Figure. 3.4).

Figure 3. 4: Top green beans exporters



Source: FAOSTAT (2013)

According to the World Bank (2013), the African market was the main destination of Kenya's export in 2012 followed by the EU market because of the economic condition in the EU that led to weak demand. Approximately half of Kenya's produce destined for the African market was exported to East African countries. The EU is the major importer of Kenya's roses (Table 3.3) while Japan, USA and Russia are the other market destinations. Supermarkets in the United Kingdom are the main buyers of flowers from Kenya (KFC, 2016). Although there is growth in the direct sale of flowers to buyers, about half of all sales are done through Dutch auctioning (KFC, 2016).

Table 3. 3: Key horticultural commodities export from Kenya to the EU

Commodity	**Quantity (tonnes)**		
	2011	**2012**	**2013 (- 07/2013)**
Cut flowers	121 891	123 511	75 371
Fresh vegetables	68 086	103 357	41 382
Fruits	37 068	45 110	30 328

Source: European Commission (2013)

For mangoes, the Middle East is Kenya's main export market because of less stringent regulations on food safety compared to the EU and USA (United States Agency for International Development – Agriculture, Fisheries and Food Authority, [USAID-AFFA], 2014). In the Middle East market, Kenya's 'Apple Mango' has high demand and seasonality advantage over that of Pakistan's and Indian's because of its smell and attractive colour when ripe. Kenya's exports of mangoes to the Middle East is about 7% of world mango imports. Kenya has a competitive advantage in this market even though its mangoes are more costly (USAID-AFFA, 2014).

Despite the substantial export performance of Kenya's horticulture in international markets, HPE still faces both internal and external challenges. Some of the internal challenges are a dynamic operating environment, conflicting regulations among the relevant agencies managing the sub-sector, climatic change, limited finance and inaccessible credit facilities, a lack of adequate infrastructure, and poor post-harvest handling. While some of the external challenges in international markets are rigid regulations and unfavourable export requirements, there is a lack of competition due to high transactional costs and increased competition (HCDA, 2013).

Pests such as the fruit fly, powdery mildew, seed weevil and anthracnose often attack Kenya's mangoes thereby causing about 40% losses during the post-harvest period (USAID-KHCP, 2013). These mangoes therefore suffer from poor quality and this has hindered their exportation to a wider market like the EU where strict phytosanitary regulations are in force. This is caused by the lack of handling methods required both during harvest and post-harvest periods. Storage facilities, transportation and packaging are also issues facing the country in addition to mango pest invasion which results in an inability to become Good Agricultural Practices (GAP) certified. Notwithstanding, Kenya's mangoes are gradually gaining recognition through international exhibitions such as Germany's Fruit Logista and Dubai's World of Perishable exhibitions where both importers and exporters meet to facilitate international trade of perishable agricultural produce (USAID-AFFA. (2014).

Kenyan government policies deliberately support its horticultural sub-sector. In addition to a National Horticultural Policy which lays down the repositioning and revamping interventions for the sub-sector, other strategies are the Agricultural Sector Development Strategy 2010-2020 (ASDS), the Strategy for Revitalisation of Agriculture (SRA) and the First Medium-Term Plan of the Kenya Vision 2030 which enhance horticultural development (HCDA, 2013). Moreover, relevant institutions such as the Horticultural Crops Directorate (HCD), Kenyan Plant Health

Inspectorate Service (KEPHIS), the Fresh Produce Exporters Association of Kenya (FPEAK), collaborate to provide appropriate guidelines to stakeholders.

The vision of HCD is "a globally competitive horticulture sub-sector in Kenya" while its mission statement is "to develop, promote, facilitate and co-ordinate growth of a commercially-oriented horticulture sub-sector through appropriate policies and technologies to enhance and sustain socio-economic development" (HCDA, 2013, p.3). The Kenyan government continuously provides a liberalised trading environment and embark upon several structural and macroeconomic reforms to improve this sub-sector (HCDA, 2013). Additionally, private sectors are involved in horticultural products' marketing to international markets and this has impacted on the growth of its horticulture sub-sector (HCDA, 2013).

The development of infrastructure is also one of the ways the Kenyan government has facilitated HPE. Infrastructure services in Kenya have improved, contributing to growth (World Bank, 2015b). Substantial investment in technology and resources combined with a high level of farmers' expertise in production, logistics and marketing has led to the improvement in the supply chain of flowers thereby attracting investors to Kenya's flower industry. For example, cool storage facilities, computerised irrigation systems and fertilisers are used by the farmers. Also, grading and bouqueting are value-adding attributes incorporated for better performance during the production and distribution of flowers (Horticulture validated report, 2012).

Moreover, Kenya has established a viable aviation industry and this enables its air transport and air freight services to experience relative success (Groom & MacGregor, 2007; Fatokun, 2005). Kenya relies on air freight for transportation of its high value products to the European markets because of the significant role of air freight in the development of horticulture export. One of the products of Kenya Airways Cargo is called KQ fresh and it ensures that airport and air cargo services are designed to cater for an efficient, reliable and seamless cool chain transportation of horticultural products (Kenya Airways Cargo, 2017).

3.3.3 Nigeria

Nigeria has a population of 182.2 million, a GDP of $481.1, a GDP growth of 2.7% and an inflation rate of 9.0% in 2015 (World Bank, 2016g). There are two seasons in Nigeria, namely the rainy season and the dry season. Though Nigeria's climate varies across different regions, it is mostly tropical. More than 67% of its regions have an abundance of rainfall throughout the year. As a result of this favourable climatic condition, the country is rich in natural resources and has potential for increased agricultural productivity (FMARD, 2016).

Horticulture export in Nigeria

Despite Nigeria's positions as the 11th and 14th among the top vegetable producers and top fruit producers in 2010 respectively (FAO, 2013, p168), fruit and vegetables only account for a small percentage among its export flows (Sotunde, 2013). The main commodities exported are cocoa beans, soybeans, cottonseed, cashew nuts and rubber (See Table 3.4 for top export products in 2013).

In Nigeria, horticulture export is almost non-existent (FAOSTAT, 2016b; UNCTAD, 2016; European Commission, 2015) unlike in Egypt and Kenya. Nigeria is the main African country producing mangoes in large quantities and one of the top mango producing countries in the world (Table 3.5).

Table 3. 4: Top 20 Commodities, Export Value in Nigeria 2013 (tonnes)

Item	Value
Cocoa, beans	182900
Sesame seed	153400
Bran, wheat	93729
Cake, palm kernel	77000
Cashew nuts, with shell	75159
Rubber natural dry	51332
Cotton lint	37469
Cocoa, butter	24233
Oil, palm	18000
Ginger	14329
Cocoa, powder & cake	13706
Soybeans	8800
Cottonseed	7800
Maize	7530
Beverages, non-alcoholic	7300
Cigarettes	5757
Vegetables, fresh or dried products nes	5478
Food prep nes	4359
Beer of barley	4307
Sorghum	3858

FAOSTAT (2016a)

Table 3. 5: Principal mango producing countries in 2013

Country	Production (tonnes)
India	18,002,000
China	4,450,000
Thailand	3,141,950
Indonesia	2,058,607
Mexico	1,901,871
Pakistan	1,658,562
Brazil	1,163,000
Bangladesh	950,000
Nigeria	850,000
Egypt	834,543

Source: FAOSTAT (2016b)

According to Thomas (2012), a number of horticultural crops such as lettuce, cucumbers, spring onions, amaranth and eggplants are produced in Nigeria. However, the main exported ones are the indigenous types consumed by Nigerians in the UK (see Appendix 5.1 and 5.2).

State of Horticulture sub-sector in Nigeria

Thomas (2012) noted that the horticulture sub-sector had not been supported by national development strategies. Notwithstanding, it can contribute to food security, promote healthy living and alleviate poverty. Horticultural products in Nigeria are mostly manually cultivated by subsistence farmers with a low scale of production. The production of agricultural crops is not enhanced with irrigation systems rather, it mostly depends on wells, boreholes or rainfall and this has been undermining the production process (FAO, 2016c). Flower production (floriculture) is more prominent in the urban centres of Lagos and Port-Harcourt (Thomas, 2012; Banjo, Lawal, Fapojuwo & Songonuga, 2003). A case study of horticulture value chain in Ibadan and Lagos showed that horticulture production generates employment in urban areas and suppliers of these products are making substantial earnings (Thomas, 2012). Meanwhile products are mostly grown on unsecured land especially in urban areas.

Results from Kainga & Johnson's (2012) study on the economic analysis of horticultural enterprises indicated that small scale farmers engage more in horticultural production in Nigeria and a large proportion of the farmers are non-co-operative members that lack finance.

Therefore, operating on individual capacity undermines their accessibility to the international market. Despite the challenges encountered, horticulture production yields high profits (Kainga & Johnson, 2012). This indicates that Nigeria has the potential to transform its economy through horticulture production and exports.

Poor control of insect pests and diseases was identified as a constraint to horticultural production and this has been affecting farmers' productivity (Ibeawuchi et al., 2015; Banjo et al., 2003; Denton & Swarup, 1981). Despite the awareness of many of the farmers about the pest issue, their form of pest control is still based on traditional methods because they believe that these methods are cheaper, simple to use and readily available to them. The quality of horticultural products is a growing concern across the world yet farmers lack knowledge of pesticides and their application. As indicated by Banjo et al. (2003), many of the farmers need to be educated on appropriate pest control measures to improve the yield and quality of their products. The pest problem is a challenge to horticultural crops and in recent times, tomatoes were scarce in Nigeria as a result of an attack by a moth called Tuta absoluta (Prisco, 2016).

Some issues preventing horticultural developments are a lack of policy, absence of institutional support, absence of agricultural extension practices, poor technological and marketing infrastructure, a lack of credit facilities, a lack of land (in urban areas) and water (Thomas, 2012). Consequently, fresh products cannot be handled since they are prone to quick deterioration. According to Olabiyi, Okusanya & Harris (2008), health certification issues, low economies of scale, a lack of organic farming techniques, infrastructure and an enabling national regulatory framework are the constraints that have prevented Nigeria from accessing international markets. Nigeria can become an important supplier to the developed countries but it must overcome the barriers to horticulture development since it has the potential to produce and export these perishable agricultural produce like other African countries in order to boost its economic development. The poor state of horticulture has principally been attributed to the Nigerian Agriculture Enigma discussed below:

Nigerian Agriculture Enigma

Over the years, more than two-thirds of government revenues have come from oil exports (Euromonitor International, 2016) because Nigeria has over depended on crude oil as its major source of foreign exchange income. High reliance on the petroleum sector has subjected agriculture to being portrayed as a poor man's venture and this is evidenced by the search of youths for white collar jobs in oil and gas and related industry after graduation from higher

institutions of learning. Meanwhile before the 1960s, Nigerian agricultural export products consisted of cocoa, rubber, palm kernel, groundnuts and Nigeria was a major player in the global agricultural market. Agricultural export has declined in the last four decades due to the lack of infrastructure, an enabling environment and the abandonment of agricultural support services such as incentives and extension programmes (FAO, 2016c; Walkenhorst, 2007).

Nigeria was largely known for the production of cash crops before the oil boom in the 1970s (Odulari, 2008) yet now, 60% of its arable land is currently not utilised (FMARD, 2016). In 2013, approximately 7.5% of its citizens are unemployed (World Bank, 2016c) whereas its land resources that can be transformed to provide jobs for its citizens are left fallow. Unlike Kenya where the agricultural sector provides jobs for 80% of its citizens (USAID-AFFA, 2014), only 46.1% of Nigeria's labour force is currently employed by the agricultural sector (Euromonitor International, 2016).

Agriculture contributed 20.2% to Nigeria's GDP in 2014 (FAO, 2015; World Bank, 2016h) but this sector could contribute more because it has abundant resources to produce agricultural products, especially high-value types. Over time, agricultural development in Nigeria has been facing many challenges and some of the constraints were summarised by Manyong (2005) as technical, resource, socioeconomic and organisational constraints. Technical constraints included a lack of infrastructure, low quality inputs, invasion of crop pests and diseases, inefficient distribution systems and environmental risks. Resource constraints include shortage of labour and the low quality of land. Socio-economic constraints include a lack of standards, lack of credit facilities to farmers, land tenure issues, high cost of farm inputs, and an increase in imported food. Organisational constraints include a lack of collective action among farmers. The most prominent constraints emphasised are the lack of infrastructure, processing facilities, storage facilities, insecurity and high cost of farm inputs.

Furthermore, Ugonna, Jolaoso & Onwualu (2015) recently identified constraints to developing the tomato value chain in Nigeria as production, storage, marketing, processing, finance and funding, research and development constraints (see summary of challenges in Table 3.6).

Table 3. 6: Challenges of developing tomato value chain in Nigeria

Production Constraints	Storage Constraints	Marketing Constraints	Processing Constraints	Finance & funding Constraints	R & D Constraints
Poor agricultural practices	Lack of storage facilities	lack of marketing information (e.g. seasonal pattern)	Inadequate raw materials	Inadequate funds	Lack of laboratories
low quality seeds	High cost of storage materials	Poor marketing structure	High cost of processing	Lack of credit facilities	Research institutes lack equipment
Poor application of fertiliser and pesticides	Poor storage management skills		Inadequate power supply	High interest rate	Lack knowledge of modern equipment usage
Lack of infrastructure	Poor pest management skills		Increase in imported food		
Lack of experienced man power					

Source: Ugonna, et al. (2015)

Moreover, the Nigerian aviation industry which is supposed to enable the transportation of these time-sensitive products, has been facing several challenges despite the introduction of international air service liberalisation. Its airport and cargo services are inefficient and as a result, it has a low level of traffic unlike some other African countries such as Kenya and Egypt (Ismaila, Warnock-Smith & Hubbard, 2014).

According to Euromonitor International (2016), there are genuine growth prospects for Nigeria's economy if the country can concentrate on the export of non-oil products now that there has been a decline in oil exports. To reduce poverty, 7% real growth is predicted and non-oil sectors such as agriculture, services and trade can have positive impact on Nigeria's economy. Although the agricultural sector has grown slightly over the years through the expansion of its cultivated area, an enabling environment along with a significant improvement in its agricultural sector as a whole, is emphasised as a means to positively impact on Nigeria's economy.

Considering the importance of Nigeria in Africa, its growth prospects and how its development could have significant impact on the world economy at large, it is worth focusing on how Nigeria's economy could be improved. Since Nigeria has opportunities such as favourable climate, arable land and high labour force to develop its horticulture sub-sector in both urban

and rural areas, relevant institutions need to collaborate to provide appropriate guidelines for the development of this sub-sector so that it can meet domestic and international demands (Thomas, 2012). This study therefore recognises the need to focus on HPE to solve unemployment issues, alleviate poverty and increase agricultural productivity in Nigeria to generate economic growth as evidenced in Kenya, Ethiopia and other African countries.

Horticulture products are time sensitive products that require quick speed of delivery offered by air transport. Air cargo is therefore selected as a means to transport these products from Nigeria to the UK to sustain their overall quality – nutrients, freshness, texture, appearance and taste to meet customer satisfaction.

Relying on the trade agreement between ACP countries and the EU, this study has selected the UK as its export destination because majority of its exported vegetables are currently shipped to the UK, where the Nigerian immigrants' population has given room for the export of its indigenous vegetables. Nigeria accounted for 2.3% of the foreign-born population in the UK in 2015, of which a greater proportion live in London (The Migration Observatory, 2017). According to the 2011 UK Census, the population of Non-UK Born Nigerians is 191,000 (Office for National Statistics [ONS], 2015). This estimate however excludes irregular migrants or children born outside of Nigeria and those that have relocated to the UK as citizens of another EU member state (Grant and Wheeler, 2015).

In the light of the need to diversify to non-oil export, this research project aims to examine the potential for increasing HPE by air from Nigeria. Little has been written on this; it is therefore important to investigate and identify barriers that are hindering horticultural exports by air from Nigeria to the UK. In-depth knowledge about this possibility and the subsequent recommendations that will be made in this study could create an awareness of requirements for participation in global horticulture value chains (GHVCs) and help the relevant stakeholders to realise this opportunity. It could also guide policy makers on decisions relating to developing an efficient supply chain for HPE.

Summary

In spite of the challenges to HPE in Egypt and Kenya, these developing countries are still major producers and exporters of horticultural products across the world. They have EgyptAir and Kenya Airways as their home carriers respectively; thus their aviation industries facilitate the distribution of horticultural products to several international markets. The climate condition in Egypt is not favourable for horticultural products, yet production is supported with irrigation

and the country is known for its massive production and exportation of these high-value products. Unlike Nigeria, Egypt and Kenya have continued to develop their horticulture sub-sector to meet both domestic and international market demands despite the food safety and quality compliance issues, pest-control and other domestic challenges. This is a lesson for other countries with potential for HPE.

3.4 Supply chain management (SCM) of horticultural products for export

The supply chain for horticultural products (fresh flowers, fruit and vegetables) consists of a network of activities between production and consumption that include production, processing, storage, distribution and consumption. In order to achieve competitive advantage, meet customer demands and maximise revenue, the supply chain management of these integrated activities and the associated information flow must be incorporated, co-ordinated and effectively controlled (Emmett and Crocker, 2010).

Supply chain management is still in its evolving state and to this end, there is no unanimously accepted definition of SCM. Ross (2013, p9) offered a definition of SCM:

> *Supply chain management is a continuously evolving management philosophy that seeks to unify the collective productive competencies and resources of the business functions found within the enterprise and outside in the firm's allied business partners located along intersecting supply channels into a highly competitive, customer-enriching supply system focused on developing innovative solutions and synchronising the flow of market place products, services, and information to create unique, individualised sources of customer value.*

The management of the supply chain of fresh horticultural products is complex (Coyle, Langley Jr, Novack & Gibson, 2013; Shiferaw et al. 2011; Blackburn & Scudder, 2009; Ahumada & Villalobos, 2009) and exporting increases its complexity. A short shelf life, demand fluctuations, seasonality, weather variations and food safety concerns are critical issues along the HPE supply chain (Chandrasekaran & Raghuram, 2014; Shukla & Jharkharia, 2013). Other issues are environmental impact, ethical issues, increased product prices, and food miles which is defined as the total travel time taken to transport food from farm to consumers (Rajkumar, 2010).

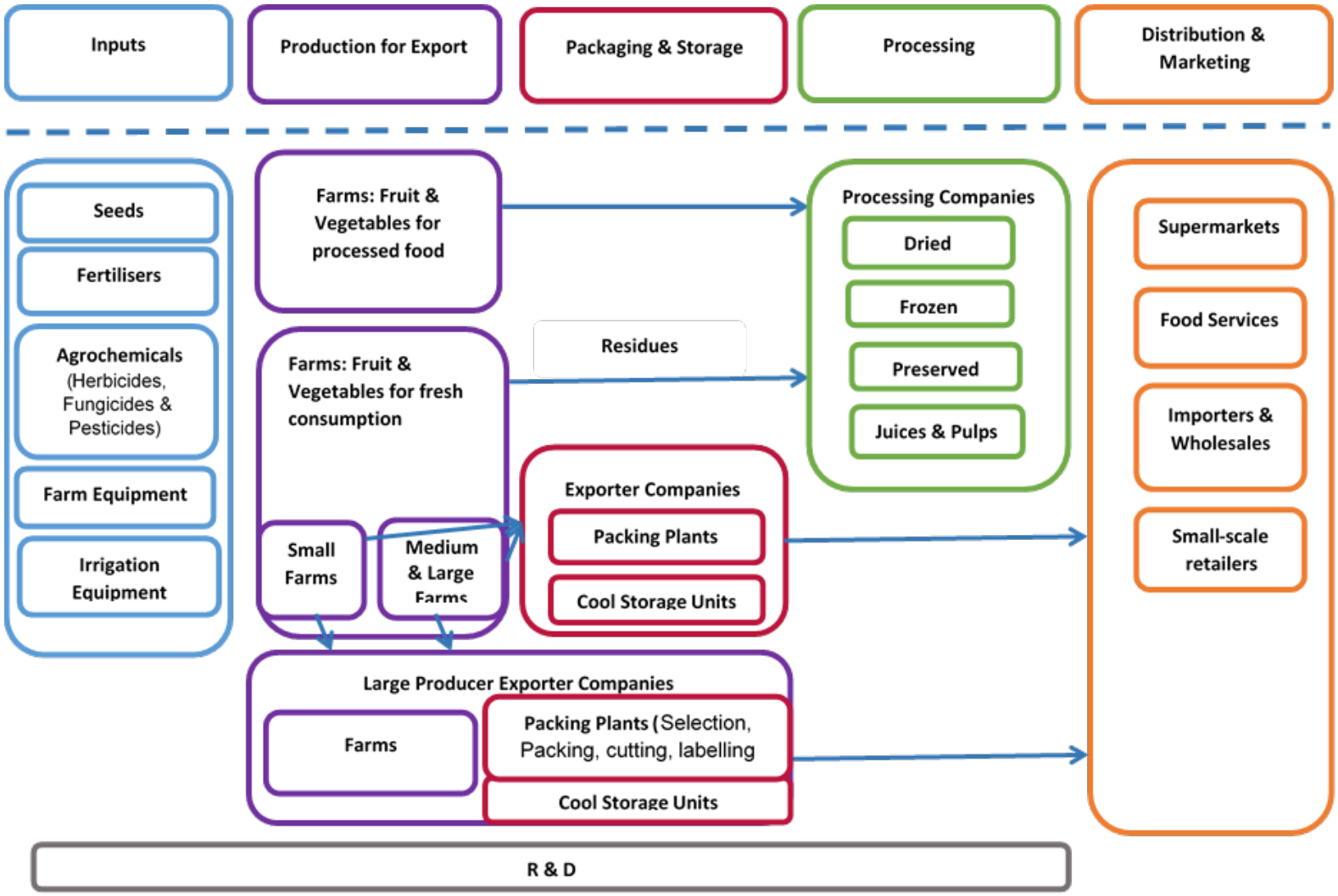
As a result of environmental impact and other ethical issues, proponents of sustainable development have criticised HPE (Leipoid & Morgante, 2013; Freidberg, 2009; MacGregor &

Vorley, 2007). Notwithstanding, a massive growth in population, health campaigns and advice on nutritionally healthy diets have propelled the growth in demand for fresh fruit and vegetables (Sales, 2013) and exports have enabled year-round consumption in developed countries and thus allowed developing countries to participate in international trade of these products (Hatanaka, 2011; Vega, 2008; Devlin & Yee, 2005).

Supply chain management strategies are required for producing better performance in the HPE chain. Some of the strategies include the integration of internal and external business processes, effective communication across the chain and the usage of information and communication technology (ICT). However, the cost of implementation of the required technology is high, constituting a barrier to successful development of the supply chains (Duan, Xu, Liu, Zografos, & Bemeleit, 2007). Adequate information is required in terms of weather conditions, nature of the soil, pest control, and appropriate seeds for different types of crop. The SCM of HPE also requires traceability, a reduced lead time, excellent packaging, compliance to food safety standards and cool chain systems (Bosona & Gebresenbet, 2013; Ahumada & Villalobos, 2009; Duan et al., 2007).

The supply chain of HPE is predominantly a global value chain (GVC) categorised as the global horticulture value chain (GHVC) (Figure 3.5). A GVC describes the network of activities carried out by diverse firms across different geographical locations from the start of the production to the consumption and beyond (Gereffi & Fernandez-Stark, 2011). GHVC has been positioned within an oligopsony market which consist of many suppliers with fewer buyers (Roger & Sexton, 1994).

Figure 3. 5: Global horticulture value chain



Source: Fernandez-Stark, K., Bamber, P., & Gereffi, G. (2011) In Gereffi, G., & Fernandez-Stark, K. (2011).

The small number of buyers have power influence and therefore dominate the chain because of their huge investment in the supply chain. This value chain is characterised by the production and supply of higher quality horticultural products meaning that exporters of these products are expected to meet high quality standards and specifications of importing countries as well as those of respective buyers. These conditions are not easily achieved.

Gereffi (1994) referred to the type of governance structure for co-ordinating the production of networks in this chain as buyer-driven. In a buyer-driven chain, the network of activities of a firm from the inception of a product to its final consumption is being coordinated by large retailers. Some qualities that attract buyers are central to how participating countries or exporting firms in developing countries have structured their production to conform to a buyer's specification. A buyer-driven chain has the following features:

- Few buyers control the production networks in developing countries
- Trade usually occurs through a contract agreement
- It exist in labour-intensive products at the production stage and entails high competition at market entry
- It exists in consumer goods export sectors
- It involves interdependence of economic agents
- There are high barriers to entry because control is exercised by large retailers at the point of consumption.

For exporting countries to achieve competitive advantage and economic returns in this type of chain, key preconditions to participation have to be met (Lee, 2010; Mayer & Gereffi, 2010). Some of the requirements are: the development of a resourceful labour force and upgrading of their capabilities to meet demand, compliance to private regulations and standards; the export of internationally accepted products and the certification of processes. Rabach & Kim (1994) raised the notion that profits are not derived from economies of scale and advancement in technologies where this governance structure exists. They stressed that profit maximisation is achieved rather by the suppliers who have organised their production systems with high-value qualities that attract buyers. Such potential is in the area of research and development (R&D), product development, marketing expertise and finance. However, other authors argue that economies of scale is a market entry strategy that enables smallholders to participate in GHVC (Paalhaar & Jansen, 2011; Markelova & Mwangi, 2010; Narrod, et al. 2009; Roy & Thorat, 2008).

The governance structure is stressed as a determinant of exporters' participation in GHVC (Dolan & Humphrey, 2000). These authors indicated that UK supermarkets monitor and control the entire value chain of fresh vegetables from African countries using Kenya and Zimbabwe as case studies. They emphasised that exporting countries must therefore meet the large retailers' specifications in terms of supply chain activities, food safety and quality standards, value-addition, price, product variety and quality. Otherwise, suppliers are precluded from the chain and denied access to participation. Meanwhile, the governance structures within the GHVC are multiple and this presents challenges to the participation of developing countries (Dolan & Humphrey, 2004). GHVCs are therefore affected by both the private standards (supermarkets) as well as other standards in importing countries.

Consequently, local innovations have been emphasised as critical factors for export success because they are a means to increasing productivity and economic growth (Gereffi, 1995). Local innovations require policy reforms, organisational reforms, the employment of state-the-art technologies and the introduction of value-addition processes to improve product quality and acceptance. In other words, national development is essential for achieving international competitiveness. Upgrading has therefore been suggested as an approach that can enhance the global participation of developing economies. Upgrading is defined as a strategy for shifting from traditional products which are of low-value to value-added or semi-processed products which are classified as high-value products (Gereffi, 2005).

Upgrading is an encompassing strategy that developing countries must adopt to improve their capabilities. On the other hand, the success of this concept requires the mixing of diverse government policies, institutions, corporate strategies and workforce capabilities (Gereffi & Fernandez-Stark, 2011). Due to the fact that value-added attributes present better economic returns to exporting nations as people sort convenience and quality in the global market, some sub-Saharan African countries such as Kenya and Ethiopia, have shifted to improving the value of their products in every aspect of the chain to attract premium prices, enhance their competitiveness and therefore achieve economic growth. Some of the value-addition activities are cleaning, grading, trimming and packing (Goyal & Sharma, 2009) but diverse issues are faced in this process.

One of the main constraints is the stringent regulations made by importing nations. Non-conformity to these standards has jeopardized the involvement of some developing countries leading to them being crowded out. Currently, the supply chain of HPE faces many challenges

in several developing countries and these have been acting as barriers to the growth of the global trade of horticultural products. Some of the problems are a lack of infrastructure required for transportation and information integration, a lack of supporting government policies and poor awareness of post-harvest waste reduction (Shukla & Jharkharia, 2013). These barriers therefore call for an efficient SCM. A barrier is conceptualised in this study as a constraint to HPE. Some of the barriers to exporting horticultural products from developing countries to developed economies are discussed in the next section.

3.5 Barriers to horticultural exports from developing countries

Many developing countries have comparative advantage to produce and export horticultural products which if successful, could transform their economies, yet they are faced with several challenges. Consequently, many global markets have been inaccessible for exporters of horticultural products in developing countries as a result of several factors despite their wealth of resources (Foster & Briceño-Garmendia, 2010). A study by Maertens & Swinnen (2009) indicated that notwithstanding the limitations, horticultural exports can be developed in African countries to meet the high standards required in international markets if standards are viewed as a catalyst to development instead of barriers to trade (Jaffee & Henson, 2005).

Several authors have identified the constraints to horticultural exports from developing countries. Inland transit delays, documentation issues, customs clearance and port handling are causes of poor export performance especially in Africa (Freund & Rocha, 2011). While other aforementioned causes can be improved more easily, inland transit is a huge constraint because it is very costly requiring a high level of investment. Nevertheless, its improvement has the greatest economic impact on export values. Freund & Rocha's results show that inland transit delays have an adverse effect on export values – the value of exports is typically reduced by 7% when inland transit time increases by one day.

This delay has slowed down growth and this lag has huge implications on export products especially those that are time-sensitive. Domestic delays in Africa significantly affect exports more than the effect of foreign tariffs (Hummels & Schaur, 2013; Djankov, et al., 2010; Portugal and Wilson, 2009). The unreliability of road transport has been acknowledged to cause long delays which prevent exporters from achieving timely deliveries. An improvement in trade facilitation is suggested as a way to develop exports from Africa (Freund & Rocha, 2011).

The higher entry cost and market entry requirements are difficulties encountered by developing countries in foreign markets. Examples of these market entry barriers are trade costs, bilateral

agreements, food safety and quality control issues, to mention a few and the higher these issues, the higher the barriers to trade (Dennis & Shepherd, 2011). Trade tariffs, distance, market entry costs and trade facilitation have implications for export diversification (Dennis & Shepherd, 2011; Feenstra & Kee, 2008). For horticultural products, seasonality and a short shelf life are also included.

Belwal & Chala (2008) conducted a case study of the Ethiopian floriculture industry using a qualitative strategy to find out barriers to successful HPE. Through semi-structured interviews with the stakeholders, their findings showed non-compliance to international standards, poor road infrastructure, scarce agricultural inputs, seasonality, high air freight costs and capacity and quality issues as the main barriers. Notwithstanding these barriers, findings by the same authors show that Ethiopia records substantial growth in its floriculture industry through the establishment of its Horticulture Producers and Exporters Association, foreign investments and government support (Gebreeyesus & Iizuka, 2012).

Among the constraints to horticultural exports, a lack of infrastructure, high trade costs, high food safety standards and a lack of collective action are identified as prominent internal and external barriers limiting horticultural exports from developing countries to developed countries. These barriers are discussed in detail below:

3.5.1 Lack of Infrastructure

Infrastructure is defined as the basic public systems and amenities necessary for the economic activity of a country (Oxford Living Dictionaries, 2016). Examples of such infrastructure are roads, railways, public transportation, telecommunications, water and power supplies. The availability of the necessary infrastructure enables a country to engage in many business operations and practices that could further enhance its development. In other words, infrastructure enables the society at large to function efficiently whereas its absence prevents a high level of productivity and improved standards of living. This is the reason the World Bank continuously lays emphasis on the need for infrastructure especially in developing countries because its existence can lead to transformation and growth. Consequently, the World Bank has engaged in many infrastructural development projects such as the transformation of the agricultural business in Senegal (World Bank, 2013b) and financing the development of water resources for irrigation practices in Mauritania, Mali, Senegal and Guinea (World Bank, 2013c).

Many studies have argued that the majority of the developing countries lack the necessary structures and facilities required for economic development and this has caused serious jeopardy to their advancement (Foster & Briceño-Garmendia, 2010; Vega, 2008; Staatz & Dembele 2008; Thoburn, 2000). For example, sub Saharan Africa has been identified as regions with a positive economic outlook yet lacking the required infrastructure. This has held back their advancement (Foster & Briceño-Garmendia, 2010).

Concerning high-value agricultural products such as horticultural products, a considerable increase in the exportation of these products can be attributed to recently improved transportation and logistics (Roy & Thorat, 2008). Their efficient movement however has been thwarted by the lack of a well-developed transport and distribution infrastructure, most especially in African regions (Goger, Hull, Barrientos, Gereffi & Godfrey, 2014; Vega, 2008; Devlin & Yee, 2005). Some of the infrastructure needed for the efficient logistics of perishable products' export are a good road network, storage and transport facilities.

Due to the time-sensitive nature of horticultural products, Bogataj, Bogataj & Vodopivec (2005) caution that time delays or a change in temperature could endanger the value added activities in their supply chains thereby causing losses. With the use of cold storage, food-borne illnesses can be minimised, spoilage can be reduced while optimal quality can be maintained (Rediers, et al., 2009). Therefore, cold chain facilities and equipment are required throughout the supply chain of high-value agricultural products.

The cold chain refers to an uninterrupted temperature-controlled supply chain which entails the management of the temperature of perishable products throughout their post-harvest, handling, storage and distribution stages. Various studies support the argument that effective temperature controlled equipment can sustain the freshness of perishables. Sales (2013), Kuo &Chen, (2010); Freidberg (2009); Panozzoa & Cortellab (2008); Smith (2005); Orton (2000) and Paull (1999) indicate that advanced cold storage systems are necessary throughout the supply chain of horticultural products, from the producers to the consumers to increase their shelf life and to maintain freshness, quality, taste, appearance and other attributes that can enhance customer satisfaction. Cold storage systems entail the inevitable use of specialised equipment such as temperature controlled vehicles, refrigerated warehouses and distribution centres, temperature controlled containers and refrigerated retail outlets (Smith, 2005).

Moreover, airports dealing with the transportation of time-sensitive products require well designed and equipped cargo terminals with facilities which ensure the temperature is

adequately maintained throughout its handling and transportation stages (Sales, 2013; Smith, 2005). For example, the dedicated perishables area of the cargo terminal of Emirates airline in Dubai has temperature controlled facilities for a seamless cool chain (Sales, 2013) unlike those in many developing countries. On the other hand, Sales (2013) cautions that since consignments are classified to be at risk during the loading and unloading stages, employees should be trained to handle these stages appropriately using essential equipment such as cool dollies (mobile storage units used to transport time-sensitive products from warehouse to the aircraft for rapid loading and unloading). Hence, the efficient use of a cool chain requires handlers and participants in the supply chain to be adequately trained to carry out their roles for the success of all involved in the industry. Since air freight is an important element of the supply chain of HPE, its role in GHVCs will be discussed in section 3.6.

The efficient inventory management of fresh flowers, fruit and vegetables requires real time properly controlled inventory and this can be achieved using the radio frequency identification (RFID) technology which requires no human participation, movement of products nor scanning of the items (Chande, Dhekane, Hemachandra & Rangaraj, 2005). For example, modern technology uses radio frequency identification (RFID) chips not only to track the location of goods but also to record the temperature of the products from the producer end to the consumer (Manzini & Accorsi, 2013). Although the use of RFID helps a great deal, it is costly to incorporate in the supply chain (Smith, 2005). Nevertheless, this technology ensures better traceability along the supply chain (Trienekens et al., 2012; Ruiz García, 2008; Smith, 2005).

The availability of appropriate infrastructure is a necessity for countries exporting horticultural products as this can bring about an improvement in operations, contribute to the value-added logistics of perishable goods and minimise the risk of great losses.

3.5.2 High Trade costs

Developing countries are usually faced with high trade costs which include international transport costs, export costs and tariffs (Feenstra & Kee, 2008; Debaere & Mostashari, 2010). According to Emlinger et al. (2008), transport costs, logistics, tariffs and other non-tariff barriers determine the trade flows of fruit and vegetables to the EU market. Overall, these costs have the tendency to hinder domestic firms from accessing international markets through exports simply because they cannot afford to pay the charges (Helpman, Melitz & Rubinstein, 2008). Since firms engage in business to make profits, they can only be attracted to export when there is a certainty of reduced cost of entry and profit (Das, Roberts & Tybout, 2007).

Empirical findings by Dennis & Shepherd (2011) reveals that export diversification can increase when trade costs are reduced.

Some studies refer to the Entry Price System (EPS) and its impact on trade costs and trade flows (Santeramo & Cioffi, 2012; LAForCE, 2011; Emlinger, Chevassus-Lozza, & Jacquet, 2010; Goetz & Grethe, 2009; Agrosynergie, 2008; Emlinger, Jacquet, & Lozza, 2008; Diop & Jaffee, 2005). EPS is a tariff system used to control the unstable domestic price in the EU and it acts as a form of protection for its domestic markets from external competition most especially from neighbouring developing Mediterranean countries. However, it is a complex system because of its diverse assessment criteria. In addition, EPS compliance is difficult to monitor because the import price is only determined when the products are sold in the EU market (Goetz & Grethe, 2009).

Diop & Jaffee (2005) have criticised EPS as a scheme used to restrict developing countries from benefitting from their comparative cost advantage. EPS is applied in the fruit and vegetables sector to prevent a lower import price than the domestic price. Therefore, this system considers seasonality and also has a threshold price (trigger price) for each product which is used to determine the type of duty levied whether only ad-valorem duty or specific duty or both applied on the imported fresh fruits and vegetables (Emlinger et al., 2010).

The protection offered by EPS is only applicable to specific products and is of high relevance for tomatoes, artichokes, lemons, courgettes, cucumbers and plums; it is significantly lower on pears, apples and clementines; and of lowest relevance for peaches and nectarines, apricots, oranges, table grapes and mandarins in specific season and also for specific countries (Goetz & Grethe, 2009). Thus, its impact varies across countries depending on their proximity to the EU; the higher the proximity, the higher the impact (Goetz & Grethe, 2009). Conversely, trade flow growth is not affected because the variance between the products covered and uncovered is insignificant (Agrosynergie, 2008). The EPS however, is not applicable to some countries such as sub-Saharan Africa (except South Africa) and also has minor relevance for some Latin American countries such as Chile, Uruguay, Brazil and Argentina (Goetz & Grethe, 2009).
Tariffs are customs duties imposed on imported products to safeguard sales of domestic goods and to generate government revenue (WTO, 2015). Whereas non-tariff barriers (NTB) are "policy-related trade costs" measures used to restrict trade such as quality standards, quotas, and sanctions. NTB's are legal and regulatory information that are difficult to understand and measure unlike tariffs that are expressed numerically because they are case-sensitive, not

transparent, often hidden and also decentralised in different regulatory agencies (UNCTAD, 2012). Both tariffs and non-tariff barriers have an impact on the trade of horticultural products and their effects vary from one country to another (Emlinger et al. 2008).

The variation in the impact of tariffs among countries can be explained by "product specification, variety of trade agreements and protection measures and the seasonal pattern of trade" (Emlinger et al. 2008, p428). Members of the World Trade Organisation (WTO) offer trade preferences (reduction of tariff) to others within the group especially the developing countries in order to enhance their trade opportunities. Some countries benefit more from trade preferences than others in the export market because of trade liberalisation agreements that exist between trading partners (Emlinger et al. 2010).

Examples of such agreements are the Euro-Mediterranean Partnership (EMP) agreement between the EU and Mediterranean countries and the Generalised System of Preference (GSP) between the EU and developing countries as a whole. While Mediterranean countries benefit from EMP and GSP, sub-Saharan African economies benefit only from GSP (LAForCE, 2011). In the EU, a reduction or an exemption from ad-valorem and/or specific duties are allowed preferences. Interestingly, one of the ways used by some exporting countries to avoid high trade costs is by exporting a high volume of those products where they benefit from trade preferences because low tariffs are paid (Emlinger et al. 2008).

Consequently, a border effect is determined by the competitive capabilities of a country. This implies that the lesser the trade costs, the greater the market entry advantage one country has over the other. Another market entry strategy employed by some exporting countries is specialisation in off-season products because it determines their level of access to markets. For example Southern Hemisphere countries such as New Zealand and Chile export off-season products to the European market and this enables them to have greater access because this trade pattern opens them to less competition (Emlinger et al., 2008). Therefore, it is suggested that exporting countries could observe the period of the year when their exports are less sensitive to tariffs and limit their trade negotiations to that specific seasons to reduce tariffs.

Other trade costs hinder developing countries' exports to the EU markets even more than the usual transport costs and tariffs. These forms of trade costs are trade resistances which include the cost of information, adaptation to standards and other non-tariff barriers (Emlinger et al., 2008). In other words, horticultural products exported from developing countries face more

challenges at the export market borders than the apparent transport costs and tariffs. Notwithstanding the low tariff paid by exporting countries to the EU, non-tariff barriers can hinder them from benefitting from low tariff gains (Emlinger et al., 2008).

On the other hand, trade preferences often neither encourage agricultural exports nor economic development (Emlinger et al., 2010), especially for developing countries under only the Generalised System of Preference (GSP). The group of developing countries under the EMP and GSP, benefits from more preferential trade arrangements with the EU and has better market access compared to those developing countries under only the GSP (LAForCE, 2011). It can be argued that the "EMP are contractual agreements among the parties involved whereas the GSP is unilaterally granted by the EU" (LAForCE, 2011, p.92) and thus subject only to EU decisions.

Therefore, it is important for governments in developing countries to grow their agricultural sectors by supporting their producers and exporters financially and technically in order to expand their horticultural products' exports. Other than the external constraints in international markets such as high trade costs, internal factors in the exporting countries could also deter export expansion (Emlinger et al., 2010).

3.5.3 High food safety and quality regulations

High food safety standards imposed in international markets is one of the greatest barriers to horticultural exports from developing countries (Mithofer et al. 2011; Paalhaar & Jansen, 2011; Henson & Humphrey, 2010; Narrod, et al. 2009; Maertens & Swinnen, 2009; Trienekens & Zuurbier 2008; Roy & Thorat, 2008; Henson & Loader 2001; Unnevehr, 2000) whereas in other exporting countries, such regulatory standards enhance competition and lead to faster market access (Jaffee & Henson, 2005). Although developing countries tend to be gaining gradual access to industrialised countries due to an increase in the demand for horticultural products, food quality regulations act as a deterrent to market entry.

Moreover, despite the great level of awareness in the industrialised countries to consume perishable agricultural goods for healthy living, consumers are extremely conscious of the safety and quality of these time-sensitive goods due to the adverse effect that can result from the lack of quality (Trienekens & Zuurbier, 2008). Consequently, food safety and quality standards have become an essential requirement for exporters all over the world to comply with in order to gain access to global markets. As a result of this, regulations and control are imposed

by national and international governments to ensure food products are safely produced, processed, stored, distributed and transported to their countries of destination (Trienekens & Zuurbier, 2008).

Examples of such standards set for regulating food safety in global trade are Hazard Analysis and Critical Control Points (HACCP) system (FAO, 2016d), Occupational Health and Safety Standards (OHSS) (Belwal & Chala, 2008), Global Good Agricultural Practices (GlobalGAP) (Mithofer et al. 2011; Paalhaar & Jansen, 2011; Narrod, et al. 2009; Roy & Thorat, 2008), Codex Alimentarius standards (FAO/WHO) and International Organisation for Standardisation (ISO). These regulations are quality assurance measures used to scrutinise horticultural exports. HACCP is used to assess compliance of horticultural products to thorough environmental production processes and Occupational Health and Safety Standards (OHSS) are used to assess employees' safety and working conditions (Belwal & Chala, 2008) to mention a few.

Food safety regulations are standards put in place by importing countries to safeguard the health of consumers. High-value agricultural products such as fruit and vegetables are vulnerable to a higher level of post-harvest losses due to their shorter shelf-life. To reduce the losses, post-harvest infrastructure is required to lengthen the lifespan of these products so that it can be fit for consumption especially when they are considered for consumption in the global market. An example of such infrastructure is the cold chain system. Since farming in developing countries is mostly practised by small scale farmers, they cannot afford the infrastructure and technologies required to maintain the quality of these high-value crops. In essence, compliance to food safety regulations is a constraint for many of the developing countries.

Many studies have argued that compliance to food safety regulations has hindered developing countries from participating actively in the export of horticultural products. One such argument is that the enforcement of these regulations is a form of protectionist strategy used by developed countries to restrict import competition thereby depriving developing countries of market entry (Henson & Wilson, 2005). Another argument is that smallholders are excluded from the global food supply chain due to the high requirement and high cost of compliance to food regulation standards (Asfaw, Mithöfer & Waibel, 2010; Maertens & Swinnen, 2009; Henson and Reardon, 2005). The main issue raised by the proponents of small scale farmers in international trade is that the poor are marginalised from the food value chain and therefore the purpose of their inclusion which is to alleviate poverty through export, is jeopardised.

But empirical evidence shows significant returns for export firms that are GlobalGAP certified in sub-Saharan Africa (see Henson, Masakure & Cranfield, 2011) and this is an indication that export firms can realise returns on their certification investment. According to the International Trade Centre, ITC (2011), GlobalGAP is a global certificate issued to ensure that good agricultural practices are applied throughout the food production process. This calls the attention of exporters of high-value agricultural products to consider maximising their opportunities by achieving the required certification through strategies that can enhance their participation.

On the other hand, counter arguments lay emphasis on the fact that while food safety and quality regulations act as a non-tariff barrier to international trade in developing countries, a proactive rather than reactive response to this barrier can help them to 'rebalance' and 'reposition' their policies and competitive strategies towards the enhancement of their export performance (Henson & Jaffee, 2008, p548). However, firm size and structure, organisational goals, managerial capabilities, resources and technical capacity will influence a firm's competitiveness in the international market (Henson & Jaffee, 2008). In essence this may be the reason why larger firms are able to compete better than smaller firms since their organisational goals are targeted at maximising exporting opportunities using their efficient resources as this may help them to have a greater scope to negotiate with buyers.

In recent times, regulatory parties usually collaborate with one another to ensure food products of a high quality standard are safely produced, processed, stored, and distributed for consumption. An example of such collaboration is the Sanitary and Phytosanitary Measures (SPS) Agreement between WTO and FAO/WHO Codex Alimentarius international food standards. In addition to the government regulations, the retailers who are the intermediary between producers and consumers have also introduced quality standards to ensure the safety of perishable food products (Colen et al., 2012; Herzfeld, Drescher & Grebitus, 2011). For instance, in the European market, large retailers are the actors with the most significant influence in the food supply chain (Baglioni, 2014). They specify conditions which exporters of horticultural products must meet to survive in these markets. Examples of standards initiated are those of the British Retail Consortium (BRC), the Safe Quality Food (SQF) and the European Retail Good Agricultural Practices (EUREP-GAP) (Trienekens & Zuurbier, 2008).

Since these stringent regulations have implications on trade in developing countries, acting as non-tariff barriers preventing market entry, the suppliers of horticultural products must comply

with regulatory standards set by both government and private buyers to be able to participate in international trade. Jaffee & Henson (2005) suggest that developing countries should view these regulatory standards as a catalyst to their development. This calls for the need to invest in safety control measures to ensure quality throughout the supply chain of the time-sensitive agricultural produce to compete in the international community (Trienekens & Zuurbier, 2008).

Issues that lead to non-compliance with food safety standards have been identified. These are an unawareness of required standards, non-operational policies, a lack of funding for research institutes, a lack of information and coordination among food safety regulatory bodies (Marucheck et al. 2011; Chemnitz & des Landbaus, 2011; Fuchs, Kalfagianni & Havinga, 2011). The lack of a national framework to regulate compliance with food safety standards was indicated as one of the barriers limiting many developing countries in participating actively in global trade (Henson and Loader 2001). Therefore, government support for high-standard export sectors as a strategy can enhance development in sub-Saharan Africa (Maertens & Swinnen, 2009). In essence, government support is a critical tool in ensuring food safety standards are met and this can only be achieved with the right policy and enabling environment.

3.5.4 Lack of collective action

Many international development agencies have emphasised that the participation of smallholders in high value agriculture markets is vital for economic growth in developing countries. However, various studies have stressed the importance of collective action among small scale farmers since it enhances their market access into the developed countries (Mithofer et al., 2011; Paalhaar & Jansen, 2011; Markelova & Mwangi, 2010; Narrod, Roy, Okello, Avendaño, Rich & Thorat, 2009; Roy & Thorat, 2008). Economies of scale enhance market entry and collective action enables small scale farmers to benefit from economies of scale as well as acquiring relevant skills to satisfy the food safety standards.

Many of the farmers in developing countries exist as smallholders who lack the capacity to satisfy the requirements of the international market. Thus, their active participation in exporting is limited due to the low scale of production, a lack of reputation, low investment ability and poor quality (Shiferaw et al., 2011; Narrod, et al., 2009; Roy & Thorat, 2008). Since export markets require high volumes of goods, an exporting country is expected to achieve economies of scale to compete in the global market. According to a study by Shiferaw et al. (2011), in many African countries such as Ethiopia, Uganda, Malawi, Nigeria, Kenya and Malawi, the existence of co-operatives allows faster access to the market.

This indicates that there is a limit to what individual farmers can achieve compared to the sum of individual responses. Thus, farmers collectively form registered groups to take advantage of economies of scale, international market trade information and standards, better technologies and facilities and also to have access to loan services (Shiferaw et al., 2011; Paalhaar & Jansen, 2011; Markelova & Mwangi, 2010). However, there are instances where there is lack of trust among members leading to individual self-interest and conflict (Shiferaw et al. 2011). This implies that a high level of co-operation is required among farmers to produce commercial quantities of horticultural products to meet international demand and expected standards.

To provide a solution to market entry issues, several studies have emphasised the importance of a public-private partnership (PPP) in developing countries as it helps farmers to gain competitive advantage in international markets (Unnevehr & Ronchi, 2014; Murray-Prior, 2014; Naziri, Aubert, Codron, Loc & Moustier, 2014; McGregor, Shepherd & Bammann, 2012; Ouma & Whitfield, 2012; Tallontire, et al., 2011; Narrod, et al. 2009; Roy & Thorat, 2008; Garcia Martinez, Fearne, Caswell & Henson, 2007; Chandra, 2006; Reardon & Flores, 2006; Wijnands, 2005; Garcia Martinez & Poole, 2004; Boselie, Henson & Weatherspoon, 2003). A PPP enables farmers to have access to information about the current state of the market, market demand, customer taste and preference, customer behaviour, regulations in the country of destination and other marketing information that consistently guides them. Moreover, a PPP is vital for the development of essential infrastructure (irrigation, ports, construction of roads) required to enable the smooth transportation and distribution of time-sensitive products such as horticultural products (Narrod, et al. 2009).

For example, Mahagrapes, a public- private partnership in Maharashtra State in India is a marketing partner to a group of farmers who are very experienced with a substantial level of education providing the group with the marketing information required to have access to the developed market, which is one of the qualities many of the co-operatives and producer organisations in developing countries lack (Roy & Thorat, 2008). This marketing expert provides them with the acceptable inputs (seeds, fertilisers, pesticides) and also secures the Euro-Retailer Produce Working Group Good Agricultural Practices (EurepGAP) certificates for them collectively which enables them to access the European market (Roy & Thorat, 2008). The outcome of this partnership is that the farmers are able to comply with the regulations in the European market under the guidance of Mahagrapes. They have benefitted from economies of scale and the marketing information enables them to record profits unlike the independent

farmer who does business directly with the market and faces constant rejection, a low reputation and record losses (Roy & Thorat, 2008).

Baglioni (2014) has argued that exporters of horticultural products can straddle a contract and estate farming strategy to break through and enhance their accessibility into European markets. In other words, exporters can indirectly engage in production through contract farming by signing production agreements with local growers while through estate farming, they can directly engage in the production process by employing wage labour (Oya, 2012; Little & Watts, 1994). These strategies have benefits, for instance, contract farming allows the spread of risk between the two parties. Applying these approaches enables exporters to minimise costs and maximise market entry opportunities since there is control over factors of production such as land and labour. Also through these strategies, market accessibility could be enhanced which in turn leads to potential profits being earned (Baglioni, 2014).

The overall implication of non-compliance to regulations in the global market is that trade relations are affected and this consequently jeopardises future market opportunities (Belwal & Chala, 2008). A failure to adhere to quality, environmental and social regulations hinders many of the developing countries from gaining access to international markets because product quality, the health and safety of consumers and social impact of production are key concerns to export markets, particularly European markets. Unethical practices such as poor working conditions, the use of harmful chemicals and child labour are examples of the social impact of production in exporting countries that are considered by importers of horticultural products. Therefore, developing countries must ensure appropriate production processes, environmental and social regulations are complied with in order to enhance their market accessibility and competitive advantage which in turn leads to increased productivity and other economic benefits.

3.6 The role of air freight in Global Horticulture Value Chains

The growth in air freight has been caused by the need for speedy distribution of goods with short shelf life, Just in Time (JIT) manufacturing strategy, exportation of high valuable goods with light weight, use of one aircraft for both cargo and passenger and an improved air cargo system and facilities (Yuan, Low & Tang, 2010).

Air transport is an important element of the supply chain for horticultural products since it enables these time-sensitive products to be transported between distant geographical locations within a short period of time, thus ensuring their freshness, taste and quality are preserved to

keep them safe and fit for consumption (Terry, 2014; Sales, 2013; Morrell, 2011; Kasarda & Green, 2005). Jarach (2001) therefore emphasised the need for airport infrastructure to be integrated into the supply chain of products transported by air instead of addressing its operation in isolation to achieve supply chain efficiency.

On the one hand, air freight offers numerous advantages and enables integration of nations into GVCs (Shepherd & Shingal, 2016). It allows the availability of horticultural products all year round in developed countries, such as the United Kingdom, due to the availability of essential facilities and necessary handling methods such as the cool chain system (Sales, 2013). This enables supermarkets to shelve vegetables every day without the hitch of seasonality (Dolan & Humphrey, 2000; Sales, 2013). Moreover, air freight increases the speed of delivery, enables vertical specialisation of activities in developing countries, reduces inventory costs since it enables JIT distribution and reduces time in transit thus reducing the risk of spoilage of horticultural products (Hummels & Schaur, 2013).

On the other hand, air freight costs are more than six times higher than that of sea freight (Hummels & Schaur, 2013) due to the high cost and usage of fuel, and other fixed costs (Groom & MacGregor, 2007). Despite the cost advantages of sea transport, air transport provides reliability and speed. But in this era, associated costs and other delays caused by ground handling, documentation, inspection by customs and collection have also increased the delivery length of the chain (Morrell, 2011). Notwithstanding, a substantial portion of world trade travels by air despite the expense (Hummels & Schaur, 2013) and goods transported by air are higher in quality and value (Sales, 2013; Morrell, 2011).

With regard to environmental sustainability, issues of emissions have been raised to criticise global trade. The production, transportation and distribution of horticultural products have been seen as generating CO2 gases emissions but Leipoid & Morgante (2013) and Sales (2013) argue that air transport still produces lesser hazards to the environment if compared with the amount of emissions that would be generated if the products are locally produced in locations with less production potential such as Europe.

Air freight plays a vital role in global economic development (Kasarda and Green 2005). It provides employment opportunities, connects businesses, adds value to trade, enables quick and better access to international markets, enhances distribution of foreign resources and attracts capital investment (Yuan et al., 2010). However, the lack of adequate aviation logistics infrastructure, investment funds and national policy to support air cargo operations can

jeopardize these economic benefits (Doganis 2005). The extent of the impact of liberalisation of air service agreements such as open skies and bilateral agreements are other factors that determine the prospects of the aviation industry (Ismaila, Warnock-Smith & Hubbard, 2014; Groom & MacGregor, 2007). Kasarda and Green (2005) emphasised that the advancement of air cargo services is a viable economic development strategy required to boost GDP growth. For this reason, developing countries participating in GHVCs, especially those in African regions, need to overcome barriers limiting them from improving their aviation industry and air cargo services.

Horticultural products benefit from the advantages offered by air freight and this mode of transport has a great influence on how GHVCs are structured. According to Shepherd & Shingal (2016), a strong relationship exists between air cargo and GVC trade. This implies that countries that are better integrated into global value chains are those that have well-built air cargo connections, secure borders and deliver quality customs services. These factors are essential to enable horticultural products exported to comply with pre-conditions of participation in GHVCs for these products to "command a price premium in the market place in order to cover the considerably higher transport costs" (Groom & MacGregor, 2007, p.25).

3.7 Conclusion

Participation in the global horticulture value chain is fundamental to success in horticulture products' export yet, many developing countries are not able to meet the requirements. The supply chain of HPE is a value added chain and air freight plays a significant role, thus providing a seamless cool chain - a value adding resource that preserves the freshness, taste, colour and quality of these time-sensitive products to meet customer satisfaction. As shown in the literature, a lack of: infrastructure, facilities, technologies and regulations, poor agricultural practices, non-compliance to food safety standards, poor market entry strategy and lack of efficient trade logistics are the barriers preventing developing countries from exporting horticultural products to the developed countries. However, they have the potential to develop horticultural exports where they have comparative advantage to meet the high standards required in international markets in order to enhance their economy (Jaffee and Henson, 2005; Belwal & Chala, 2008; Maertens & Swinnen, 2009; Henson et al., 2011).

Though existing literature has identified some of the barriers to HPE in developing countries, little research has been conducted to explore the barriers pertinent to HPE from Nigeria. Also, much of the existing literature on HPE has focused on poverty alleviation, governance structure and network relationships whereas little research has been conducted on improving the supply chain of HPE in developing countries. **Therefore, this research will address these issues by examining the barriers to increasing HPE by air from Nigeria specifically to the United Kingdom, providing recommendations to improve its supply chain in order to enhance economic growth.**

Chapter Four: Research Methodology

4.1 Introduction

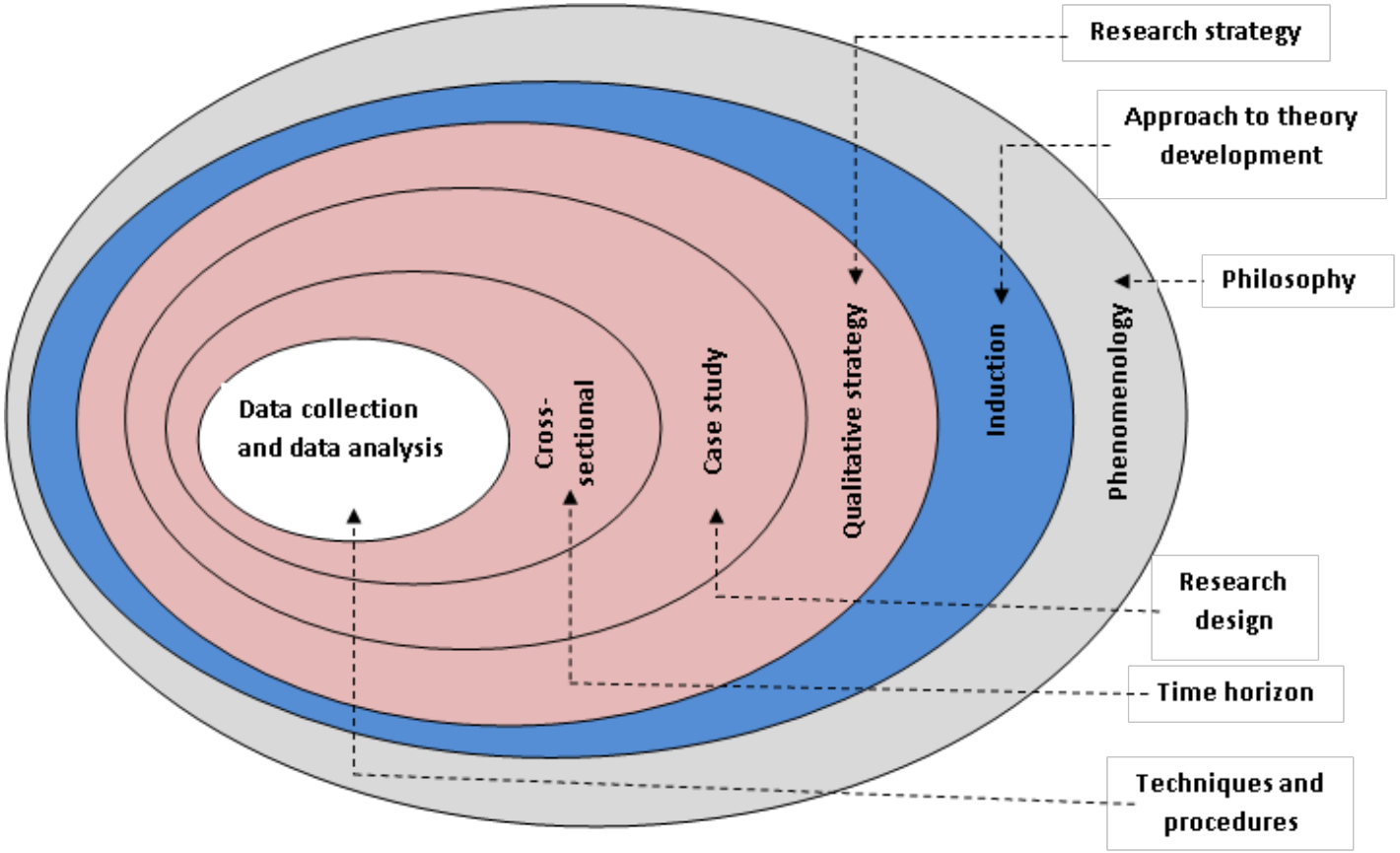
Research methodology is the systematic procedure that a research project undergoes from inception to the conclusion in order to increase knowledge (Saunders et al, 2016). It relates to knowledge gathering logic applied in a scientific enquiry. This chapter presents the research approach adopted in this project and the justification for its methodological choices using the research onion suggested as a framework by Saunders et al. (2016) (Figure 4.1). This chapter discusses the philosophical paradigm adopted in the light of the ontological and epistemological stances followed by approaches to theoretical development. Second, it describes the procedure followed to provide an outcome to the subject of the enquiry and the rationale for the methodological choices that have been adopted. This includes the research strategy, research design, time horizon, data collection and data analysis techniques.

A case study research design was adopted since it has a unique ability to understand contemporary issues such as the phenomenon of HPE from Nigeria. Multiple perspectives of the stakeholders involved were explored to investigate, understand and identify existing barriers that inhibit HPE. This chapter also discusses the use of semi-structured interviews, direct observation and archival records in collating the information required for this study to achieve its aim and objectives. The qualitative techniques used for data analysis are explained followed by research ethics undertaken and finally, the criteria utilised to enhance the quality of the research. In this way, the techniques adopted to achieve objective three and four are explained.

4.2 Philosophical stance

Research Philosophy is concerned with the nature of reality and how knowledge is created and developed during the research process to understand the social reality (Easterby-Smith, 2015). It has implications for the methodological choices adopted and therefore it is important to understand the assumptions upon which research is built. Philosophies are broadly explained using two major terms, ontology and epistemology. These ideologies determine the approaches that are suitable for a particular research investigation. They explain the underlying assumptions to research approaches and guide the researcher to select the appropriate method to investigate a phenomenon.

Figure 4. 1: Thesis Research Methodology



Adopted from Saunders et al. (2016)'s Research 'onion'

4.2.1 Ontology

Ontology considers the assumptions underpinning reality within a specific subject area under investigation. Objectivism and subjectivism are the two ontological positions that are concerned with understanding the nature of social phenomena. While an objective ontological position is accepted as appropriate to comprehend the nature of social entities through rules and regulations that are external facts to the actor, a subjective ontological position is considered more appropriate to understand social phenomenon through the perspectives, behaviour and experiences of social actors (Bryman, 2016). This research follows the latter to explore the experiences of the stakeholders to understand current issues in the supply chain of HPE.

4.2.2 Epistemology

Epistemology is the approach taken to gain knowledge about the accepted reality in a study area. Positivism, interpretivism, critical realism, postmodernism and pragmatism are five major paradigms adopted by researchers to demonstrate a methodological research approach that is consistent with their epistemology (Saunders et al., 2016). Positivism, interpretivism and critical realism are discussed below with emphasis on the theoretical underpinning of the paradigm adopted in this research study.

- **Positivism**

This epistemological stance believes social research should follow the approach of natural sciences to understand what constitutes reality. The use of hypotheses developed from existing theory is supported; data that has been collected are used to test hypotheses (Easterby-Smith, 2015). The results obtained are objective and real and are believed to be independent of social entities. However, the positivism paradigm has been criticised for its rigidity on actual facts, neglecting the human interference which is considered significant in understanding social reality.

- **Interpretivism**

Interpretivism epistemology is an anti-positivism standpoint asserting that social science is different from natural science; social reality therefore should be studied differently from natural reality (Gray, 2014). Interpretivism presumes understanding human behaviour and environmental factors are important while studying the social world. This paradigm allows the researcher to make sense of situations through interaction with social entities, indicating that

experience might be different from expectation. This inductive process helps in theory building (Bryman, 2012). Findings however, cannot be generalised since the interpretation of social actors' views and their world of existence have diverse meanings influenced by different contexts (Saunders et al., 2012) unlike the objective view of positivism which deduces general facts from tested theory through the generation of hypotheses. Therefore, interpretivists have been criticised for having passive thoughts since the process of scientific enquiry is not adhered to. Phenomenology, symbolic interactionism and hermeneutics are different aspects of an interpretivism philosophical stance (Gray, 2014, Saunders, 2016).

- **Critical realism**

Social science research is defined by critical realists as a "a critical process of enquiry that goes beyond surface illusions to uncover the real structures in the material world in order to help people change conditions and build a better world for themselves" (Neuman, 2000, p.76). Therefore, critical realism epistemology views reality as a combination of facts and experiences, thus applying both positivism and interpretivism epistemology in a specific area of research. While it criticises positivism as a paradigm that is narrow and unconcerned about human perspectives, it also criticises interpretivism as being too subjective and neglecting actual facts. It claims that the world can be better understood objectively from the underlying principles employed in natural sciences and also from the interpretation that is socially constructed. Critical realism therefore considers the fact that external reality may or may not exist independent of social entities because it is possible for a phenomenon to exist even when it cannot be observed (Gray, 2014).

- **Thesis Philosophy – Phenomenology**

With due consideration of different ideology, phenomenology, an aspect of interpretivism, is the research paradigm adopted for this study since participants' views and experiences are crucial for understanding the phenomenon of HPE from Nigeria. Phenomenology is an epistemological consideration that is concerned with making sense of the world and interpreting people's actions by interacting with them while the researcher 'brackets out' his or her own preconceptions (Gray, 2014, p.165; Bryman, 2012, p.30). From a phenomenologist's point of view, social reality has meaning when there is interaction with the people who are actually living and experiencing it. This research paradigm is not without criticism. Proponents of positivism believe social research should be conducted in an objective way as carried out in natural sciences to produce generalised facts. Nevertheless,

phenomenology claims that generalisability is not critical in understanding social reality since the focus is finding richer meaning about a phenomenon (Gray, 2014).

While recognising that adopting phenomenology for this research does not give it credibility over other paradigms, it is nevertheless chosen because it is 'most suited' to address the research questions in order to provide solutions which will be beneficial to practitioners (Saunders et al., 2012, p.129). A small sample size, an in-depth investigation, and a qualitative method which are major attributes of the phenomenology paradigm are approaches used. Table 4.1 shows the differences between positivism and phenomenology standpoints.

Table 4. 1: Contrasting features of positivism and phenomenology philosophies

Point of reference	Positivism	Phenomenology
The observer	must be independent	is part of the observed
Human interests	should be irrelevant	are the main drivers of science
Explanations	must demonstrate causality	aim to increase general understanding of the situation
Research progresses through	hypotheses and deductions	gathering rich data from which ideas are induced
Concepts	need to be defined so that they can be measured	should incorporate stakeholders perspectives
Units of analysis	should be reduced to simplest terms	may include the complexity of the 'whole' situation
Generalisation through	statistical probability	theoretical abstraction
Sampling requires	large numbers selected randomly	small number of cases chosen for specific reasons

Source: Easterby-Smith, et al. (2015, p. 53)

Five stakeholder groups were identified as relevant participants in this study since their perspectives are crucial in understanding the issues relating to HPE as the phenomenon that is being studied. The participants were carefully chosen. To ensure the participants who were interviewed were appropriate for the study, they were referred by the staff of Nigeria Plant Quarantine Service (NPQS) and other stakeholder groups. Most of the interviews took place during their working time. Data were collected from stakeholders who are currently active in the supply chain of HPE since they are the ones experiencing the phenomenon. Other sources of evidence in addition to interviews were observations and documents.

Being aware that bracketing out the researcher's preconceptions is crucial but might be a difficult thing to implement, a curious attitude was displayed to suspend previous opinion

during the first hand interviews so as to gain more insights (LeVasseur, 2003). Participants discussed the issues more freely because the need to disclose their experiences was emphasised stating that the research might enable policy makers to make the right decisions required for addressing the current difficulties. The experiences of these stakeholders were captured through semi-structured interviews during which they were able to describe the current issues in the supply chain of HPE, air cargo operations and the export process as a whole. The challenges to HPE are better understood through the common experiences of these participants.

A direct observation is another means of gathering data to make sense of the phenomenon. Therefore an aspect of the supply chain was observed, coupled with the export procedures, the working conditions and the state of the export cargo terminal. This approach enabled the research to provide meaningful conclusions from multiple sources of evidence and also to serve as a guide in providing recommendations that will improve HPE. It also contributes to the dearth of literature in this field.

4.3 Approach to theory development: Inductive versus deductive

Inductive and deductive are approaches to developing theory in a research project depending on philosophical standpoints. Bryman (2012) differentiated between the deductive and inductive theory as follows:

Deductive theory is developed when a hypothesis (formulated from existing theory) is tested by subjecting it to an empirical investigation. The deduced hypothesis usually determines the data collection process and the findings are used to confirm or reject the hypothesis and are subsequently used to revise the existing theory.

Inductive theory, on the other hand, is built from data collected to explore the subject of inquiry. Implications of the findings from the empirical work are accordingly inferred for the theory prompting the research project.

The approach used in this study is inductive since the focus is not on theory testing; rather, it infers implications for theory on the basis of the evidence. Induction allows the discovery of issues relevant to the subject whereas a deductive approach would have hindered this discovery because of its rigid hypothetical process.

4.4 Research Strategy: Qualitative versus quantitative

Qualitative and quantitative research are distinct. Bryman, (2012) stated that these two strategies differ in several areas such as their epistemological standpoints, data collection instruments used, forms of data generated and their data analysis approach. Therefore, the choice of one strategy over the other should be guided by its appropriateness to answer the research question(s). Qualitative research is concerned about meaning that is socially constructed by engaging with real life scenarios (Gray, 2014). Thus, non-numerical data are collected in the form of words through interviews, observations, focus groups and pictures in real life situations to interpret social reality. Conversely, a quantitative strategy is more concerned about causal relationships between dependent and independent variables. It uses numbers and statistical data for quantification and therefore puts emphasis on measurement during the data collection and data analysis process (Bryman, 2012).

According to Byrne (2011), quantitative research is believed to produce more valid and reliable evidence compared to the qualitative approach. This is because the data set used is usually subjected to scrutiny by deductively testing the hypothesis generated from previous theories and also because the cause and effect relationships between variables are highly controlled. However, Gray (2014) stated that qualitative methods produce meaningful data through data coding and its inductive approach; it generates data that produces richer explanation of the phenomenon under investigation. Open-ended questions are usually used in qualitative research to explore the subject of the research whereas questions used in quantitative strategy are pre-coded and also require pre-coded responses (Easterby-Smith et al., 2015). The distinction between these approaches is outlined in Table 4.2.

Table 4. 2: Differences between quantitative and qualitative research strategy

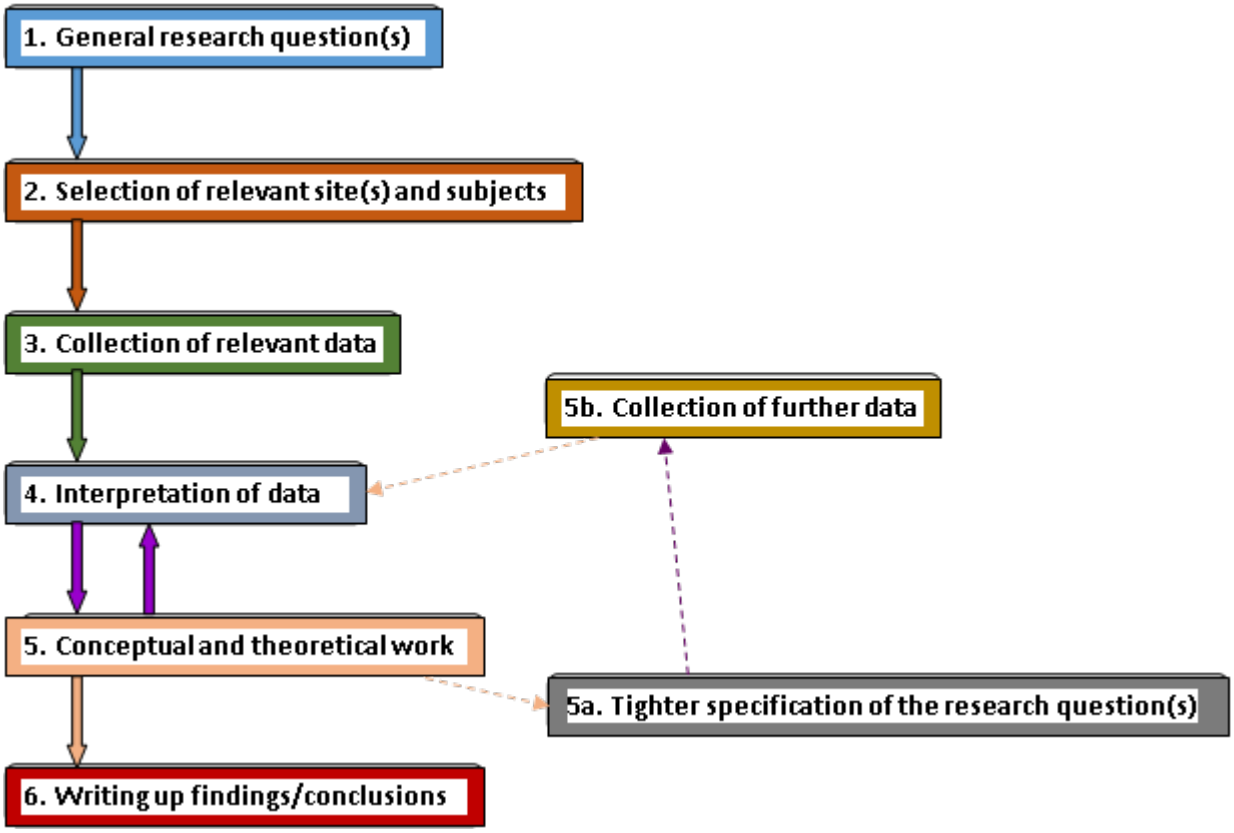
Quantitative	Qualitative
Numbers	Words
Point of view of researcher	Point of view of participants
Researcher distant	Researcher close
Theory testing	Theory emergent
Static	Process
Structured	Unstructured
Generalisation	Contextual understanding
Hard, reliable data	Rich, deep data
Macro	Micro
Behaviour	Meaning
Artificial settings	Natural settings

Source: Bryman (2016)

Existing studies in the context of the supply chain of horticultural product export have employed either qualitative (Jraisat, 2010; Belwal & Chala, 2008; Afari-Owusu, 2014; Baglioni, 2015) or quantitative (Yu & Nagurney, 2013; Naziri et al., 2014) methods depending on the focus of research. A qualitative research strategy is used to accomplish the aim and objectives of this particular study following the main steps outlined by Bryman (2016) for conducting qualitative research (Figure 4.2).

Having identified the research problem, this study sets out its aim and objectives and then develops two research questions. Relevant literature was reviewed, followed by the selection of an appropriate methodology that enables the research questions to be adequately answered. Suitable participants and a study location were selected to probe the issue to be investigated and qualitative data were collected from the participating stakeholders in the supply chain of HPE. The data collection took place in their work environment which is classified by Yin (2009) as their natural real life setting. This approach enables the participants to discuss their experiences freely and consequently, it offers a deeper understanding of contemporary issues relating to HPE from Nigeria.

Figure 4. 2: Main steps of qualitative research



Source: Bryman (2016)

Gray (2014) emphasised that since a qualitative approach lacks specific rules on how the data are to be analysed unlike quantitative methods which have logical statistical tools for data analysis, its process of analysis should be rigorous to demonstrate meaningful descriptions of the data. Therefore, data were analysed both manually and with the aid of NVivo 10 computer software to increase validity. This implies that a rigorous qualitative data analysis approach was used to analyse the data collected and it helps in providing a better interpretation of the data. Therefore, a qualitative methodology allows this research to gain a holistic view of the barriers in the supply chain of high-value agricultural products exported by air from Nigeria to the United Kingdom. The reason for selecting United Kingdom is explained below.

4.5 Research design

Experimental, cross-sectional (survey), longitudinal, case study and comparative designs are the different types of research designs in management and business research and these designs are suited to achieve different purposes (Bryman, 2016). Table 4.3 provides an explanation of each of these research designs and the related typical form used in research strategy. Yin (2014) outlines three criteria for the choice of each design namely: types of research questions, degree of control over events and the extent of attention on contemporary issues. He explains that "how" and "why" questions are posed in case study research to explain happenings over time; a case study however could also be used when "what" questions are posed for exploratory purpose. A case study design is favoured when contemporary issues are being examined but the researcher using this design has little or no control over the events.

A case study is defined by Yin (2003, p.13) as:

An empirical inquiry that investigates a contemporary phenomenon within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident.

Over time, the case study has gained popularity in management research. It concentrates deeply on a specific or small group of individuals, organisations, community, or events with the view to understand their unique features (Easterby-Smith et al., 2012). It is criticised for generating ambiguous data which leads to diverse interpretations and also for a lack of rigour compared to the natural scientific approach. Another predominant issue is that of generalising from a single context to a wider population. Yin (2014) cautions that a case study design should be thoroughly developed to incorporate the research questions, any stated proposition, unit(s) of analysis, and procedures for data collection, data analysis and interpretation to deal with the aforementioned issues.

A case study methodology is appropriate for exploratory, descriptive and explanatory purposes (Yin, 2014). This particular research process employs both exploratory and descriptive approaches. It focuses on investigating the potential for increasing HPE from Nigeria.

Table 4. 3: Research designs and research strategy

Research design	Quantitative research strategy	Qualitative research strategy
Experimental	Typical form: Most researchers using an experimental design employ quantitative comparisons between experimental and control groups with regard to the dependent variable.	No typical form. However, Bryman (1988a: 151-2) notes a study in which qualitative data on school children were collected within a quasi-experimental research design (Hall and Guthrie 1981).
Cross-sectional	Typical form: Survey research or structured observation on a sample at a single point in time. Content analysis on a sample of documents.	Typical form: Qualitative interviews or focus groups at a single point in time. Qualitative content analysis of a set of documents relating to a single period.
Longitudinal	Typical form: Survey research on a sample on more than one occasion, as in panel and cohort studies. Content analysis of documents relating to different time periods	Typical form: Ethnography research over a very long period, qualitative interviewing on more than one occasion, or qualitative content analysis of documents relating to different time periods. Such research warrants being dubbed longitudinal when there is a concern to map change.
Case study	Typical form: survey research on a single case with a view to revealing important features about its nature.	Typical form: The intensive study by ethnography or qualitative interviewing of a single case, which may be an organisation, life, family, or community.
Comparative	Typical form: Survey research in which there is a direct comparison between two or more cases, as in cross-cultural research	Typical form: Ethnographic or qualitative interview research on two or more cases

Source: Bryman (2016)

As an exploratory study, it seeks to understand and identify the existing barriers in the supply chain of HPE by air from Nigeria to the United Kingdom. This approach aims to discover the state of HPE and also to gain new insights about this phenomenon. As a descriptive approach, it further extends the exploratory aspect by gaining an accurate profile of events that occur such as the description of the supply chain of HPE and the air cargo operations. These events and the barriers identified are analysed accordingly to contribute to understanding the current state of HPE in comparison to the requirements for participation in the global horticulture value chain. Consequently, the limitations and deficiencies will guide the research to produce

inferences on catch-up growth strategies required to gain market access and competitive advantage in international markets as a means to increase economic growth.

Bryman (2016) noted that the strategy selected in a research project determines the relationship between theory and research. A case study can take either an inductive or a deductive approach depending on the research strategy selected. The former is employed by a qualitative strategy while the latter is taken by a quantitative strategy. This case study takes an inductive approach since it seeks to discover the barriers that have hindered Nigeria from exporting high-value agricultural products despite the comparative advantage and opportunities that are available. This is not to say that other strategies cannot be used, but a case study is the best option because it offers the best approach to enquire and understand current issues.

This methodological approach is chosen for various reasons. First, a case study strategy allows this social phenomenon to be understood within a real-life context (Yin, 2009; Eisenhardt, 1989). Second, it adequately fits this exploratory study and it is more advantageous compared to others in providing a solution to this particular enquiry. Although contemporary issues can also be investigated using an historical strategy, a case study incorporates interviews with the participants involved and also direct observation of the subject. Third, a substantial amount of existing literature on the fresh food supply chain uses a case study design (Baglioni, 2015; Afari-Owusu, 2014; Yu & Nagurney, 2013; Belwal & Chala, 2008) since it enables a better understanding of the phenomenon being studied.

One of the distinctive advantages of a case study strategy over others is its ability to use multiple sources of evidence in a single study enabling triangulation which in turn increases the validity and reliability of the evidence (Yin, 2014; Saunders, et al., 2009). According to Yin (2014), there are four types of case study designs, namely: single-case (holistic) designs, single-case (embedded) designs, multiple-case (holistic) designs and multiple-case (embedded) designs. The main distinction between holistic and embedded designs is associated with the number of units of analysis a case may contain while the major difference between single case and multiple case is related to the number of cases that a research project focuses on.

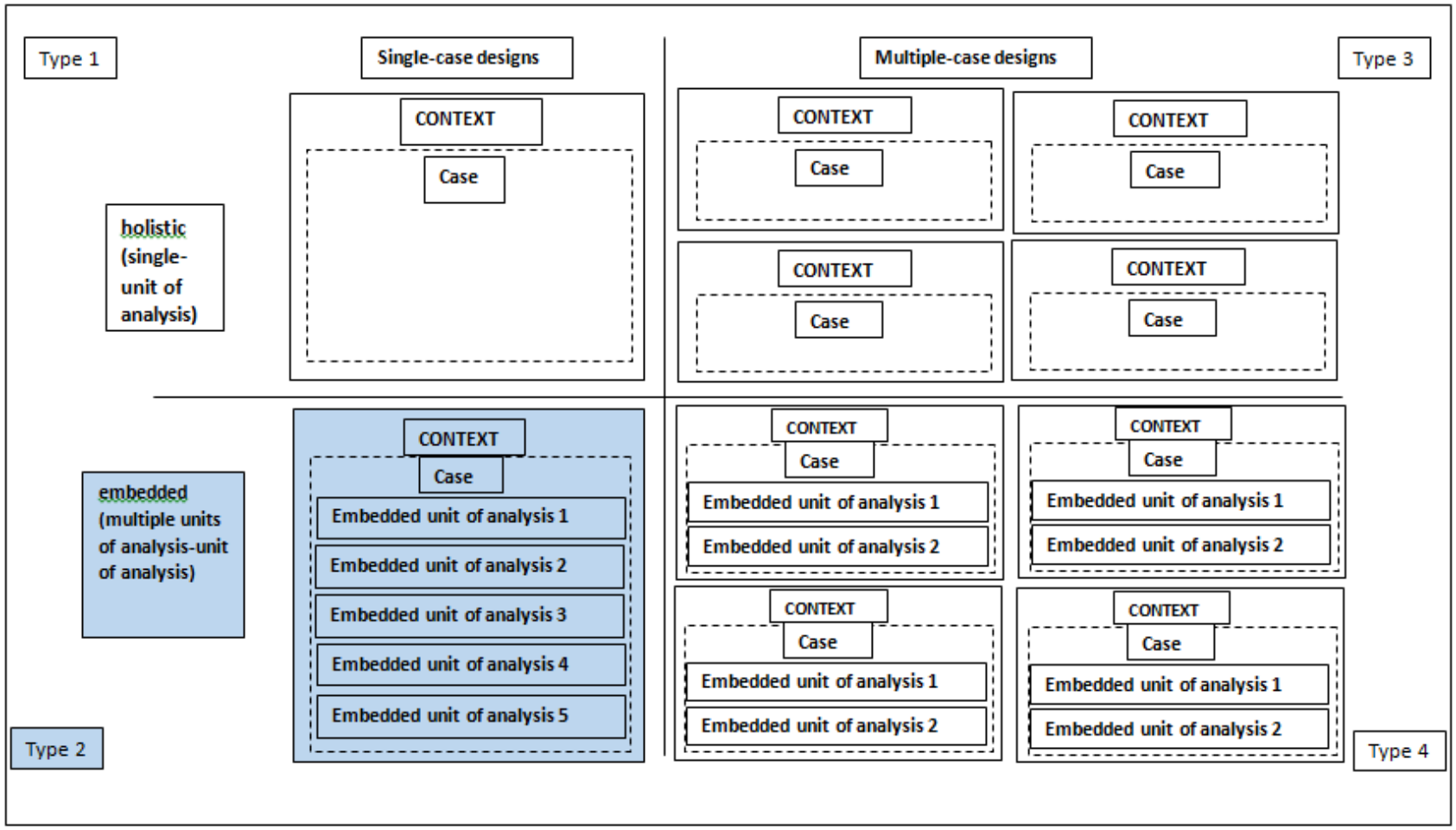
While a single-case (holistic) design uses only one unit of analysis, a single-case (embedded) design explores multiple units of analysis in a single case. A single case design is therefore used to examine a specific case to better understand what is happening within the context of interest while two or more cases can be explored using a multiple-case design. Although a multiple-case design is believed to provide more convincing and reliable evidence,

nevertheless, a single-case design allows adequate attention to be paid to the reality of the context.

A single-case (embedded) design suits the purpose of this particular research. Therefore it was adopted to examine the specific case of HPE from Nigeria through the perspectives of the participants (see Type 2 in Figure 4.3).

Five stakeholder groups were identified as appropriate participants (Cook, Alston & Raia, 2012). The rationale for using a single-case (embedded) design is that it allows this research to capture the everyday experience of each stakeholder group with different roles and responsibilities, which are specifically unique and different from others. Each group of stakeholders is the subject of an individual unit of analysis with five units of analysis covered. In doing this, the barriers in the supply chain of HPE were adequately captured based on common perspectives and so produce a more robust set of evidence.

Figure 4. 3: Types of case study research designs



Source: Yin (2014, p.50)

Table 4.4 is a summary of the case study methodology used showing the aim and objectives of the study, procedures and data collection methods used.

Table 4. 4: Case study methodology

Single-case embedded study of HPE from Nigeria	
Aim	To examine the potential for increasing the export of horticultural products from Nigeria, especially by air, to the United Kingdom.
Research questions	• What are the barriers to increasing horticultural products' export by air from Nigeria? • How can Nigeria improve the export supply chain of horticultural products to generate economic growth?
Objectives	(3) To identify the extent of the current supply of HPE from Nigeria, in particular to the United Kingdom. (4) To identify existing barriers that inhibits HP exports from Nigeria. (5) To make recommendations as to how these barriers might be reduced, in particular with respect to the supply chain in order to increase the volume, quality and value of HPE from Nigeria.
Procedures	Stage 1: Develop a case study of HPE from Nigeria. Stage 2: Identify the participants relevant to the study based on their current involvement in HPE. The identified stakeholders are farmers, exporters, air freight forwarders, aviation operators and relevant government institutions. Stage 3: Undertake interviews with each stakeholder group to explore the state of HPE and the existing issues in the supply chain of HPE.
Research methods	Semi-structured interviews – in-depth, focus group and telephone. Direct observations Archival records

Case Study: HPE from Nigeria

A pilot study was conducted in February, 2015 with two importers in the UK and two exporters in Nigeria who identified farmers, exporters, air freight forwarders, aviation operators and relevant government institutions as important stakeholders that should be interviewed if the case of HPE is to be fully understood. They reviewed previously outlined interview questions and suggested necessary ones. Their suggestions provided useful guide to exploring the case and the data collection process and allowed modifications to be made prior to the main study (Kim, 2011).

This research was undertaken in Lagos, Nigeria. The Lagos State of Nigeria was selected as the study setting because it is the location of Murtala Mohammed International Airport (the major perishable cargo international airport in Nigeria) where horticultural products are

predominantly shipped. Lagos is also the commercial heart of the nation with a population of over 20 million people and is a centre of relevance, accessible to information. Although Nigeria has an opportunity to trade with the European Union, the United Kingdom is selected in this study because it is currently the major export market for Nigerian horticultural products and because of the large Nigerian population in the UK (Office for National Statistics [ONS], 2015). It is therefore believed that the ability to resolve the issues in the supply chain of HPE from Nigeria to the United Kingdom might open up opportunities to access other export markets.

A case study of HPE was developed to conduct an in-depth investigation of the state of HPE from Nigeria with particular focus on the existing barriers that inhibit the supply chain of HPE while exporting to the UK. The activities within the supply chain were explored in addition to the working conditions and attitudes of stakeholders. This entails operational export procedures and practices, the state of facilities, air cargo operations amongst others. Adopting a case study research design enabled this research project to discover and identify key issues pertinent to HPE using semi-structured interviews, direct observations and archival records as multiple sources of evidence. Moreover, exploring the diverse perspectives of each stakeholder group using multiple units of analysis notable in a single-case (embedded) design provided a more focused and detailed level of inquiry (Yin, 2014). In short, this methodology allows common perspectives of the participants to produce more valid evidence and overall, enables an empirically-rich view of the phenomenon.

4.6 Time horizon

Different time horizons taken to investigate a social phenomenon are ‘snapshot and diary time horizons’ as stated by Saunders et al. (2016) and they are important in research. While a cross-sectional study employs a snapshot time horizon to collect data from a given sample at a single point in time, a longitudinal study employs a diary time horizon to collect data from the same sample over an extended time. This extended time may be necessary to understand change and the development of the subject of study. This research is a cross-sectional study of HPE from Nigeria and data was collected from participants in each stakeholder’s group between April and November, 2015 (see Appendix 4.5 for the interview schedule).

4.7 Techniques and Procedures

4.7.1 The data collection process

The quality of an empirical research can be affected by the data collection technique. Therefore, the data collection process requires "care, control and thoughtfulness" (Punch, 2014, p.320). The process includes sampling techniques, data collection instruments and approach, research quality and ethical considerations.

- **Sampling**

Sampling is a process of selecting the appropriate units or samples required to adequately address the research question(s) (Collins, 2010). Probability sampling and non-probability sampling are two main types of sampling techniques used in social research. Curtis & Curtis (2011) distinguished between these two main forms of sampling techniques. Probability sampling involves the rigorous random selection of individuals within the population ensuring each of them have equal chances of being chosen and it gives room for statistical inferences. Conversely in non-probability sampling, selection is not based on randomness and the resulting data set are therefore classified as weak. The reason for such classification lies in the fact that non-random samples do not represent the larger population in a study, therefore, outcomes cannot be generalised (Bryman, 2016). Nevertheless, non-probability sampling is used in selecting samples that enables the research to adequately explore the research question. Such samples are known to provide rich information.

Non-probability sampling techniques that are commonly used are quota sampling, purposive sampling, snowball sampling and convenience sampling. They are used in case study research for an in-depth investigation of the phenomenon by focusing on a small population (Saunders et al., 2009). Hence, the suitability of the selected sample to answering the research question(s) and the objectives of the study is considered very important. This research has adopted a non-probability sampling technique with samples chosen using snowball and purposive sampling to provide "an information-rich case study to explore the research questions and gain theoretical insights" (Saunders et al., 2016, p.297).

Snowball sampling is a method that is appropriate for gaining access to participants that are difficult to reach. It starts with the initial identification of the first contact who knows people that are cases of interest and can provide answers to the study enquiry who in turn know other people that have similar characteristics. The samples are said to be identified through "chain

referral methods" hence this sampling technique is called chain sampling, chain referral sampling or referral sampling.

A purposive sampling technique enables the selection of samples that are most appropriate to answer the research question(s). It is important to note that a purposive sampling technique is primarily suitable for qualitative studies; it can also be used by other research strategies when the case being sampled is the major focus of the study (Teddlie & Yu, 2007).

Although snowball sampling can lead to bias and lack representativeness of samples, it is the only viable approach that can be used in this study to gain access to appropriate contacts in Nigeria where response to communication via email is very low, attitude to enquiry is suspicious and there is increasing feelings of insecurity caused by political instability and terrorist attacks. Since there are no functional records to draw up a list and some degree of trust is required to enable access to participants, snowball sampling was first employed to identify initial contacts. It began by asking key informants to identify individuals in each of the five stakeholder group selected in the supply chain of HPE from Nigeria. For example, Nigeria Plant Quarantine Service (NPQS) officers that monitor the supply chain activities from farm to the export gate introduced farmers and exporters while the exporters referred the researcher to their freight forwarders and so on. The targeted stakeholders in the supply chain of HPE were then purposively selected to answer the research questions and so meet the objectives of this study. Although these techniques are prone to bias because of the subjective approach, the bias is minimised since multiple units are sampled.

The sample size for a qualitative interview is difficult to establish because different researchers have different views (Bryman, 2012). Warren (2002) suggested a minimum sample size to be between twenty and thirty whilst Gerson & Horowitz (2002) suggested between sixty and one hundred and fifty for a qualitative study. In the light of the theoretical position this study adopted, Polkinhorne (1989) suggested that a sample size between 5 and 25 is appropriate. Others suggested that sample sizes should be considered based on "data saturation" (Mason, 2010; Onwuegbuzie & Collins, 2007; Guest, Bunce & Johnson, 2006). This is a point where no new data emerged but where the same information is provided by respondents. A researcher therefore needs to recognise the point at which this occurs and then stop the data collection process.

Previous related studies have used varying sample sizes (Baglioni, 2015; Jraisat, 2010; Belwal & Chala, 2008; Fearne & Hughes, 2000; Wilson, 1996). A sample size of twenty six was used in this study. This number of participants is believed to be appropriate to provide relevant conclusions not least because HPE is still at its infant stage of development in Nigeria and it could be said to be almost non- existent at the time of the research (UNCTAD, 2016; European Commission, 2015). This is of course the prima facie reason for undertaking this research study. At the present time, only a few farmers and exporting companies are involved so, interviewees were those that are currently active in the business. The data collection process stopped at the point of data saturation hence, a small sample size was used. Although statistical generalisation cannot be considered for the type of sampling technique employed, it is appropriate because the focus of this research is not to generalise findings.

The stakeholder groups selected are farmers, exporters, freight forwarders, aviation operators (airlines and a ground handling company) and relevant government institutions (Cook et al., 2012) (such as the Nigeria Export Promotion Council, NPQS unit of Federal Ministry of Agriculture, Chambers of commerce and Industry, Nigeria Export-Import Bank and Ministry of Trade and Investment). The individuals interviewed are farm owners, a Deputy Director, Chief Executive Officers, Managing Directors, Operations Managers, Marketing Directors, Cargo Managers, a Zonal Controller, a Senior Economist, and a Business and Commercial Manager from appropriate companies. These stakeholders are knowledgeable in the area of relevance to the research and are therefore selected because they will be able to provide answers to the research questions (Saunders et al., 2009; Collins, 2010). Various data collection techniques such as interviews, direct observation and archival records are combined to gain a rich understanding of the contemporary issue (Yin, 2009, Saunders, et al., 2009). Table 4.5 shows the sampling approach for this study.

Table 4. 5: Sampling Approach

Sampling techniques	Snowball and Purposive sampling
Sample and number of respondents	Farmers - 3 Exporters - 4 Air freight forwarders - 8 Aviation operators - 5 Government Institutions -6
Selection Criteria	• Knowledgeable in the area of relevance to this research • Willingness to participate • Availability
Forms of Interview	Focus group – 7 participants Face to face – 15 participants Telephone – 4 participants
Sample size	Twenty six

Research methods

Research methods are data collection instruments used in gathering data that is relevant to the research questions. Yin (2014) indicated that interviews, archival records, documentation, direct observation, participant-observation and physical artifacts are six sources commonly used for collecting case study evidence. The empirical data used in this study were gathered through three sources namely, interviews, direct observation and archival records. Each of these is assessed below.

Interviews

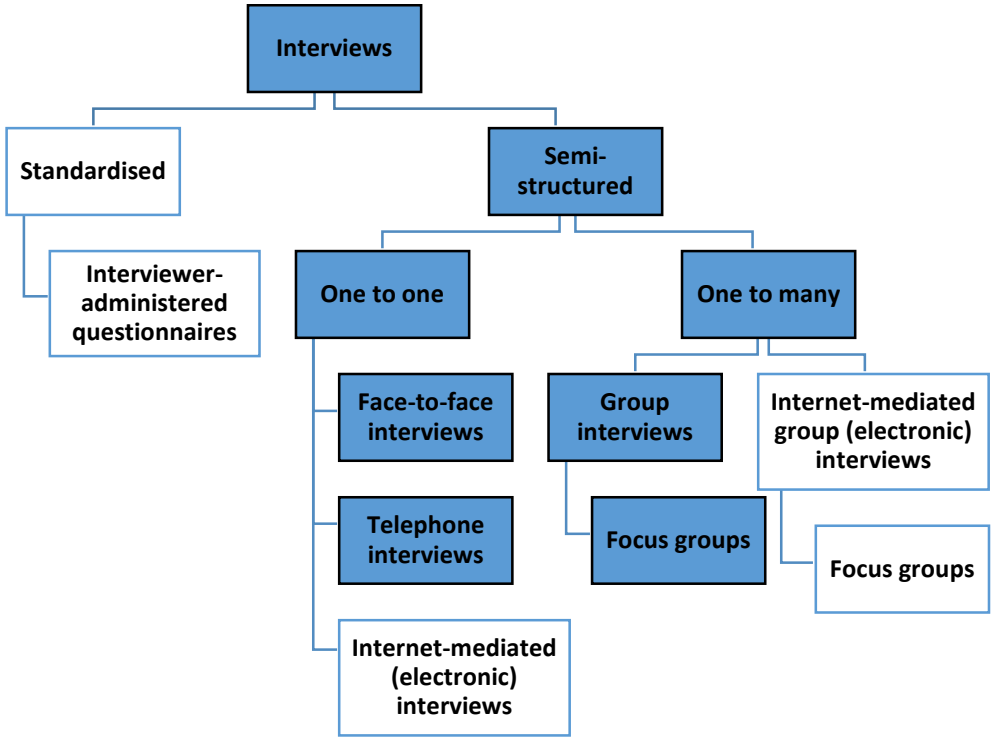
An interview is a phenomenological approach that allows rich data to be generated; it is rigorous and the quality of data generated through this method faces contentious issues such as bias, reliability, validity and generalisability (Saunders et al., 2016). It is a "logical research technique" that is most suitable for exploratory research (Gray, 2014, p.382). Interviews are used as one of the data collection instruments to understand the experiences of the targeted stakeholders and the meanings construed of their experiences. With a questionnaire, questions asked may not be clear and the level of response may be lower. To minimise the contentious issues peculiar to using the interview as a data collection instrument, a good record of the data was ensured, good relationships with participants were maintained and their responses were well interpreted (Bryman, 2012).

A case study protocol (see Appendix 4.1) was also used as a guide to increase the reliability of this single embedded case study as it contains the overall guidelines to be followed while conducting the interviews in addition to the questions (Yin 2003). Nevertheless, the interview process followed the case study protocol and the flow of the conversation because data were gathered through semi-structured interviews with the stakeholders (Belwal & Chala, 2008; Afari-Owusu, 2014, Baglioni, 2015).

Three types of interviews used in qualitative research are structured, semi-structured and unstructured interviews. According to Saunders et al. (2016), semi-structured interviews have a non-standardised structure implying that although the interviewer may already have a list of key questions to ask, the flow of the conversation determines the order of questioning which may change from one interview to another. This structure is significant for understanding a phenomenon from the interviewees' perspectives; this is a primary focus of phenomenology because it uses open-ended questions to probe for more detailed answers from respondents and allows them to provide broad views about the enquiry. Semi-structured interviews may also allow the omission and addition of some questions to suit a particular organisation (Saunders et al., 2009).

Participants were busy people and could only be reached during their working hours so they were interviewed in their normal work environment in Lagos State. Using a semi-structured interviewing approach, they provided their broad views about the subject of enquiry which specially relates to their work experience; quality data was therefore generated from them. It was difficult to book face-to-face interview appointments with four of them and this resulted in telephone interviews. The real life field experience determined the form of interview used in this study. To achieve the purpose of the research, different forms of interview used included focus group, face-to-face and telephone interviews (Figure 4.4). Recorded interviews were transcribed and the field notes were word processed. These transcriptions are analysed and presented in Chapter 5.

Figure 4. 4: Forms of interview



Source: Saunders et al. (2016)

- **Focus group interview**

A focus group interview is usually used to generate richer information than face-to-face interviews because different people gather to discuss a wide range of ideas about the subject of interest (Krueger & Casey, 2014; Marshall & Rossman, 2006; Kitzinger & Barbour, 1999). However, its quality is determined by the level of interaction among participants. A focus group interview was employed with the air freight forwarder's stakeholder group.

During the data collection planning stage, a Managing Director (MD) of a freight forwarding company was given as a possible contact during a visit to the export warehouse. Regular telephone communication was maintained with this particular MD who identified and suggested other participants for the focus group. Seven air freight forwarders participated in a focus group interview and these participants were selected based on their roles, knowledge of the research topic, ability to interact with one another and the facilitator, a willingness to participate and their availability at the export warehouse during their break time (Saunders, 2016). Prior to the start of this interview, a time was allowed for the introduction of the topic and to meet all attendees.

The request letter (Appendix 4.2) and the consent form (Appendix 4.3) (informing them about the purpose and benefits of the research, methods for data collection and seeking their approval for audio recording) were read and distributed to them along with the personal data form (Appendix 4.4). Their signatures were evidence of their willingness to participate. The researcher (labelled as a facilitator in a focus group) then set some ground rules before the start of the focus group interview and notified the participants of the kind of behaviour and actions expected from them in the course of the discussion to enhance a smooth flow of the data collection process and active interaction. An example of such ground rules was signifying by raising hands before talking for the purpose of orderliness and not interrupting when another participant was talking.

The focus group interview was audio recorded and it lasted for 46 minutes. Since a natural setting can influence data collected during a focus group interview, the meeting took place in one of the offices within the export terminal and this enabled them to interact comfortably. Valid data were obtained by asking fewer questions and participants interacted actively not allowing any one personality to dominate the discussion (Matthews & Ross, 2010). A semi-structured interview approach which allows the use of open-ended questions (designed in line with the research purpose and literature review) was used. These participants discussed their views interactively enabling shared meanings to be constructed from the analysis of their social interactions helping to make sense about the topic (Belzile & Öberg, 2012).

- **Face-to-face interview**

A face-to-face interview allows the researcher to "probe deeply to uncover new clues, open up new dimensions of a problem and to secure vivid, accurate inclusive accounts that are based on personal experience" (Burgress, 1982, p.107). It generates richer data than a telephone interview because the researcher can observe the facial expression of participants and clarify the meaning of the questions when necessary (Bryman, 2012). It is also more beneficial because other information such as relevant documents can be easily collected. Face-to-face interviews were conducted with 15 stakeholders which included two farmers, two exporters, one freight forwarder, five aviation operators and five employees of government institutions.

It was initially difficult to gain access to farmers, exporters and some targeted employees of government institutions because permissions were required from NPQS and some other authorities. To enable access, top officers in some of the authorities were contacted by an importer of food products in the UK (a Nigerian, who was a participant of the pilot study) and

a contact who works with an airline. After being granted permission, participants were approached individually with the intention to seek their participation for an in-depth interview on a set date and time. Interview dates and times were set for only three participants (two among the aviation operators and one exporter). The remaining interviews took place a few minutes after the first approach and this period was used by some of them to either arrange the meeting venue or for them to complete the task at hand. The availability of the participants was the reason for conducting the interviews in this manner since they appeared to be busy because of the nature of their work.

A request letter (Appendix 4.2) and a consent form (Appendix 4.3) were read and given to each of them along with the personal data form (appendix: 4.4) prior to the beginning of the interview; their signature indicated their willingness to participate. The interview was conducted in their work environment which is their natural setting. Although there were quite a number of interruptions due to pre-export activities and other operations, they expressed their views about the topic providing answers to the questions passionately and this suggested the area of this research interest concerned everyday experiences of their work life. The interviews were tape recorded (except three) and lasted between 22 and 86 minutes.

- **Telephone interview**

A telephone interview is cheap and convenient but it has some limitations such as: it is generally believed to generate lower quality of data than face-to-face; there is risk of speaking with the wrong person and also the fact that telephone respondents cannot be physically observed (Bryman, 2012). Notwithstanding, telephone interviews were conducted with four participants who could not be interviewed face-to-face because of their busy schedule. Though the telephone respondents could not be observed, the researcher ensured the correct people responded. Also, the quality of data was as high as that of the face-to-face interviews because the researcher had met with three of the telephone respondents beforehand and has had several communications with the fourth participants before and after the interview. The telephone interview was the only alternative means of conducting interviews with them since the face-to-face interviews could not take place.

Participants interviewed via telephone were one farmer, two exporters and one employee of a government institution. The interviews took place on set dates and times. The request letter (Appendix 4.2) and the consent form (Appendix 4.3) were also read to them along with the personal data form (appendix: 4.4) and the interviews commenced after they agreed to audio

recording and willingness to participate. They were asked open-ended questions using the semi-structured interview approach and were able to communicate their views easily although there were sometimes network issues interrupting the flow of the discussion. The interviews lasted between 36 and 83 minutes.

Direct observations

A direct observation was carried out between April and May 2015 to detect some of the issues in the supply chain of HPE and to understand the export process. This observation "covers context of the case" and it reveals reality about the event "in real time" (Yin, 2009, p.102). Several visits to the Nigerian Aviation Handling Company (NACHO) export warehouse and the Nigeria Plant Quarantine Service (NPQS) office at Murtala Mohammed International Airport during the in-depth and focus group interviews with some of the stakeholders enabled observation of the supply chain, export operational procedures and other related activities. Permission was granted by the respective authorities and some of the activities observed included cargo unloading, screening, packaging, weighing, documentation check, and scanning for export.

The conditions of work, equipment used, time of operations and behaviour of the people present were also observed. Observation consumes time so it requires several observations to cover a broader view. In this case, the events were observed by a single observer nevertheless, the observations took place for a minimum of four hours for five days and has provided additional information about the challenges to exporting horticultural products and the general state of HPE from Nigeria. Although the reliability of direct observation could be increased with photographs, this was not allowed. Field notes and a document showing the export cargo process flow chart were the observational evidence of visit to the site (Yin, 2014). These observational facts were analysed (see appendix 6.1) manually following the thematic analysis framework by Braun & Clarke (2006) and were used to support the findings from the interview data.

Archival records

Archival records are useful secondary data that helps the researcher to understand the research context. Although these records are stable and not deliberately created for a particular research project, there is a possibility of author bias and accessibility may be denied by the organisation concerned if required later (Yin, 2009). Eleven documents were collected from relevant organisations (Nigeria Export Promotion Council, airlines, Nigeria Export Import Bank and

Nigerian Aviation Handling Company Plc. to support the data from interviews and direct observations. They include:

- Export seminar and promotional records
- Volume of export records
- Lending requirements
- Export cargo process flow chart
- Airway bill

These records (see Table 4.6) contain both quantitative and qualitative data. Issues of relevance to this study were thematically analysed (see appendix 6.2) and used to support the findings from interviews and observational data as this will reduce authors' biases.

Table 4. 6: Types and Sources of Archival records

N0	Document title	Source
1.	A framework of export strategy For The Federal Republic Of Nigeria 2005 - 2010	Nigerian Export Promotion Council
2.	Business Sector Round Table, Product Profile: Cut flowers & Foliage (Discussion Document) Brussels, 16 May 2001	Nigerian Export Promotion Council
3.	2010 NBS/CADP Baseline Survey Report National Bureau of Statistics (NBS) -Commercial Agriculture Development Project (CADP) - a World Bank investment programme in Nigeria.	National Bureau of Statistics
4.	Breakfast Meeting at Nigerian-British Chamber of Commerce	Nigerian Export Promotion Council
5.	Facilitating and Optimizing Export of Nigerian Horticulture Products through Conformity to Global Best Practices in Cargo Handling, Processing, Packaging Shipments & Documentation	Nigerian Export Promotion Council
6.	Product profile on cut flowers	Nigeria Export Promotion Council
7.	Samples of airway bills	British Airways
8.	Nigeria Export Proceeds form (NXP)	Cobalt
9.	Export volume	DHL Aviation
10.	Application for direct lending	Nigerian Export-Import Bank
11.	Export cargo process flow chart	Nigerian Aviation Handling Company Plc.

4.7.2 Data analysis

Qualitative data are analysed based on the nature of the theoretical approach (deductive or inductive) used in a research study (Saunders et al., 2016). A deductive approach requires the use of a theoretical framework that has its roots in existing theory for data analysis whereas an inductive approach (also referred to as grounded theory) explores the data collected and identifies themes that emerge from the data during its analysis in order to develop a conceptual framework. In this latter case, it is believed that meaningful interpretation of the data aid better understanding than following a predetermined framework that restricts new issues from being discovered from participants' views.

Thematic analysis is a systematic method of analysing qualitative data in such a way that themes are identified, analysed, interpreted and reported (Braun & Clarke, 2006). Since it allows flexibility, it can be used regardless of the theoretical underpinnings. Though similar to grounded theory and discourse analysis in the discovery of themes, it is more accessible because it requires less detailed theoretical approaches. Braun & Clarke (2006) outline a series of steps to be taken when using a thematic analysis approach. This begins with getting familiar with the content of data collected; identifying significant feature (codes) that grabs the attention of the analyst and relevant to the topic of interest; categorising related codes into potential themes; reviewing potential themes and codes clustered around it for better alignment; defining and refining the themes and ends with the report of the analysis where expressions that vividly captures the themes are demonstrated.

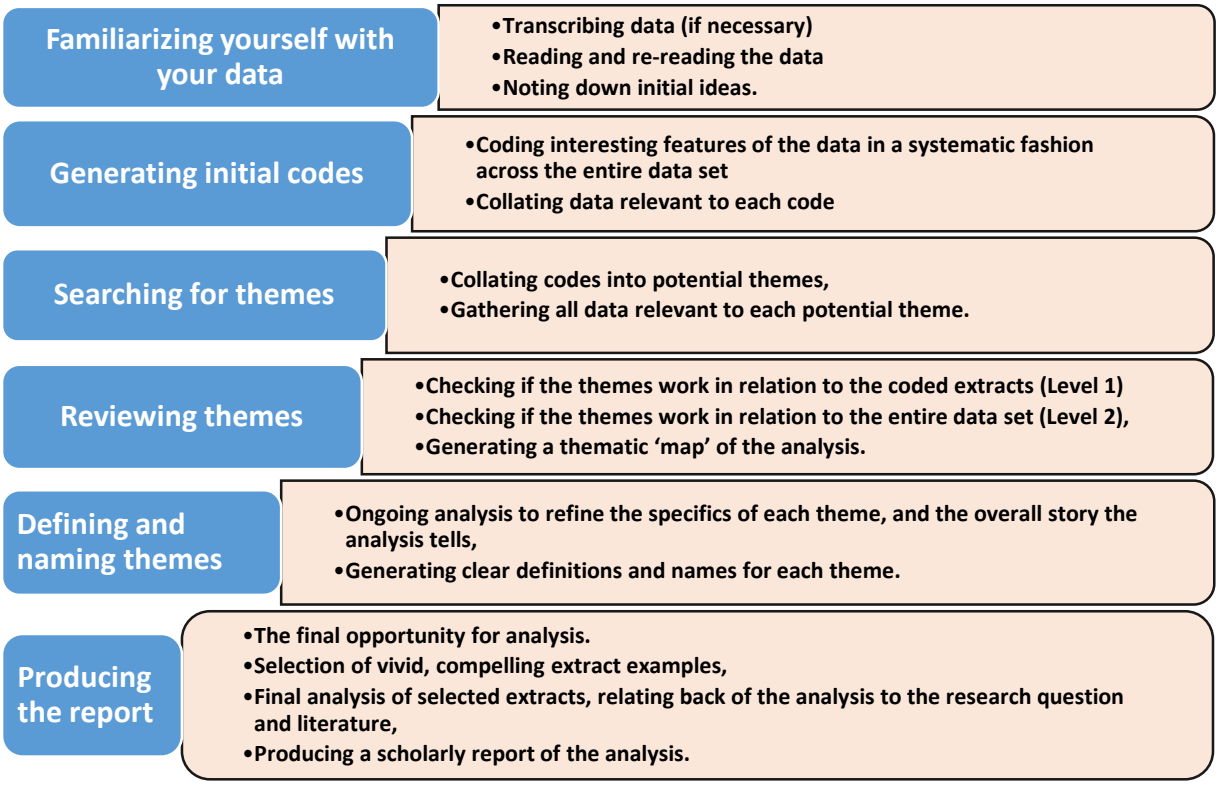
This research has applied the thematic analysis framework suggested by Braun & Clarke (2006) to appropriately analyse the data collected in a flexible way to fit the research questions while recognising that it is a "recursive process" rather than a linear type (Figure 4.5). With the use of a thematic analysis method, patterns of meaning (themes) across the dataset that provide answers to the research question being addressed were identified. The analytical process involves transcribing, coding, categorising codes into themes, reviewing and refining into main themes and sub-themes. The interviews were first transcribed and analysed manually in order to become familiar with the depth and breadth of the data. This was followed by the application of NVivo 10 computer software – a qualitative analysis software which aided the organisation of the data and enabled a structured work (Bryman, 2016).

The transcribed responses were imported into NVivo from Microsoft Word and sorted into five categories - barriers, supply chain, air cargo operations, state of HPE and opportunities. This

was done to establish the barriers that hinder HPE, how the different activities that make up the supply chain and air cargo operations are structured, the general state of HPE from Nigeria and the opportunities available for horticulture export. The responses were then coded to facilitate analysis into sub-themes and main themes. Within the barrier category, related sub-themes across the stakeholder groups were clustered around the main themes. These codes and themes were verified by another researcher (a finance colleague) while analysing and interpreting the data to minimise bias. Adequate quotations that indicate the prevalence of each theme were critically narrated in the findings and cross analysis chapters (5 & 6). These are presented in Chapter six. It is important to note that the quotes used have undergone a process of 'clean-up' to avoid reporting irrelevant information (Clarke & Braun, 2013).

Moreover, the data gathered from the direct observation and archival records were each word processed and analysed manually since they generate less data than the interviews. The analytical process also followed the thematic analysis framework of coding, categorising codes into themes, reviewing and refining into main themes and sub-themes. These are presented in Appendices 6.1 and 6.2 respectively.

Figure 4. 5: Thematic analysis framework



Adopted from Braun & Clarke (2006)

4.7.3 Ethical considerations

The Economic and Social Research Council outlines six fundamental principles in its framework for research ethics. This is organised around respect, responsibility, integrity, voluntary participation, clarity and the protection of individuals and society from harm (Economic and Social Research Council [ESRC], 2016). This research follows these ethics by: seeking participants' consent, ensuring anonymity and confidentiality, protecting respondents' from harm, and interviewing only willing participants in order to comply with moral principles. Although consent letters were not sent to the majority of them prior to the date of interview because of lack of accessibility and limited time, it does not affect the ethical conduct of this research. The letters were given to them individually before the start of the interviews and they were given time to read the content.

Signatures are the evidence of their willingness to participate in the interviews. Moreover, only the willing participants were interviewed. Four participants agreed to telephone interviews on chosen dates and times based on their availability. Only participants that gave their consent to audio tape recording were recorded using a digital recording device. For the three participants who rejected audio recording because of insecurity and a lack of trust which they communicated to be from previous experience, notes were taken during the interview using abbreviations. The information gathered was later transcribed. The recordings were saved securely and then backed up on three devices namely: the researcher's personal laptop, memory stick and a separate hard disk to avoid data loss and damage.

The data collection process followed the ethical guidelines for conducting a research. In short, this research has been conducted "in a responsible and morally defensive way" (Gray, 2014, p.68).

4.8 Research Quality – Validity and Reliability

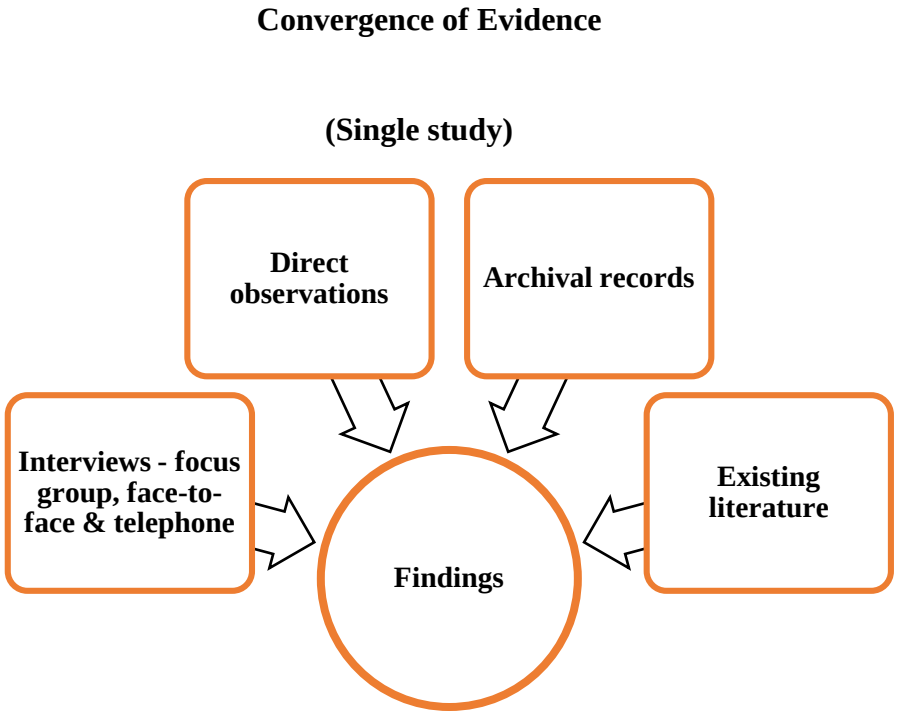
The validity and reliability of research procedures enhance the quality of the research (Bryman, 2016). Validity is concerned with the truthfulness of the conclusions generated while reliability is concerned with consistency of the measure of a concept. The criteria used for assessing the quality of social science research, including a case study research, are construct validity, internal validity, external validity and reliability (Yin, 2014). All other tests (except internal validity) are used to ascertain the quality of this research. Internal validity does not apply to

this research because it is not a study which seeks to establish causal relationships. Approaches used to achieve these criteria are explained below:

- **Construct validity**

Construct validity was ensured to increase the quality of this study. First, a pilot study was conducted with two exporters of vegetables in Nigeria and two importers in the UK to ensure content validity of the data collection instrument (Gray, 2014). Their suggestions helped to capture the questions needed to ask of the targeted stakeholders. The questions were also reviewed by a professor, who has vast academic research knowledge in a related field. Second, interviews, direct observations and archival records are multiple research methods employed to gather information from different stakeholder groups during the data collection stage. The use of multiple sources of evidence in a single research study enables triangulation (Yin, 2014). Triangulation is a technique for validating data by cross verifying the same information through two or more sources. This is described by Saunders et al. (2016) as a way to ensure the credibility of research data, analysis and interpretation by using multiple research methods and multiple sources when gathering data about a phenomenon. This study demonstrates data triangulation (Figure 4.6) where data were collected from different types of data sources (interviews, direct observations and archival records) to validate the findings thereby tackling the threat to construct validity (Yin, 2003). The case study findings presented in Chapter 6 were based on the convergence of information from all sources of evidence. Third, one of the transcriptions was checked with one of the participants for clarity and correctness and all secondary data sources were rechecked to confirm the validity of the data.

Figure 4. 6: Data Triangulation



Source: Yin (2014)

- **External validity**

External validity is a criterion to test whether research findings can be generalised to a wider population. An inability to generalise findings is one of the limitations of a qualitative methodology and more so in a case study because a small group of individuals /organisations are sampled and findings tend to be unique to a specific context. This can be explained by different views and interpretations of social actors and their world of existence which have diverse meanings influenced by different contexts (Saunders et al., 2012). The focus of this research is not to generalise findings; rather, it is to generate quality data which will show an in-depth understanding of the contemporary issue. This research seeks to analytically generalise the research findings to the target population concerned with the exportation of horticultural products in Nigeria rather than seek statistical generalisation (Yin, 2009). The study participants are key stakeholders in the current supply chain of HPE in Lagos, Nigeria. HPE is still at its infant stage of development with only few people currently involved. The samples were carefully selected and are people that are actually living and experiencing the phenomenon. Some of them are leaders in the export industry and were chosen based on their years of work experience and involvement in policy making.

- **Reliability**

Reliability is a test to ensure the dependability or trustworthiness of research findings and conclusions when the same research procedures are repeated (Yin, 2014). To ensure reliability, case study protocols (Appendix 4.1) were developed for each stakeholder group and they contain procedures and questions to follow during the interviews to minimise biases and errors. Keeping an audit trail is important for ensuring a reliable repetition (Bryman, 2016). Therefore, interview schedules (see Appendix 4.5), field notes, interview transcripts, observational notes and other important documents used during the research phase are adequately kept in a case study database. Moreover, data were collated from reliable sources. All focus group interviewees and face-face interview respondents (except one) were interviewed in their work environment which pertains to HPE and this shows they are the people of interest to this study. Furthermore, secondary data are gathered from articles in journals, books, and sources such as World Trade Organisation (WTO), the Food and Agriculture Organization of the United Nations (FAO), the United Nations Conference on Trade and Development (UNCTAD), the European Commission (EC) and the World Bank. Data from such sources are valid and reliable because they are government records sourced by a team of experts (Boslaugh, 2007).

4.9 Conclusion

This chapter has presented the research methodology through the research onion given by Saunders et al. (2016) as a framework. Different philosophical standpoints, approaches to theory development, research strategies, research designs, time horizons, data collection methods and data analysis have been considered and choices made suitably answer the research questions posed as well as its aim and objectives. This research is a qualitative study that has employed a single-case (embedded) design and all the methodological choices made have been justified. The ways in which validity and reliability of the research procedures have enhanced the quality of the research have also been explained. The research approach is summarised below in Table 4.6. The next chapter will present the research findings.

Table 4. 7: Summary of Research Methodology

Level of decision	Methodological choices
Phenomenon	HPE from Nigeria
Research problem	Barriers in the supply chain of HPE
Philosophy	Phenomenology
Research strategy	Qualitative
Research design	Case study
Type of case study design	Single-case embedded
Research methods	Interviews (focus group, face-to-face and telephone), direct observations and archival records
Data analysis	Thematic analysis
Interpretation	Common perspectives, triangulation

Chapter Five: Barriers to HPE development in Nigeria- Stakeholders perspectives

5.1 Introduction

This chapter presents findings from the analysis of the empirical work on barriers that inhibit increasing HPE by air from Nigeria. The data were collected from individuals and relevant organisations in the supply chain of HPE via semi-structured interviews. The different types of interview used include in-depth, focus group and telephone interviews. This chapter is aimed at achieving objectives three and four; hence, the perspectives of each stakeholder group based on their responses to semi-structured questions are discussed below.

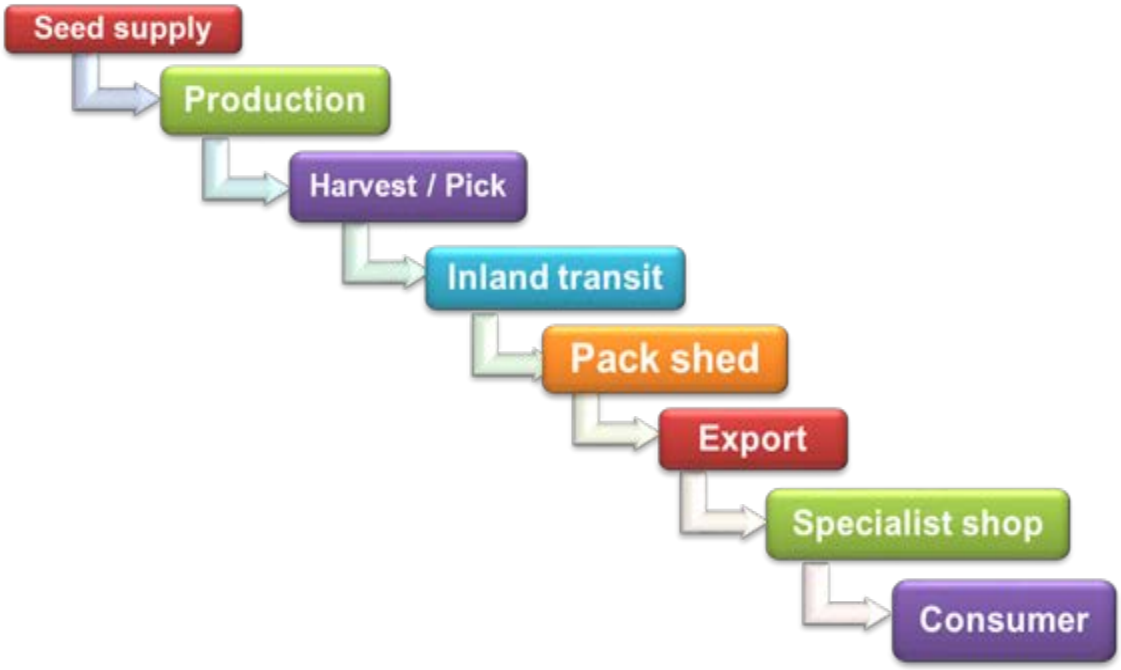
5.2 Supply chain of fresh vegetables based on the views of interviewees

The supply chain activities (Figure 5.1) begin with the procurement of seeds from the suppliers followed by planting. The production process of fresh vegetables for export starts from the farm and it is mandatory for farms to be registered with the Nigerian Plant Quarantine Service (NPQS) (popularly referred to as quarantine by respondents) for accreditation. NPQS is a unit of the Federal Ministry of Agriculture that monitors the supply chain of HPE from the farm to the export gate ensuring the farmers comply with regulations. Some of the activities include regular visits to the farms for inspection, witness of fumigation of the products eight days before harvest and monitoring of the harvest. On the eighth day, the fresh vegetables are harvested very early in the morning before sunrise to retain their freshness. After harvest, the vegetables are delivered to the farm shed where water is used as a method for pre-cooling the products. Unmarketable units are removed while marketable ones are then transported from the farm to the NACHO export cargo terminal at the airport mostly in non-refrigerated vehicles accompanied by NPQS staff.

At the NACHO export terminal, the farmers deliver the products to the exporters at the NPQS office which serves as the packing shed. Prior to the packaging for export distribution, NPQS carries out a visual inspection on randomly sampled products at its laboratory with the aid of a microscope and magnifying lens thereby screening for pests and freshness. Subsequently if pest free, a phytosanitary certificate is issued to the exporter certifying that the products are fit for export but if any product is detected as having defects, the entire consignment will be subjected to further investigation; in such cases, the phytosanitary certificate will not be issued and the

vegetables will not be exported. Consequently, the certified products are packaged in perforated cartons to allow for ventilation and then shipped to their export destination after fulfilling the payment, documentation and scrutiny process by the Nigerian Customs Service, NACHO, the cargo carrier, Federal Ministry of Trade and Investment, National Drug Law Enforcement Agency (NDLEA), Federal Ministry of Agriculture, Nigerian Police force and the Police Anti-Bomb squad at the export gate.

Figure 5. 1: A schematic diagram of the supply chain of fresh vegetable export from Nigeria



Currently, horticultural products are predominantly shipped through Murtala Mohammed International Airport, Lagos, because it is the main airport for perishable cargo. Due to the short shelf life of these products, a high percentage of the farmers have their farms in the Lagos area while others in neighbouring states travel to Lagos to ship their products. At the time the fieldwork was carried out, eight exporters were regularly involved in HPE and these products were exported weekly mainly on Mondays, Tuesdays and Wednesdays. An average of 10.5 to 11 metric tons is exported every week. Only eight regulated farms are functional and they are located in places such as Iyana Iba, Ikorodu, Sango in Lagos State and other states in close proximity to Lagos such as Ogun and Oyo (Figure 5.2: see the portion highlighted in red).

Figure 5. 2: Map of Nigeria showing Lagos (study location) and its neighbouring states

Evidence from the empirical analysis indicates that horticultural products exported by air from Nigeria to the United Kingdom targets the market amongst Nigerians in the UK and not the wider international market. This accounted for the reason for the low export volume (Table 5.1 and Figure 5.3). Most of the interviewees indicated that HPE is currently facing many challenges and there is a need to improve their supply chains to be able to compete in international markets. Even though the Nigerian government has recently encouraged HPE, there are several issues that need urgent and deliberate attention. The responses of the interviewees indicate that they face many problems and this is confirmed in the quotes below:

"*We have series of problems in Nigeria" (Managing Director at EC2).*

"*Every quarter has their shortcoming" (Export Manager at EC3)*

"*The problems are many" (Principal Agric. Superintendent at GOV2).*

"A lot of issues" (Cargo Manager at AV1).

The indigenous vegetables and a few fruit consumed by Africans, especially Nigerians, are mainly exported to the specialist sellers such as the African and Caribbean shops (excluding flowers). Examples of these vegetables are Ugu – fluted pumpkin leaf (Telfairia occidentalis), water leaf (Talinum triangulare), ewedu (Corchorus), bitter leaf (Vernonia amygdalina), okra, ukazi, Oziza, local pap, garden egg, onions and soko while examples of seasonal fruit are avocado pears, mango, star apple, pineapple, and pawpaw (Appendix 5.1).

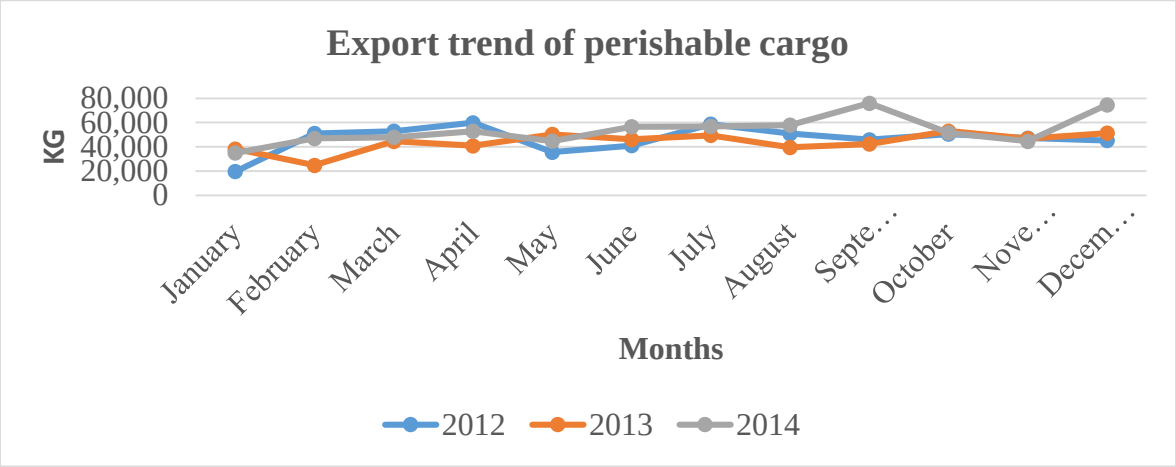
Table 5. 1: Comparison of volume of export of horticultural products between Nigeria and Cameroon to the EU

Year	Volume of export (Kg)	
	Lagos, Nigeria	**Douala, Cameroon**
2010	20,851	2,443,347
2011	81,635	2,694025
2012	35,767	2,406,969
2013	36,540	2,946,238
2014	35,227	2,273154

Source: DHL Aviation, Nigeria

Table 5.1 shows the volume of horticultural products shipped from Nigeria compared to those shipped from Cameroon by DHL between 2010 and 2014. This is an indication that the volume exported from Nigeria is still low.

Figure 5. 3: Export trend of perishable cargo from Nigeria to the UK



Source: British Airways World Cargo, Nigeria

Figure 5.3 shows total volume of horticultural products shipped by British Airways between 2012 and 2014. The highest volume shipped within this period was about 76,000kg, also indicating that the volume of export is low.

5.3 General information about the multiple units of analysis in a single-case embedded study

This research is a case study of HPE from Nigeria and the units of analysis are farmers (FM), exporting companies (EC), air freight forwarders (FFC), aviation operators (AV) and government institutions (GOV). These are referred to as stakeholder groups and they are important in the supply chain of HPE from Nigeria. It is therefore necessary to understand their perspectives so as to identify the barriers to increasing the export of horticultural products by air from Nigeria.

From the views of participants, the barriers hindering the potential for increasing HPE are analysed and are discussed below under thematic headings based on each stakeholder group. Only a few of their quotes are used in this section while some other quotes are presented in a cross analysis section in Chapter six and excerpts from NVivo 10 analysis report (Appendix 6.4).

5.4 Perspectives of Farmers

Introduction

The three farmers that participated in semi-structured interviews (two in-depth and one telephone interview) are small-scale farmers and owners of export registered farms in Lagos. They currently produce horticultural products on rented farmlands and supply fresh vegetables (mainly Nigerian vegetables) to the exporters either once weekly or fortnightly depending on demand. They also supply fresh vegetables to the local market to absorb the excess supplies that cannot be bought by the exporters. Each farmer has at least one exporter he/she supplies. (See Table 5.2 for their characteristics).

Table 5. 2: Characteristics of the farmer interviewees

Job Title	Company	Years of supply / farming experience	Farm size	Educational Qualification	Gender	Age (years)
Owner	FM1	Below 5 years / 11 – 15 years of farming	3 acres	Primary Education	Female	40 – 49
Owner	FM2	5 – 10 years / 34 years of farming	5 acres	Primary Education	Male	30 – 49
Owner	FM3	Below 5 years / 15 years of farming	2 acres	Post-Primary Education	Female	40 – 49

The barriers hindering the potential for increasing the export of horticultural products by air are highlighted and discussed below based on farmers' views.

Existing institutional framework

- Lack of incentives and support services

The farmers complained that they are not receiving any form of assistance from the government. They source seeds and fertilisers individually and these farm inputs are costly for them. Although government representatives sometimes enquire about their problems, the issues raised usually end there and the farmers are left to their fate without incentives.

When asked - Do you receive any government support (such as loan, facilities)? Their responses were as follows:

> *"We have union for the local market there but I've not seen anything that government has given to them" (FM1).*

"I buy seeds myself from Northern part of the country. The seed for soko cannot be found here in Lagos, it's from the North. It's only ewedu seeds that I buy from Abeokuta. We farmers buy chemical individually. We don't receive any chemical from the quarantine office" (FM2).

Although government support was promised several times, FM3 emphasised there has been no implementation.

Market penetration issue

- Lack of collective action

All the participants indicated that farmers are not organised into a co-operative society because of a lack of co-operation. FM2 highlights the effects of a lack of a co-operative society on the farmers and these include delayed payment, exploitation, unfair treatment and a barrier to entry created by exporters. He shared his experience as follows:

"You know we don't have a union to fight for our right. The exporters don't pay; they delay payment - sometimes two weeks or one week before they pay. I need to be paid on time because I need the money to pay labourers on my farm and also to buy the chemicals to fumigate my farm. Exporters are exploiting farmers. For all the products I bring in today, no payment has been made and I have to buy the chemical required for fumigation tomorrow. It's another problem if I don't have chemical" (FM2).

FM2 gave reasons for the lack of co-operation among the farmers:

"There is no cooperation among farmers because the experienced exporters prevent farmers from forming a union. The exporters don't pay transport cost, they suppress farmers. The two prominent exporters suppress farmers because of their position. They want the best quality but they don't pay. The exporters have meetings where they agree on the price they will pay the farmers whereas we the poor farmers, illiterates don't have meetings. We are not allowed to form union. The two exporters that started this vegetable export business don't want others to come into the business" (FM2).

"They will look for another supplier that will supply them on credit. So while you as a farmer insist on a particular price, another farmer will reduce the price so that they

can continue the business even at their own detriment. The exporters contribute to farmers' sufferings. They report farmers to the quarantine and the quarantine only tells the exporters to pay debt and they have the right to change farmers. Farmers are at the receiving end. Farmers don't have mouth to challenge the exporters- "a farmer, who are you?" As an exporter, you plead with them not to drop you" (FM2).

- Low demand

Currently, the demand for horticultural product by exporters is low and not stable. FM1 and FM3 expressed their views on this issue.

"I don't have enough shippers; the ones I have collect just small from me. The problem mostly is when you have enough vegetables and you don't have good shippers. If you have the one that is not collecting much from you, the vegetables will just be wasting in the farm unless I call the market women to buy the ones they can buy. I have three exporters now but they don't work regularly. It's only one that works regularly and she doesn't collect much" (FM1).

"Sometimes they don't take much (may be 100 cartons). The only problem for somebody like me is that I need customers. I need more exporters to supply my goods to. I supply two exporters but I want to stop one of them now because of her behavior. She used to plant but during raining season, she does not buy from us. I come there every Monday but sometimes if there is no demand, it will be the following Monday. But now, the exporter I supply does not collect much -once in two weeks. The other exporter has other farmers that supply her; not just me. That's why I need more customers. If you know any exporter that needs a farmer to supply ugu, I'm available for the person" (FM3).

FM2 shared a different experience. He explained that he supplies fresh vegetables for export on Mondays and Tuesdays because he produces quality vegetables and therefore supplies the majority of the exporters.

"An exporter introduced me to the quarantine and afterwards other exporters became connected. This is because I was doing well and I produce quality products. So any one of them that sees my vegetables will want me to supply them" (FM2).

Land tenancy issue

This issue is a major problem to farmers. According to those interviewed, they rent unsecured land for farming and after a while, the land owners ask them to quit the land and they have to look for land elsewhere.

"They lease the land to me to farm. After you have cultivated the land, spend a lot of money to cut the trees and clear the bush, by the time they see that the place is in order, and you have now rely on it that you will enjoy this place now by farming, before you know what is happening, the land owners will tell you they want to use or sell the land. Now I'm just jumping from one land to another land. And if the owners also say leave then I have to move again so that is the problem we have" (FM1).

"I have problem on the land where I farm now. There is no land security and I'm always afraid the land might be taken from me anytime" (FM2).

"I need large land because we are renting the land. We need our own land where we can farm" (FM3).

The farmers explained that the land owners sometimes exploit and restrict them from working on the land and this is a major concern to them. For example, FM1 expressed her concern in the quote below:

"Sometimes when you have harvested, for you to carry your goods out is a big problem. In that kind of a place now, the trouble is much. Why would you want to stay in a land where you don't have a relaxed mind?" (FM1).

Stakeholders' inadequacy

Although farmers have many years of experience (11 years and above), they lack knowledge of good agricultural practices because they have a low level of education and do not have

formal agricultural training. Therefore they have been growing the horticultural crops mainly using their instincts. FM1 and FM2 expressed their views as follows:

"I struggle to farm since I did not go to school" (FM1).

"We the poor farmers, illiterates" (FM2).

Infrastructure and logistics issues

Transport

Transporting horticultural products from the farm to the export gate remains a challenge to the farmers. All the participants agreed that they should be transporting their products with refrigerated vehicles but presently, they lack good post-harvest handling methods because they use non-refrigerated vehicles for their fresh products.

"I charter bus to bring in goods to the airport. Not refrigerated, it's the normal buses used for transporting passengers on the road" (FM2).

- Inland transit delay

In terms of inland transit, only FM3 complained about the delay by road traffic agencies and officials of the Vehicle Inspection Office (VIO). VIO enforces traffic laws and regulations in Nigeria and one of its roles is to inspect and issue a road worthiness certificate to all type of vehicles. According to this respondent, VIO officials disrupt their movement because farmers hire buses which are not licensed for transporting horticultural products and this usually causes their delay to the export terminal at NACHO.

"Whenever we are coming to the airport, VIO or road safety disturbs us on the way. Sometimes, we don't meet up and sometimes we get there late. And if we get there late, everything will be rushing. This VIO issue delays us. NACHO closes by 4:30pm and VIO official may leave us by 4p.m. When you get to NACHO late, they will tell you to carry your goods back" (FM3).

Food safety and quality concerns

Nigerian horticultural products are facing rejection in international markets. According to one of the farmers interviewed, she previously experienced product rejection and one of the complaints that was made was the presence of pests on the vegetables. FM1 shared her previous experience:

> *"……when I first started newly, the complaint was that the ugu I sent was rejected from London. They said they found insects on the ugu and they destroyed it" (FM1).*

Subsequently the Nigerian Plant Quarantine Service (NPQS) has been enforcing regulations to monitor the supply chain of these products in order to control pests. Some of the monitoring activities of the NPQS entail regular visits to the export regulated farms for inspection, fumigation and product screening at the export cargo terminal. All the participants agreed that rejection has reduced as a result of NPQS recent regulations.

> *"NPQS come to my farm on Thursdays to do fumigation" (FM1).*

> *"Quarantine officers visit my farm on Wednesdays to supervise the fumigation to prepare goods for export" (FM2).*

> *"NPQS come every Thursday. They will be there when we are fumigating it. We don't have problems with quarantine. They monitor our farms very well" (FM3).*

High cost of finance

- Cost of farm inputs

Farm inputs are seed, fertiliser, chemicals, equipment and energy used in farm production. One of the farmers complained about the high cost of these inputs emphasising that it affects their profit.

> *"The seeds are costly. Now, a bag cost N60, 000 –N70, 000. We are spending a lot of money on fertiliser" (FM3).*

Summary

From the analysis of the semi-structured interviews with three farmers supplying fresh vegetables for export, the main themes that emerged as barriers in the supply chain of HPE are: the existing institutional framework, the market penetration issue, land tenancy issue, stakeholders' inadequacy, infrastructure and logistics issues, food safety and quality concerns and high cost of finance.

These themes will be compared with those that emerged from other stakeholder groups in the concluding section of this chapter. Chapter six will show a cross analysis section where sub-themes are clustered into main themes and those that occur more frequently across the stakeholder groups will indicate a validation of the evidence. The main themes will then be evaluated in the discussion section to show if they are consistent with other sources of evidence or if otherwise.

5.5 Perspectives of Exporters

Introduction

The Chief Executive Officer, Managing Director, Export Manager and Marketing Director of four exporting companies were interviewed using semi-structured questions (two in-depth and two telephone interviews) (see Table 5.3 for their characteristics).

These companies specialise in the export of farm products (fresh and dry foods) and other Nigerian products. In terms of fresh horticultural products, they export vegetables and a few seasonal fruits. Two out of four of these companies have their own farms while the other two depend solely on supplies from farms accredited by NPQS. However, the two exporting companies that have farms also rely on the NPQS accredited farms for fresh vegetables to complement their export demand.

Table 5. 3: Characteristics of the exporting companies' interviewees

Job Title	Company	Management Level	Years of exporting experience	Export volume per week	Export Destination	Educational Qualification	Gender	Age (years)
Chief Executive Officer	EC1	Top Management	5 – 10	Not disclosed	Hub in Holland and then distributed to Schengen States	Post-Secondary Education	Male	40 – 49
Managing Director	EC2	Top Management	21 and above (35 years)	1 – 1.5 tons	United Kingdom, United States of America and South Africa	Post-Primary Education	Female	40 – 49
Export Manager	EC3	Top Management	5 – 10 (10 years)	2 tons and above	United Kingdom	Post-Secondary Education	Male	50 and above
Marketing Director	EC4	Top Management	21 and above (21 years)	Not disclosed	United Kingdom	Post-graduate Diploma	Female	50 and above

These participants responded to semi-structured questions and discussed day to day experiences of their export transactions. Based on their responses, barriers inhibiting HPE by air from Nigeria are identified and discussed below.

Existing institutional framework

- Lack of incentives and support services

Government support entails incentives, supporting facilities and the required infrastructure provided by the government to enhance the supply chain of HPE. However, all the exporters interviewed explained that they are yet to receive such support from the government. Agricultural inputs such as seeds, fertilisers and other supporting facilities are not provided by the government so farmers and exporters spend a substantial amount of money in buying these inputs.

The Marketing Director at EC4 elaborated on the state of HPE and emphasised that government intervention is required for a better export performance and gave an example of how the Kenyan government provided support, liaising with the government at export destinations.

> *"Actually ours is still on the local level which actually you will not really call export if you ask me. That's why I said it's government to government thing because Kenyan government has to come in and discuss with government of whatever country they are exporting to and they tell them this this this and then they are able to tackle it. It's a government to government thing really. It's not something an individual can handle" (Marketing Director at EC4).*

When asked if they receive any kind of support from government, the following are the participants' responses:

> *"All the vegetables exporters as far back as I know; none of us have been given any opportunity or any help from the Federal government. We are still doing it from our own purse without any help from any organisation" (Managing Director at EC2).*

> *"The government support is yet to come" (Export Manager at EC3).*

- Lack of awareness of support services

On the other hand, the exporters were not aware, until recently, of the support available through some government establishments such as the Nigeria Export Import (NEXIM) Bank. The role of the NEXIM bank is to provide short and medium term loans to Nigerian exporters. When asked if they knew about the NEXIM bank and its role, the Chief Executive Officer at EC1 responded as follows:

> *"I heard that but I have not make any attempt to approach them; do they finance the farming or the purchase of the goods from the local market?" (Chief Executive Officer at EC1).*

The Managing Director at EC2 explained that they were not enlightened about the role of the NEXIM bank as a source of financial support to exporters.

> *"I heard about it when I went to a meeting with Lagos State government not quite long. For we vegetables exporters, none of us have been offered anything from that bank. They didn't come forward to us; they did not enlighten us about what and what is being needed, for it to be given. They didn't come to us at all. We don't know about NEXIM until very recent" (Managing Director at EC2).*

- Lack of collaboration

Another issue raised by the Chief Executive Officer at EC1 was the conflict of responsibility between two government agencies- NPQS and NAFDAC (National Agency for Food and Drug Administration and Control). The implication is confusion so there is a need to make their roles clear to exporters.

> *"When we export egusi, it was destroyed why? Because quarantine gave me phytosanitary certificate before but NAFDAC wrote to European Union advising that no other authority has any power to issue any certificate on health; that it is only them. That, that was what the law says. After the whole incident, they destroyed the egusi. When I reported to the quarantine, they got angry. They said when was that, why didn't we report to them, that they would fight it and get my goods out. That it is their right to issue certificate" (Chief Executive Officer at EC1).*

- Lack of implementation

Another related issue is that of the lack of implementation of promises made by the government. One of the participants shared his experience:

"I've raised this cooling system issue to Nigerian Export Promotion Council, the State government and Federal Ministry of Agriculture. I've raised it to NACHO themselves – their managers and they are always making promises" (Export Manager at EC3).

Infrastructure and logistics issues

- **Infrastructure**

One of the major problems is the state of infrastructure in Nigeria. To efficiently participate in the global horticulture value chain, basic infrastructure such as roads, rails, constant power supply, airports, communication and transportation are essential.

- Transport issues

Poor transport also hinders the smooth logistical flow of these perishable products thereby leading to inland transit delay. The Managing Director at EC2 and the Export Manager at EC3 stated that transport is one of the main challenges in the HPE supply chain and described their experiences as follows:

"At times we usually get delayed by the road safety officials – the VIO. They stop our vehicles on the road saying the vehicles used are not appropriate vehicle for transporting vegetables and at times the vegetables get to the airport late. And once it gets there late, the customs would have closed and they will say your shipment cannot go again" (Managing Director at EC2).

"The holdup will cause traffic jam when you are coming from the farm and this causes late delivery to NACHO warehouse" (Export Manager at EC3).

- Lack of cold storage facilities

A cold chain system is a value adding resource required to preserve and maintain the quality of fresh foods but this is lacking at the moment. The exporters interviewed (except one) agreed that they do not use refrigerated vehicles to transport products from the farm to the export gate because of a lack of funds and poor knowledge of post-harvest handling.

"Yes the means of preservation is water. When they put water on the leaf, it will just get alive. Yes it can preserve it but when you are at the airport exporting it, you have to take out the water. You have to dust it very well. If there is water left there, it will start to decay" (Chief Executive Officer at EC1).

Meanwhile all the interviewees emphasised the lack of cold storage facilities at the airport and also a lack of refrigerated vehicles as significant constraints to HPE development.

> *"There is no cooling system - no cooling rooms, no cooling vans" (Export Manager at EC3).*

Market penetration issue

- Lack of collective action

Collective action is when a group of people work together to achieve a common goal. It is one of the approaches adopted by small holders in developing countries to efficiently export horticultural products to the global market. However, all the participants indicated that export transactions have always been through individual efforts because a co-operative approach does not exist among farmers and exporters currently involved in HPE. One of their responses is as follows:

> *"In Nigeria we are not organised into co-operative society. This little one we are doing is individual effort and individual effort can never take a country so far" (Marketing Director at EC4).*

The Marketing Director at EC4 therefore expressed her concern in a statement seeking for assistance in this regard:

> *"I don't know may be somebody needs to help us, call us together and organise us" (Marketing Director at EC4).*

- Inadequate supply

Exporters rely on two to three farmers to meet their export demand.

> *"I don't have enough farms to supply all these products" (Export Manager at EC3).*

The Managing Director at EC2 stated that they would have considered DHL as an alternative cargo airline but they are not able to meet the volume specified by DHL for them to take advantage of cheaper freight charges.

> *"DHL's charge is much better than BA. DHL too is a good airline to use but the problem we have is that you have to bring up to 3000kg before they can accept your goods to fly to UK. When your goods get to Belgium because DHL goes to Belgium, it will be inspected in Belgium and it will be trucked directly to London. First stop for DHL is Belgium; they are very adequate, on time and they are very good but the problem we have with them is that they want us to bring vegetables up to 3tons. Only one person cannot do that" (Managing Director at EC2).*

The Marketing Director at EC4 gave the following response when asked: Why have you not considered other products like flowers and maybe other fruit apart from the ones eaten by Nigerians?

> *"Because we can't do everything at the same time. This is what we are doing now and you know it's a lot already; you can't be doing vegetables and be doing flowers. If you do, you won't be able to meet up with the demand" (Marketing Director at EC4).*

- Niche market

The Chief Executive Officer at EC1 indicated that horticultural products exported from Nigeria target the African market and this to a large extent determines the type of products exported to international markets.

> *"Our targets are not Europeans; our targets are fellow Nigerians that live in Europe and America. One thing I want you to know is that those Nigerian products are being used by Nigerians not the Europeans -Nigerians mainly. They don't eat any other food in Europe" (Chief Executive Officer at EC1).*

He also explained why products mainly consumed by Nigerians are the export products.

"We don't only export our farm products; we also export other products from Nigeria. All Nigerian products including our drinks, maggi, all Nigerian company products. We export even aboniki, dudu osun soap because Nigerians are fanatics in their things, they always want their things even if the Europeans say it's not good, it's fake. You know that feeling of home. They will like close-up toothpaste even though they have better ones there" (Chief Executive Officer at EC1).

Apart from targeting a niche market, the Marketing Director at EC4 explained why Nigerian horticultural products are not yet in the supermarkets in the United Kingdom. She indicated that exported horticultural products are not yet meeting the requirements set by the supermarkets. Market penetration remains a challenge for vegetable exporters; hence they have limited export destinations. The Marketing Director at EC4 explained that UK is their main export destination.

"You have to search for customers because if you don't have customers and you start doing fresh vegetables, you'll run into losses. It's not something you can just say let me do it. We tried Germany sometime but we have not really perfected that end" (Marketing Director at EC4).

The Export Manager at EC3 indicated that international market presence is essential to be able to penetrate the horticulture market in the UK.

"You cannot export to UK if you don't have somebody in the UK. People staying over there need to breakthrough in the market. Many people have come from the UK and registered with the NPQS but cannot penetrate through the market" (Export Manager at EC3).

Stakeholders' inadequacy

- Lack of export knowledge

When asked, why is Nigeria not exporting horticultural products (like carrots and green peas) that can be consumed by non-Nigerians, The Export Manager at EC3 responded as follows:

"I don't think we have those things in farms here. It's what you know that you can go into. Like carrots and apple now, there is a climate required to farm them" (Export Manager at EC3).

Some exporters either lack knowledge about the export process or deliberately boycott the export process and this usually leads to the rejection of their products.

"And many of our people in business you know this person is doing this business and you want to join and they don't follow proper process" (Chief Executive Officer at EC1).

The Marketing Director at EC4 complained about unqualified exporters that do not follow the appropriate export process. These exporters have a low level of education and are ignorant of export requirements.

"That's the thing but the painful aspect of it is that you go through all these troubles to make sure that things are done properly, but you know all these dick and harry that jump into it; they don't go through all these things, don't go through all these expenses and we sell in the same market. And when they come they'd say oh! I can give you cheaper than EC4. So sometimes you are almost discouraged and you feel like some others cut corners but if you have conscience you know that it's not the right thing to do" (Marketing Director at EC4).

- Poor network relationship

A poor network relationship exists in the supply chain of HPE. The Chief Executive Officer at EC1 complained about the attitude of air freight forwarders.

"Freight forwarders just collect their money; they will tell you their business ends at the airport there. Once your product is on the air, it's not their problem" (Chief Executive Officer at EC1).

Food safety and quality concerns

- Product standardisation

Standardisation is a major constraint in Nigeria's HPE supply chain. All the participants agreed that the NPQS ensures pest free products are exported. NPQS regularly monitors the activities in the supply chain through their regulations from the point of production to the export gate.

"If it is not certified by the plant quarantine after the examination, it will not be exported. It's only the ones that have the phytosanitary certificate that are allowed out of Nigeria" (Managing Director at EC2).

"Like the NPQS regulations now, you cannot go and get vegetables from anywhere and bring it to the airport for export. The farm must be known by the NPQS. Then

they escort the goods to the airport after harvesting for export" (Export manager at EC3).

Despite the NPQS monitoring, the Chief Executive Officer at EC1 indicated that the poor certification process still results in confiscation of exported products in global markets because the quarantine needs to upgrade its services and the certification process to conform to international standards.

"Quarantine bought a new machine for food analysis test but nobody knows how to use it at that time. They told me that test is very important for Nigerian market to move. I don't know if it's good now. And those are the agencies that are supposed to help you for those exports. They are government agencies equipped to help Nigerian export, particularly agric. export because they are plant quarantine but they are not living up to what is expected of them. What they do is physical check if there are ants inside the leaves. They only check physically using microscope; they won't test those things and they will give you certificate with physical check. Yes, the main problem we have is certification. So the hindrance we have on fish is still certification. And the hindrance we have in exporting our egusi and beans is the same process" (Chief Executive Officer at EC1).

The Managing Director at EC2 and the Export manager at EC3 raised a point that the rigid standards lead to rejection by the Department for Environment, Food and Rural Affairs (Defra), UK.

"The Defra normally come up with ewedu and ...they normally say they are not certified at times and they normally confiscate it. At times, you cannot predict the UK people, their standard being their standard no matter your explanation to them. So at times you meet it; at times you don't meet it. " (Managing Director at EC2).

The Export manager at EC3's view is that it might not be easy to totally eradicate pests considering the state of horticulture production in Nigeria.

"They use to seize the goods when they are not satisfied. One thing they fail to understand is that Nigerian farms are not 100% free of pests. It's not easy to get 100% pest free in Nigeria except until when government fulfil their promise to us or provide us a land that is separate from other land. I know possibly in UK they use to have controlled farms but it is not same in Nigeria. Government made

promises to us that they will give us a land that will only be for export products. If they can fulfil their promise and they provide this for us, then pest can be easy to control." (Export manager at EC3).

Contrary to the common view about non-compliance to standards being the reason for confiscation of exported products, the Managing Director at EC2 noted that they perceived the rejection of Nigerian horticultural products as an act of humiliation because other African countries such as Ghana receive preferential treatment.

"At times we call it a sort of humiliation. We had meeting with the Defra eight years ago about the way our vegetables are seized. But in the last one year again, they have started confiscating our vegetables and we intend having another meeting so that they can be on the soft spot. We noticed that food coming from Ghana, they don't tamper with them. They don't seize Ghana products like Nigeria products" (Managing Director at EC2).

- Pest control issue

Pest control is a challenge in the HPE supply chain in Nigeria. According to the Managing Director at EC2, the relevant organisation in the UK visited Nigeria some time ago advising exporters about the reason for the confiscation of their products while they also explained the food export requirement.

"About three years ago, they purposely came to Abuja to do a lecture for we Nigerians – what their requirements are, to remind us and inform us why our foods are being confiscated over there. Are the requirements being met by most exporters?" (Managing Director at EC2).

Nevertheless, pests are still detected despite exporters' deliberate efforts to eradicate them and ensure that only pest free products are exported.

"Incidentally after all the effort and all that, sometimes when it gets to the UK, they still tell you oh! They saw white fly and we've done all that we know can be done. So why is there still white fly? So that's the question we've not been able to explain" (Marketing Director at EC4).

The Marketing Director at EC4 was the only one who discussed staff training and some of the supply chain strategies they apply to ensure a better pest control. She highlighted them as follows:

> *"We fumigate from the first three to four weeks. We start fumigating because of insect. We partition the farm into blocks A, block B, block C for traceability. If we are going to harvest in block A today, we know it's block A so that when the health officers inspect it peradventure they see any white fly, we will be able to trace back from the block we harvested, then we know whether the block was not properly treated or something went wrong. So that is why we have them in blocks for traceability" (Marketing Director at EC4).*

> *"We train our out growers because we have people that grow for us as well because what we produce in our farm is not enough so we have two to three out growers. We found out that some farmer don't even know the measurement of the chemical. If they go to their farms and see many insects, they just add more chemical; they'd say they want to make the chemical to be strong so they can kill it. We involve them in the training as well so that they know how to treat their vegetables, to handle their farms and all that. We also invited some of our quarantine officers to join us because some of them too need to be involved. We involve them; the training was held in our company in the presence of the quarantine officers" (Marketing Director at EC4).*

> *"We have people that come to train the workers on insecticides, hygiene, how to fumigate, the measurement of the chemical, and then the uniform to wear for fumigation and all that. All those training we undergo. People came from Kenya to train us. You know Kenya is doing very well in export" (Marketing Director at EC4).*

Moreover, the pest control difficulty extends to other food products exported from Nigeria such as beans. For example, the Managing Director at EC4 emphasised the need for the Nigerian government to liaise with the relevant agencies in the UK to understand the Maximum Residue Level (MRL) of pesticide permitted on each export product because the pest control issue is a major reason for confiscation of Nigerian food products.

"Our government is supposed to speak with them in the UK. There's something they call MRL - the level that is supposed to be on the seed. So it's like each country has its own level but for Nigeria, nobody is talking nobody is saying anything. So you find out that the level of the MRL allowed can be permissible coming from our country but because nobody is talking, when it comes, they tell us it is high; we are going to seize it. It's majorly a government to government thing. It's not something an individual can handle" (Marketing Director at EC4).

High cost of finance

- <u>High transaction costs</u>

High transaction costs discourage exports according to all the interviewees because these increase the price of the products. The effect of an increase in the price of a commodity in the global market is that it reduces an exporter's chances of gaining competitive advantage. In Nigeria, transaction costs include production costs, logistics costs and trade costs.

"From Nigeria side, we have the problem of freight. The freight cost is very expensive compared with Ghana, compared with other neighbouring countries. They are much cheaper in Ghana, cheaper in Cameroon but the prices given to Nigeria is at exorbitant prices which is affecting the sales of our vegetables when it gets to the UK. You know when you are doing a business, for you to make profit. But the airlines are the ones that are taking all our profit; airline charges are high. The overall charges are very high. Other things added make it N313 per kg though official charge is N80" (Managing Director at EC2).

The Chief Executive Officer at EC1 pointed out that Nigerian products may not be able to compete in global markets because of the effect of high transaction costs while the Managing Director at EC2 expressed the view that a reduction in transaction costs can reduce the price of Nigerian products.

"Our vegetables can become cheaper if the costs of production and export are reduced" (Managing Director at EC2).

- Lack of access to loans

Exporters also complained that they lack access to loans because of high interest rates.

> *"I only approached my own bank and their interest rate is very high. But I know there is an Agric bank that helps farmers; I have not tried" (Chief Executive Officer at EC1).*

Export operational challenges

The Marketing Director at EC4 complained that export systems are not standardised in Nigeria and her view is reflected in the quote below:

> *"The export system is not really regularised; every Dick and Harry jump into it" (Marketing Director at EC4).*

- Rigorous export process

According to the interviewees, farmers and exporters undergo a rigorous export process.

> *"A farmer will have to undergo all these rigorous process before they export their products. Make it simple to encourage them. Federal government already told them to encourage farmers but they are not" (Chief Executive Officer at EC1).*

- Limited working hours

The limited working hours at the export terminal was stated by the Export Manager at EC3 as one of the constraints to HPE. The customs open by 9am and they close by 4pm so shipments are loaded into the containers too early whereas the flight time is still late in the night.

> *"NACHO timing schedule is not ok. Goods are rejected after closing of the shed by 4p.m so if your goods come after 4p.m, you will carry it back home. No mercy on that one" (Export Manager at EC3).*

- Bribery and Corruption

Bribery and corruption are major deterrents to exporting. Marketing Director at EC4 expressed her view as follows:

> *"The local barriers are there. Too many charges from customs from this from that, it ought not to be so. There's high exploitation. After you have undergone rigorous*

export procedure, a custom officer will still expect you to give him some amount per kilo (Kg) which is exploitation" (Marketing Director at EC4).

The Managing Director at EC2 also raised a complaint about the existence of too many agencies at the export terminal executing similar roles.

"And we have problem of so many agencies– action of bribe before you export vegetables from the airport"(Managing Director at EC2).

Airline Market Structure

- Monopolistic market

A barrier to entry is the competition strategy employed by the British carriers to restrict competition. The Chief Executive Officer at EC1 indicated that this was unfair. At present, the air transport market for horticultural products from Nigeria to the UK is a monopoly. According to the respondents, British Airways (BA) is the major carrier of horticulture products. Although BA and Virgin Atlantic have direct flight advantages over other airlines, their flight departure time differs. BA leaves Lagos at 23:30 and arrives at London Heathrow at 05:00; Virgin Atlantic departs from Lagos at 11:00 and arrives at 16:55. As a result of limited working hours at the NACHO export terminal, the flight time for shipping fresh horticultural products only suits BA. Meanwhile, other airlines are not appropriate because of indirect flights which can have a negative effect on the quality of these perishable agricultural products.

According to the exporters, there is a lack of competition among the airlines and this is the reason for the high freight cost charged by BA.

"The vegetables that come by air, the major carrier is BA and their charges are also high because they don't have competition so they just do it anyhow. You know and nobody is also saying anything. If you wanted to do may be 2 tons, because of the cost you'll say no, I can't afford to do it so let me reduce it to 1ton or even ½ a ton which is also limiting export. BA has monopoly of everything, that's why they are very high these days" (Marketing Director at EC4).

The Managing Director at EC2 gave a recent experience with BA's s poor handling service.

> *"Of recent, we have problems with BA. BA used to have a particular agent in London that we normally pick our vegetables from but unfortunately they have a new agent that is not good in handling vegetables. BA is going to have a problem in the near future when everybody will have to look for a better flight that can handle our vegetables well" (Managing Director at EC2).*

The Export Manager at EC3's view is different. While other participants from other exporting companies mentioned that there is no competition among the airlines, his response is as follows:

> *"No problem with the airlines" (Export Manager at EC3).*

Weather

Seasonality is also one of the challenges encountered by exporters. The rainy season in Nigeria affects the quality of the products because they become wet thereby causing deterioration when not handled appropriately.

> *"And when it is rainy season, we always have problems too. Because if the vegetables are not dry, they normally get spoilt before they get to the UK" (Managing Director at EC2).*

The Managing Director at EC2 mentioned the effect of weather on the air transport of fresh horticultural products.

> *"They might have technical problem on ground. Or if the weather is not ok at the other side during the winter, they normally have technical problem. It's not common, it might be once in two or three years" (Managing Director at EC2).*

Neglect of agriculture

- Dependency on oil

Agricultural resources are prominent natural resources in many developing countries. Some countries focus on agriculture to develop their economies but according to the interviewees, Nigeria relies more on its petroleum resources, neglecting agriculture even though the country has abundant agricultural resources. Fresh flowers, fruit and vegetables are valuable products through which some developing countries including African economies (such as Kenya and

Ethiopia) have been able to participate in the global horticulture chain. The following expressions by two out of the four exporters interviewed indicated that the neglect of agriculture in Nigeria is one of the barriers inhibiting HPE:

> *"A big country like this with vast land everywhere; you cannot invest in farming? It's only oil, oil, oil! Farmers are the richest people in this world but people don't know. Even the crude oil can dry but farmers' products never dry. You continue to farm and you expand. It's just like one taking a fruit, a vegetable and eats and then gives to the land again and then the land will produce something; it's a cycle. That is why farming is good. The richest in the world are farmers" (Chief Executive Officer at EC1).*

> *"It's just that Nigerian government overlook agriculture; they focus on oil! oil ! oil! If they can put half of what they are putting into oil into agriculture at least we'll be there in no time" (Marketing Director at EC4).*

- Lack of human resources

According to the Marketing Director at EC4, Nigerian citizens have a poor attitude towards farming. Even though the opportunities (such as vast agricultural lands, favourable climate, large domestic market, unexplored export market, increased consumption) are available, the lack of quality human resources namely farmers, limits the potential in this sector of the economy and this she exclaimed repeatedly:

> *"We don't have enough people farming! People are lazy to farm. The land is there but there are no farmers and the thing is that even to farm to sell locally is also a big market honestly but there are no farmers! We only export to UK but there are other countries even in Europe here, other areas that have not been explored at all" (Marketing Director at EC4).*

- Import-oriented economy

The Chief Executive Officer at EC1 explained the fact that Nigeria is an import-oriented country. The belief is that foreign products are better than locally produced ones so they are not driven to engage in the production of agricultural products since they can easily purchase imported ones.

"They import ogbono, they import egusi. If you go to the market today, ask them where is this ogbono from? They will tell you; they don't hide it. Even Cotonou here, their own pineapples are even exported to Nigeria. All the pineapples you see here, it's Cotonou. Even the particular Nigerian pineapples, people don't eat them and they said Cotonou is better. It's sweeter, ours is sourer" (Chief Executive Officer at EC1).

Land tenancy issue

According to the Export Manager at EC3, dedicated farmlands are required for the production of exported horticultural products in order to ensure better pest control. Land however, is one of the major challenges.

"Land issue is number one. We don't have enough land for farming even though Lagos state have promised us provision of land, they have not done anything yet" (Export Manager at EC3).

It is important to note that the exporters interviewed reside in Lagos state, an urban centre and the commercial heart of the country where agricultural land is limited. In other words, the land issue may not be regarded as a barrier if production takes place in rural areas.

Domestic market

The Marketing Director at EC4 indicated that horticultural crops have not been well developed in the domestic market and this also adversely affects HPE.

"..... Like the green beans that is coming from Kenya, we have those kind of beans back home but it's not been developed" (Marketing Director at EC4).

Security issue

Nigerian products undergo a strict security process and this indicates a lack of trust according to the interviewees.

"In British Airways, they do too much checking. No trust in anything coming from Nigeria (Chief Executive Officer at EC1).

Summary

According to the exporters interviewed, the themes identified as barriers in the supply chain of HPE by air in Nigeria are: existing institutional framework, infrastructure and logistics issues, market penetration issue, stakeholders' inadequacy, food safety and quality concerns, high cost of finance, export operational challenges, airline market structure, weather, neglect of agriculture, land tenancy issue, domestic market and security issue.

These themes will be compared with those identified by other stakeholder groups and will be evaluated in Chapter six.

5.6 Perspectives of Air freight forwarders

Introduction

An air freight forwarder plays an active role in the export of horticultural products. The participants in the focus group and in-depth interviews elaborated their general roles as freight forwarders in international trade. According to them, their roles are to:

- prepare the proper documents required both internally and internationally to forward goods (both the vegetables and other food stuffs).
- act as middlemen between the shippers and the consignees in the export and import business
- interface between the shippers and the customs, the airlines and other relevant agencies ensuring shipments are appropriately delivered and received.

Air freight forwarders are popularly known as export agents in Nigeria and their major role is to prepare documents required for export such as the Nigerian Plant Quarantine (NPQS) certificate, the Certificate of Origin (if requested), the invoice and packing list. It is the responsibility of an exporter to start the horticultural product export process. Exporters must register their companies with the Corporate Affairs Commission (CAC), Nigeria Export Promotion Council (NEPC) and NPQS. They should also register and complete the Nigeria Export Proceeds (NXP) form (Appendix 5.7) before an air freight forwarder gets involved. According to the participants, NPQS is a major institution that is actively involved in the HPE supply chain right from the farm to the export gate. NPQS issues a phytosanitary certificate which is the most important certificate in terms of food products designated for export.

The participants of the focus group interview are three Chief Executive Officers, two Managing Directors and two Operations Managers. The Managing Director who participated in an in-depth semi-structured interview has won a British Airways' award twice as the best freight forwarder of perishable goods in 2006 and 2007. These participants have at least 5 years' experience (see table 5.4 for their characteristics) and they describe their experiences in relation to HPE from Nigeria.

Table 5. 4: Characteristics of the air freight forwarding company's interviewees

Job Title	Company	Years of work experience	Educational Qualification	Gender	Age (years)
Managing Director	FFC1	5 – 10 years	Post-Secondary Education	Male	40 – 49
Chief Executive Officer	FFC2	21 years and above	Post-Secondary Education	Male	40 – 49
Managing Director	FFC3a	11 – 15 years	Post-Primary Education	Male	40 – 49
Operations Manager	FFC3b	5 – 10 years	Post-Secondary Education	Male	40 – 49
Chief Executive Officer	FFC4	16 – 20 years	Post-Secondary Education	Male	40 – 49
Chief Executive Officer	FFC5	11 – 15 years	Post-Primary Education	Male	40 – 49
Operations Manager	FFC6	5 – 10 years	Post-Secondary Education	Male	30 – 39
Managing Director	FFC8	16 – 20 years	Post-Primary Education	Male	40 – 49

Consistent with the aim of this research, these air freight forwarders indicated that the following barriers hinder HPE from Nigeria:

Existing institutional framework

- Lack of supporting policy and enabling environment

Responses from the participants indicated that Nigerians rely on the government for quite a number of issues to be resolved. When the focus group members were asked why HPE has not expanded in Nigeria, one of their responses was:

> *"……it's our government; they are not doing what they should do" (Managing Director at FFC1, Chief Executive Officer at FFC2).*

According to the focus group participants, Nigerian government policies are not enabling exports therefore horticultural product export lacks government support. There is no enabling environment that could encourage citizens to engage in exportation. Although there has been a slight increase in the volume of exports as a result of a little stimulus to expand vegetable exports, adequate support is still required from the government. For example, the Nigerian government is expected to provide better road infrastructure that can enhance smooth logistics.

"……If government wants to help us they should assist us in all these areas: area of transportation" (Chief Executive Officer at FFC2, Chief Executive Officer at FFC4).

- Lack of policy implementation

According to the Managing Director at FFC1 and the Chief Executive Officer at FFC2, government promises are always stated on paper, radio and television yet they lack implementation. When asked about the challenges the air freight forwarders face in the documentation process, the Chief Executive Officer at FFC5 stated that the instability in government procedures affects the process.

"Rules and regulations do change and when it changes, it affects a bit" (Chief Executive Officer, FFC 5).

- Lack of Research

The Chief Executive Officer at FFC 2 pointed out the fact that the Nigerian government does not liaise with research institutes such as the International Institute of Tropical Agriculture (IITA) to improve agriculture.

"Like Nigeria institute of tropical Agriculture at Ibadan, May be you know IITA. It seems our government don't liaise with those people because I work there for almost nine months and I saw many things those people are doing research on. And Nigerian government don't even liaise with them to see how we can improve on our agriculture, to see how we can do things that will be exportable in Nigeria. They just leave those people there; they are doing their own and Nigerian government too are doing their own" (Chief Executive Officer at FFC2).

While the Chief Executive Officer at FFC5 complained about the lack of research, the Chief Executive Officer at FFC2 argued that IITA has research capacity although the Nigerian government is not exploring and maximising the opportunities therein.

"There are no more researches. They don't do research again in Nigeria. I don't think we even have a laboratory in this country" (Chief Executive Officer at FFC5).

"IITA is doing research. They have even improved more than the time I worked there. I have friends working there" (Chief Executive Officer at FFC2).

The Chief Executive Officer at FFC2 narrated his experience about IITA's research capacity in the quote below:

> *"There was one customs officer that just retired last year. They know him (pointing to his colleagues). The man was thinking of what to do. He said he has about ten acres of land at Ibadan. I then told him to go to IITA may be they will tell him what to do, then he went there. On getting there, they followed him to that land and took the soil sample for testing. After that, they told him he can plant plantain on it. As at last month when I called the man, the man told me the farm is doing very very very well. I was the one that told him to go there because I worked there for almost nine or eleven months" (Chief Executive Officer at FFC2).*

Infrastructure and logistics issues

- **Infrastructure**

Infrastructure refers to basic amenities required to enhance HPE.

- Bad roads

Nigerian roads are bad and this has been causing inland transit delays.

> *"……in Nigeria here we have bad roads. You will be in the holdup wasting a lot of time" (Chief Executive Officer, FFC4).*

The participants pointed out that the inland transit delays are caused by bad roads

> *"Therefore some of them before they get here, the NACHO or the customs will be complaining that they have closed for the day" (Chief Executive Officer at FFC4).*

- Poor power supply

The lack of constant electricity supply prevents the export of horticultural products because of the nature of these products. Many facilities that require energy to function are rendered inoperative.

> *"There is no constant power supply" (Managing Director at FFC1, Chief Executive Officer at FFC2, Chief Executive Officer at FFC4, Operations Manager at FFC6).*

- Lack of cold storage facilities

While the Managing Director at FFC1 indicated that cold room charges had to be reduced, the Chief Executive Officer at FFC 5 asked other participants if there is a cold room since the one they know of is not working. All the participants agreed that though a cold room exists, it is not operational.

> *"NACHO has inoperative cold room. In the event when you miss your flight, they can refrigerate it for another day but this time, it's going to spoil because there's no way you can keep them. They are perishable products, if they cannot meet up with the schedule, it has to be refrigerated but unfortunately, they are not having that" (Managing Director at FFC1).*

- Poor Packaging

Although packaging has improved from what it was in the previous years, there is still a need for improvement. Perforated cartons are now used instead of cane baskets.

> *"Because in the years past, you will see that our packaging, I think vegetable at that time they were using baskets. So they now said that- is there any way they can provide better packaging? It was then they come up with using perforated carton, not seal up carton. But since then, I don't think there is much complaint" (Chief Executive Officer at FFC 2).*

Market penetration issue

- Inadequate supply

The interviewees indicated that the quantity of horticultural products supplied for export at the moment is lower than the demand in the international market. Therefore, there is a need to increase the supply of vegetables produced.

> *"It's just that we have to increase the quantity because the ones we export, they are not even enough for our people over there. So it cannot go to the supermarket" (Managing Director at FFC1).*

The Chief Executive Officer at FFC 2 explained that since the current supply cannot fulfill the demand of Nigerians in the UK, it is difficult for them to target other consumers in the international market.

"…….. but when you look at the population of Nigerians there, it's very hard (Chief Executive Officer, FFC2).

The response by Managing Director at FFC1 reflects his perception of products sold to the supermarket.

"It's like the ones that are being delayed go to supermarket. The ones that are readily available for people to take, that they are even waiting for the arrival cannot find its way to the supermarket where they have to be in freezer for some time. Ours, the customers are already waiting. Nigerians are already waiting to receive. So it cannot find its way to the supermarket. That is why you don't find them there" (Managing Director at FFC1).

- Niche market

Horticultural products exported from Nigeria to the UK are mainly vegetables consumed by Nigerians. This is because the main focus of the HPE is to meet the need of Nigerian citizens abroad and not the international market.

"Yes our products are mainly for African market over there. It should be because they are all grown in Nigeria and what is grown in Nigeria, is meant for Nigerians or others that are interested in eating Nigerian foods" (Chief Executive Officer, FFC5).

- Lack of collective action

All the participants indicated that although there is a union of vegetable exporters, there is no co-operative. The lack of a co-operative has hindered both the farmers and exporters from tapping international trade benefits.

"There is no co-operative society, what we have is union" (focus group participants).

The Chief Executive Officer at FFC 5 elaborated that the purpose of the union is to ensure quality products are exported therefore only members participate in export while non-members are deprived of an exporting opportunity.

"They have exporters union not really a cooperative. You must be a part of the union. They agree in one voice to curtail those that are not registered. The purpose

of the union is to curtail those that are not with them in order not to export what is not of a good standard" (Chief Executive Officer at FFC5).

Export operational challenges

- Documentation issue

The Managing Director at FFC8 explained that exporters cannot keep up with the required documents for export and it is the role of freight forwarders to guide them. However, some of the freight forwarders don't know about some documents therefore they cannot guide them to prepare accurate documents. For example, NXP is a form of export incentive scheme which should be completed to bring returns to exporters but some air freight forwarders either do not know about it or ignore it.

"Some vegetable exporters don't have the documents because they don't understand the system. They don't want to do it because some of them don't have the document required to apply for NXP form and their freight forwarders don't encourage them to have it. "Some of the freight forwarders don't know it. That is where you know the experienced ones" (Managing Director at FFC8).

He also mentioned the fact that some documents are to be forwarded to importing agents but due to poor internet and communication networks, a delay usually occurs.

- Bribery and Corruption

Bribery and corruption practices are prominent. The participants complained about the existence of many agencies at the export terminal and it is obligatory for exporters to have their documents checked and signed by each of them. Meanwhile there is a duplication of roles among these agencies and they are mainly there to extort money from the exporters making the export process an undesirable, complicated experience.

"Corruption is part of it. Whatever goods you want to send, you have to bribe through to get your cargo moving. If you don't, your cargo will be there and you will pay for extra time if shipment is delayed. So many agencies are involved." (Managing Director at FFC8).

- Non-regularised export process

According to the Managing Director at FFC8, the export process in Nigeria is not organised because there are quite a number of issues within the process.

> *"It is a poor and unorganised system" (Managing Director at FFC8).*

He complained that they are facing some challenges with the Nigerian Customs Service, NACHO and British Airways.

The Chief Executive Officer at FFC5 also explained that Nigeria as a country is not forward-looking and that is why agricultural crops exported (such as cocoa and rubber) in the 1970s are no longer thriving.

> *"We are not pyramid, now they are no more there! Rubber, finish!" (Chief Executive Officer at FFC5).*

- Rigorous export process

The air freight forwarders explained the rigorous export procedure. Some of their views are as follows:

> *"If one wants to go into the business of export of fresh vegetables, first you must have registered your company and get approval from NEPC, then you apply to NPQS. Upon given the approval, they want you to register with them because they don't just want you to go to the open market to buy vegetables for export. These farmers are registered with NPQS and they have to harvest on the day of exportation. Mostly the NPQS goes for fumigation against the next exportation. So these are things that must be done before you go into this business. It is very important" (Operations Manager at FFC3b).*

> *"For example, there is a recent circular from Nigeria Customs Service that all the shippers of vegetables and foodstuff must have NXP. This is a document that is not easy to get" (Managing Director at FFC8).*

Airline market structure

- Monopolistic market

The participants explained that BA is the major carrier because it operates a direct flight and its time of departure from Nigeria and time of arrival at the export destination is preferable compared to other airlines. This therefore places BA at an advantage over others leaving freight forwarders with no better alternative even when BA's handling service is poor.

> *"You don't have any option than to use them so that your goods can arrive on time but they lack facilities too. British Airways have poor handling system and it also affect the goods. Before the arrival of the vegetables in the UK, it would have been wet" (Managing Director at FFC8).*

- Limited air connectivity

A direct flight is obviously an issue. According to the focus group participants, there might be demand from citizens in other parts of the world but there are no airlines to connect to those places.

> *"One of the things that is not enabling export is that some countries that will want our vegetables also, do not have the airline to connect the flights" (Operations Manager, FFC 6).*

Stakeholders' inadequacy

- Lack of knowledge

The response by the Managing Director at FFC1 indicated that ignorance of soil suitability is also one of the challenges in the supply chain of HPE.

> *"And in the issues of flowers, I don't know why we are not properly involved in the export of flowers whether our soil is not favourable for flowers. May be some of the flowers are not favourable with our weather or the soil" (Managing Director at FFC1).*

Moreover, exporters lack good export knowledge even though they have many years of exporting experience. Horticultural products are high-value agricultural products that require

special handling but exporters lack product knowledge; the export requirement and poor packaging are also part of the challenges of HPE from Nigeria.

> *"They lack knowledge of perishable export. Majority of them don't know the value of the vegetable. They just go into the business because others are doing it" (Managing Director at FFC8).*

Exporters are also ignorant and so do not maximise the opportunities available to them.

> *"British Airways introduce what they called 'prioritise'- a new system of charging the exporters in that year. This system enables payment per pallet instead of per kilogram. Exporters did not like it. They pay more because of lack of knowledge and awareness (Managing Director at FFC8).*

- Poor network relationship

Five of the focus group participants indicated that they are not always aware of the rejection of products in the export market. This shows there is no communication along the supply chain.

> *"So we are not getting complaints at all or the feedback that what you sent for us we can't sell" (Managing Director at FFC1).*

However the Managing Director at FFC8 explained that some of the air freight forwarders have a nonchalant attitude and are therefore ignorant about the product rejection faced by exporters.

> *"Some air freight forwarders are not concerned about exporters' success" (Managing Director at FFC8).*

Food safety and quality concerns

- Product Standardisation

Nigerian horticultural products undergo rejection in the export market especially in the UK.

> *"For example, my exporter had some products like ewedu destroyed last few weeks. Products that mostly face rejection are ewedu, efinrin, bitter leaf and water leaf because they are not well treated" (Managing Director at FFC8).*

Meanwhile, the Managing Director at FFC1 emphasised that Nigerian products should not be rejected since the target consumers are mainly Nigerians.

> *"……...the acceptability of our product in UK cannot be enforced or controlled by Nigerians even in the UK or here because it's a matter of choice" (Managing Director at FFC1).*

However, there was a mixed reaction among the focus group participants. While some of them denied the fact that the products faced rejection, one of them agreed.

> *"I know there are challenges they are having there in terms of clearing" (Managing Director, FFC 3a).*

Neglect of agriculture

The focus group participants indicated that the Nigerian government needs to focus on agricultural development and empower the farmers to enhance their productivity because there has been a lack of investment in farming.

> *"Government should try and improve on our agriculture and give loans to farmers so that it can be mechanised because these ones are manual inputs. They are supposed to make it mechanised" (Managing Director at FFC1 and Chief Executive Officer at FFC2).*

Land tenancy issue

The focus group participants indicated that although few farmers owned their land, most of them farm on rented land.

> *"They rent land" (Managing Director, FFC 3a).*

Weather or soil suitability

There was no consensus among the focus group participants on the view relating to the suitability of Nigeria's weather or soil for the production of some of the horticultural products. Their views are as follows:

“You know some products like apple; we can't grow apple on every soil; weather or the soil. I don't know why we are not properly involved in the export of flowers” (Managing Director at FFC1).

“It's favourable, it's our government because all these things are been exported in Ghana” (Chief Executive Officer at FFC2)

Summary

The air freight forwarding company participants have discussed their experiences in relation to the state of HPE. Through a focus group and an in-depth semi-structured interview, they indicated that the existing institutional framework, infrastructure and logistics issues, market penetration issue, export operational challenges, airline market structure, stakeholders' inadequacy, food safety and quality concerns, neglect of agriculture, land tenancy issue and weather are all barriers to HPE from Nigeria.

Meanwhile these participants are optimistic that if relevant stakeholders do things correctly and the government also put the right measures in place, the horticultural product export sector can be enhanced.

The above themes will be compared with views of other stakeholder groups and will be evaluated in Chapter six.

5.7 Perspectives of Aviation Operators

Introduction

The Cargo Manager, Business Manager, Cargo Operations Manager, Customer Service Manager and Cargo Operations Supervisor of four airlines and one ground handling company were participants in in-depth semi-structured interviews (See Table 5.5 for their characteristics). According to them, they are regulated by International Air Transport Association (IATA) and International Civil Aviation Organization (ICAO) standards. Therefore, they comply with aviation industry practices. For example, they use IATA standard airway bills (Appendix 5.2).

Two ground handling companies have been contracted to provide handling services to airlines therefore they provide all cargo handling facilities at the export terminal (see Appendix 5.3 for export cargo operations) while the ULDs (unit load devices) are owned by the airlines. Some of the facilities at the export cargo terminal are weighing scales, an explosive trace detector (ETD), x-ray equipment, a cold room, forklift, tractor and dollies (a dolly is a trolley used for easy loading and unloading of ULDs and pallets). The security and documentation aspects, however, are the responsibility of the airlines, customs and other relevant agencies.

The participants indicated that horticultural products (fresh vegetables and few seasonal fruit) are among their perishable cargoes but they have never transported flowers from Nigeria. They discussed their air cargo operations during the interview.

5.7.1 Air cargo operational procedure for horticultural products' export (HPE)

The air cargo operations (Figure 5.4) from the time of a flight reservation to the time of aircraft departure are described below:

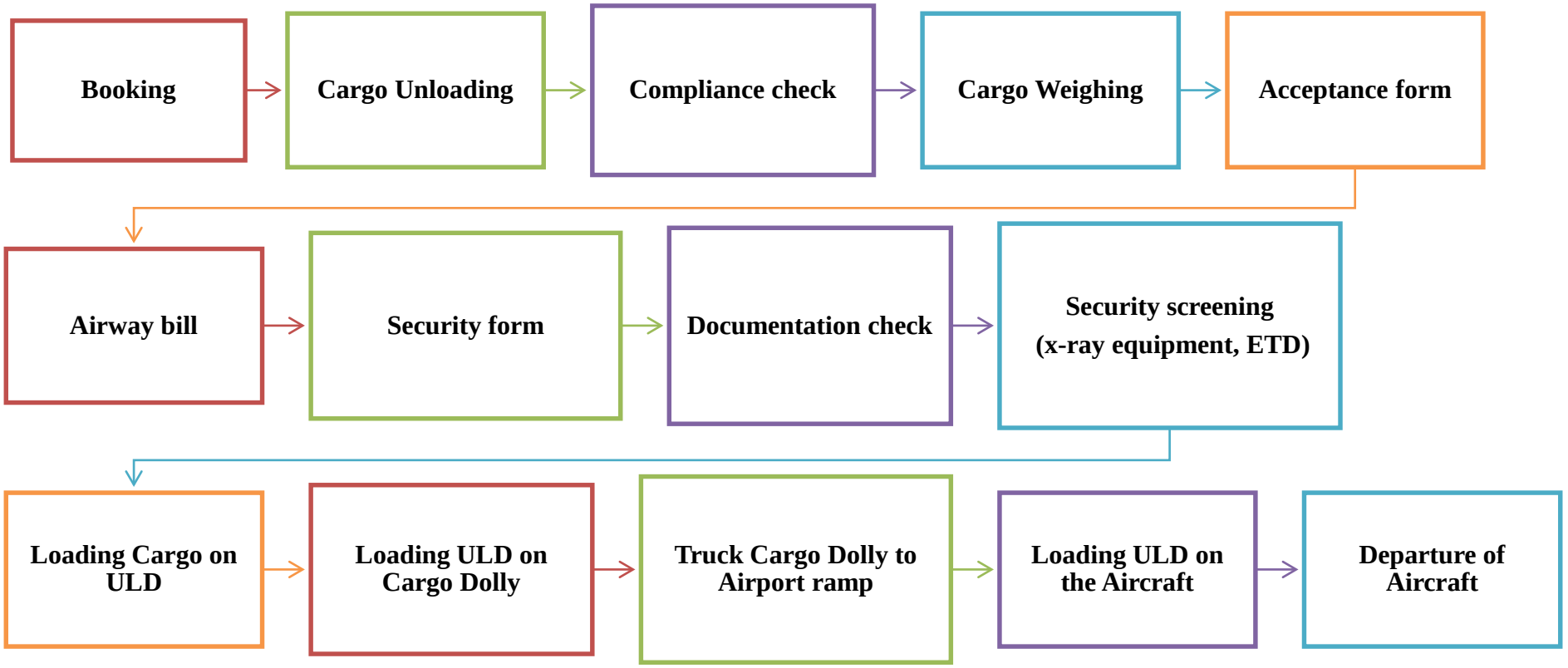
- Booking: The air freight forwarder books a flight with an airline for perishable cargo and ensures there is a space on the connecting flight (in the case of hub and spoke route system) so that the shipment can benefit from handling priorities because of its perishable nature.
- Cargo unloading: The shipment is unloaded at the export terminal on the day of export because they are fresh products.

Table 5. 5: Characteristics of the aviation operators' interviewees

Job Title	Company	Management Level	Years of work experience	Mode of cargo flight to UK	Flight Destination	Educational Qualification	Gender	Age (years)
Cargo Manager	AV1	Middle Management	5 – 10	Indirect	Brussels, UK	Master's Degree	Male	30 – 39
Business Manager	AV2	Middle Management	11 – 15	n/a	n/a	Master's Degree	Male	40 – 49
Customer Service/Sales Manager	AV3	Middle Management	11 – 15	Indirect	UK, USA, France, Italy, Netherland, Austria and some African countries	Master's Degree	Female	30 – 39
Cargo Operations Manager	AV4	Middle Management	5 – 10	Direct	United Kingdom	Master's Degree	Male	40 – 49
Cargo Operations Supervisor	AV5	Middle Management	Below 5 years	Direct	London Heathrow, Los Angeles, Miami, Calgary, Ontario, Vancouver, Antigua	Post-Secondary Education	Male	30 – 39

- Compliance check: The packaging and other specifications are checked for compliance.
- Cargo weighing: The shipment is then weighed in the presence of the cargo staff, the shipper, the airline and NACHO representatives.
- Acceptance form: An acceptance form is issued to be signed by the airline, the customer and NACHO and these three must be represented for a shipment to be accepted. The acceptance form shows the quantity and the dimensions of the cargo which is used in rating.
- Airway bill: The airway bill is then typed after acceptance and it shows the name and address of the shipper, name and address of the consignee, the rate at which they are being charged, name of the receiver, and then details about the products (Appendix 5.2).
- Security form: A security form is issued and the forwarder submits it to the relevant agencies for a documentation check.
- Documentation check: Relevant government agencies check the shipment and necessary documents and stamp them to indicate compliance and their approval.
- Security screening: Equipment such as an x-ray and an explosive trace detector (ETD) are then used for security checks after documentation has been approved.
- Loading cargo on ULD: Each cargo is then loaded on a unit load device (ULD) after the security screening process.
- Loading ULD on cargo dolly: A ULD is loaded on cargo dolly using a forklift.
- Truck cargo dolly to airport ramp: The dolly is then trucked to the ramp by NACHO staff accompanied by an airline staff member for loading on the aircraft.
- Loading ULD on the Aircraft: A high-loader is then used to load ULDs on the aircraft and the cargo staff ensure it is properly locked and secured. It is at this point that a form called notification to captain (NOTOC) is filled and this form notifies the airline captain of the location of the perishable products for temperature regulation purposes.
- Departure of aircraft: The aircraft then takes off according to flight schedule.

Figure 5. 4: Air Cargo Operational procedure for HPE from Nigeria



The participants shared their experiences and indicated that the following are barriers that hinder HPE.

Airline market structure

- Monopolistic market

Indirect flights can lead to a loss of freshness and can therefore affect the quality of fresh horticultural products. Indirect flights hinder HPE yet direct flights to the UK are limited, so British Airways (BA) has competitive advantage over other airlines transporting horticultural products.

> *"British Airways is very effective. It's because BA is a direct flight to UK –London Heathrow. Other ones will still have a stopover" (Business Manager at AV2).*

Moreover, since BA has been in the market for a long time, it is difficult for new entrants to penetrate the market. One of the strategies used by BA to create barriers to new entrants is the provision of incentives. The freight forwarders usually receive some incentives from BA so they ensure exporters use BA.

- Flight departure time

The Cargo Operations Supervisor at AV5 stated that although AV5 operates a direct flight to the UK, their flight departure time does not meet exporters' same day delivery preference and this affects them from being frequently used.

> *"From our own perspective, our time of departure affect it. They are not ready to work our time. Exporters want it to go that same day and it's not that possible" (Cargo Operations Supervisor at AV5).*

- Risks

The major risk in the air cargo operation of HPE is damage to the horticultural products. This is because they are prone to deterioration if not well handled or when other factors such as bad weather and delays arise.

> *"Our barrier is just centred on the fact that the moment we receive perishable, it is now with you. There's nothing anybody wants to hear than send my perishable to that destination intact and good. If at the other end they say- we receive it destroyed*

then it is an issue for us. The next thing is claims claims claims!" (Cargo Operations Manager at AV4).

Infrastructure and logistics issues

Horticultural products are time-sensitive and therefore require essential infrastructure and facilities to ensure smooth logistics in order to avoid deterioration. The following are the issues identified by the participants:

- **Infrastructure**

- Transport issue

The participants indicated that transport is one of the constraints to HPE. Bad roads, traffic and the use of an inappropriate vehicle lead to inland transit delays when transporting these high value products to the airport. Sometimes, the consequence is that the cargo misses the flight schedule.

"Some of them will get here around 2 o'clock. So the basic thing is transporting the perishables down here from the farm or wherever. That is the challenge they have. Getting down here, traffic. For most of them I've found out their constraints and I found out it's the traffic in Lagos" (Cargo Operations Manager at AV4).

- Poor power supply

The power supply for generating electricity is not stable causing delays in the export operational system.

"It's part of my hiccup, but we have a standby generator. It's part of the challenge, it's a big challenge" (Business Manager at AV2).

- Lack of cold storage facilities

A cold room is essential to preserve the quality of fresh horticultural products in case of a delayed flight; however this is still lacking at the export terminal. The participants indicated that the lack of cold facilities discourages investment in HPE.

"Now there is no particular facility to facilitate export of perishable products. The basic one that we are talking about is the cold room. We don't have it" (Cargo Manager at AV1).

"Some are not acceptable over there because the temperature here- humidity affects them. When it comes, it comes fresh, but by the time it gets there, the humidity within this confined area affects it" (Business Manager at AV2).

The Cargo Manager at AV1 explained that the cold room at the export warehouse was underutilised when it was functioning so, they failed to repair it since it appears to not be beneficial to them. He indicated that notwithstanding whether the cold room seems beneficial to them or not, it is a valuable facility required to enhance HPE and other perishables. The existence of a cold room gives an exporter confidence in a time of uncertainty.

- Poor packaging

Packaging was indicated as part of the constraints to HPE from Nigeria. When asked - what are the barriers you encounter at the moment in handling and transporting these products? The Customer Service Manager at AV3 responded as follows:

"We are not able to provide proper packaging up to European standard and because of that they don't allow us to bring in all horticultural products; even some fish products because of packaging regulations and all that" (Customer Service Manager at AV3).

The views of the Cargo Operations Supervisor at AV5 and Cargo Operations Manager at AV4 are different from other participants. They noted that their airlines enforce package compliance therefore packaging is not one of their challenges.

"Yes they comply because if they don't comply, the products will not be loaded on our aircraft. "Before a shipment goes, there is a compliance checklist which we raise. Without them complying, that compliance checklist cannot be raised. So our men on the field always make sure they comply" (Cargo Operations Supervisor at AV5).

Export operational challenges

The current state of the export system in Nigeria is not encouraging and this also hinders increasing HPE. The Business Manager at AV2 indicated that machine breakdown and the absence of a cold chain system are part of the operational challenges at the export terminal. The participants highlighted the challenges in the export system and these are discussed below.

- Documentation issue

Nigerians dislike devoting too much time to achieving either a task or a goal and since the export process is rigorous and time consuming, they tend to cut corners or quit the process.

> *"And our people are not ready for documentation. Once they ask them to do this and this, they will just tell you - I don't have time for that. So that has been the basic thing that is affecting us from exporting. The documentation aspect has been an issue" (Cargo Manager at AV1).*

On the other hand, the Cargo Operations Supervisor at AV5 explained that they ensure the proper scrutiny of documents.

> *"If they don't submit what is required of them, a fine would be paid on the airline. So no airline would want to pay a penalty of what they can avoid so appropriate prevention to make sure all documents that are submitted are well checked and scrutinized to know if it's the right ones. So the men on the field are being trained regularly" (Cargo Operations Supervisor at AV5).*

- Lack of export readiness

The Cargo Manager at AV1 emphasised that Nigeria is not yet ready for an increased volume of exports and this is reflected in the way the export sector is generally set up. For example, the size of the export warehouse is very small and there are no adequate facilities at the terminal. When asked whether Nigeria is not capable of exporting flowers, fruit and vegetables like other African countries, his response is as follows:

> *"A lot of issues; one, we are not ready. We are not ready in the sense that this is not something that an individual can do on its own. You need the government backing. I've been to Accra and most of these African countries to see their set up. When you get there, you will know that it's different from what we have here" (Cargo Manager at AV1).*

He highlighted the prospects therein such as job creation and the growth of a related industry if Nigeria really shows signs of readiness for HPE.

> *"..... so packaging industry will be moving; a lot of things will come in. I see a lot of opportunity to create jobs and even a way to generate more revenue for the*

country. It's something that if a country is serious, it's something we can really do to get our people out of unemployment" (Cargo Manager at AV1).

According to the Cargo Manager at AV1, the operational procedure at the export warehouse is not up to internationally expected standard because Nigeria is not ready for export.

"It's not up to standard if we are talking about the export warehouse. It's not up to standard, we are not prepared, and we are not ready. And until something is being done that will make us expand more than what we are doing now. What we are still doing is an individual effort" (Cargo Manager at AV1).

However, there were contrary views by the Customer Service Manager at AV3 and the Cargo Operations Supervisor at AV5 that since they follow IATA standards, they perceived their operations were standardised.

- Limited working hours

The operational hours at the cargo export terminal on Monday to Friday is between 8am and 5pm while the customs work between 9am and 4pm. Since export operations depend on customs officers and NACHO staff, their limited working hours are perceived as a constraint to HPE.

"The operation starts 8a.m and stops 5p.m. It depends on customs, if customs are not working, then operations stop" (Business Manager at AV2).

However the Business Manager at AV2 explained that exports are not affected by the limited operations hours because of the current state of export.

"The limited working hours doesn't affect our export. You know Nigeria export is in its teething period. By the time it blows up very well, that can be looked into as a possible way of expanding and promoting it. But now, export is still in its teething period" (Business Manager at AV2).

- Non-regularised export process

The export process is longer because of the existence of many agencies at the export warehouse.

> *"Most of those particular countries that I went to, they have a one stop shop that you can just go to and finish all your export process. But here, you have to move from one table to another from one table to another and from one table to another" (Cargo Manager at AV1).*

The Cargo Operations Manager at AV4 explained the reason for the existence of too many agencies:

> *"We are in one of the list of the danger zone countries because of the Boko Haram thing. So for you to do any export, you must be subjected to serious security scrutiny which means you must have to pass through the quarantine services of the Federal Republic of Nigeria, the police anti-bomb, the customs too. Nigerian customs too must examine what you want to ship, then the Nigerian drug and law enforcement agency also must be okay with what you have to do. Then after all these, it now comes to the point of NACHO" (Cargo Operations Manager at AV4).*

- Bribery and Corruption

Bribery and corruption practices allow non-conforming products to go through to the export market. When asked why Nigerian products are still rejected in spite of the phytosanitary certificate that has been issued to the exporters, the Cargo Manager at AV1 expressed his view as follows:

> *"…. because somebody will sign for you at that table there. And the person that is going to sign, is either you tip him, he didn't even see what you brought; he just signed. Sometimes, he will not even give it to the quarantine to sign. He just gets the form and they will sign on their own. So they don't do a thorough job; that has been the issue." (Cargo Manager at AV1).*

Existing institutional framework

- Lack of enabling environment

Government support is essential for developing and improving HPE from Nigeria. The response by the Business Manager at AV2 indicated that the Nigerian government is relied upon heavily to provide an enabling environment that will facilitate export.

> *"Once government can gear all mindset towards export, towards farm produce, provide stable light, automatically the system of export will thrive" (Business Manager at AV2).*

- Lack of deliberate policy and implementation

According to the Cargo Manager at AV1 and the Business Manager at AV2, policy implementation is part of the challenges facing HPE. Sometimes the Nigerian government formulates policy; to implement it becomes an issue.

> *"If there is sincerity in our policy, it will transcend down. There is a saying that talk is cheap but work the talk. That is the major thing and that is exactly what we lack" (Business Manager at AV2).*

Market penetration issue

- Low demand

One of the major barriers to the further development of international trade in fresh horticultural products is that the international market demand is currently small. The participants therefore emphasised the need for someone to assist exporters to identify buyers, penetrate international markets and create market opportunities.

> *"There are lots of farmers that have big farms like Obasanjo's farm. He has a lot of land. What he would tell you is this: if you have market tell me when you want me to plant and I will plant it and when I give it to you, you go and sell because there is no market for it" (Cargo Manager at AV1).*

- Inadequate Supply

According to the Cargo Manager at AV1, the volume of horticultural products they transport from Nigeria is still small compared to other neighbouring West African countries. He explained the strategy employed by AV1 to fill up its aircraft capacity.

"We now developed this strategy that instead of the flight going back empty, let us try as much as we can to get something that we can actually put on board the flight so that the flight will not be going back to Europe empty. That is why we developed the perishable market. And when we developed the perishable market, we found out it is so difficult getting perishables from Nigeria so we spread our tentacles to other West African countries like Benin Republic, Cote d'Ivoire, Ghana and Cameroon. For now, we have been able to get a lot of freight – perishables. Pine apples, mangoes, from other West African countries back to Europe. But what we are getting from Nigeria now is still so small up to this particular moment. And if you are able to do something that will bring in more volume, it will be a good advantage to every one of us" (Cargo Manager at AV1).

The participants of the four airlines interviewed agreed that they have enough capacity to handle the current supply and the Cargo Operations Supervisor at AV5 responded as follows:

"Yes we have enough capacity to handle current supply and I think there is a subsidised rate given for perishables. The freight charge is lower compared to what we charge for other products" (Cargo Operations Supervisor at AV5).

- Low market advantage

The response by the Cargo Manager at AV1 indicated that some countries have market advantage over others based on certain factors and in this particular context, neighboring West African countries (such as Cameroon and the Benin Republic), have language as a market advantage over Nigeria in some international markets and this implies that Nigeria might not be able to penetrate the same export markets like these countries.

"What happen is that we are being surrounded by French speaking countries, most of the perishables that are coming from Abidjan, Lome, Benin Republic and Cameroon, all these countries are French speaking countries and most of their produce goes to France. There is a particular perishable market in France called Rungis. That is where all the perishables that we pick from West Africa goes to. We try sometimes to open up Nigerian market but most of the perishables from Nigeria go to London and most of the French speaking countries export to France. We try as much as possible to open up the Nigerian market to be getting some perishables to Europe but it's not so much compared to 95% of the perishables we are currently

picking to France. Only some fragment of it ends in London (Cargo Manager at AV1).

The Cargo Manager at AV1 also emphasised that Nigerian horticultural products cannot compete because of the lack of a longer market presence in international markets. His response indicated that other countries with longer market presence have gained trust over time.

"In Accra Ghana, they have pass through this particular process and they are way above it. Most of the time when their shipment comes in now, they don't do 100% check; they just do random check. I've seen that but for us, whenever we send a shipment, even sometimes some people come in to say they want to send in shipment but by the time they do it two to three times, they will not want to come back again because at the end of the day, the shipment will be destroyed" (Cargo Manager at AV1).

- Niche market

Nigerian horticultural products are exported for consumption by Africans living in the EU but not the wider market

"We have two markets in Europe. There is a market that we called the international market and when you want to sell in this market, the standard is very high which implies that what white and black can buy. And there is the second market- the market is for Africans that are living in Europe. They want to eat and feel as if they are still in Africa. Basically most of the vegetables that are being exported from Nigeria are going to this particular market. They are the normal vegetables for African people. From what we export on our own flight, I can conclude that Nigeria is not exporting to international market" (Cargo Manager at AV1).

Food safety and quality concerns

- Product standardisation issue

The Cargo Manager at AV1 explained the reasons for product rejection in international markets. Some of the reasons are that the products do not conform to international standards due to poor post-harvest handling and also because exporters conceal other goods within the packaged products. The Cargo Operations Supervisor at AV5 also narrated an experience of rejection:

> *"Yes. There was one situation we had then. It was fresh pumpkin leaf, it was sent to London Heathrow. When it got there, I think the shipper did not make accurate arrangement with his consignee clearing agent over there. So before the shipment could be cleared, some part of the shipment was damaged. I think the pumpkin leaves were dried so she raised the complaint. After much investigation, she knew it wasn't our fault, it's the consignee's fault. That is one of the major challenges we have when it comes to perishables" (Cargo Operations Supervisor at AV5).*

- Rigid regulations

Rigid regulations by the European Union were emphasised as one of the important issues facing HPE.

> *"The major problem is the European Standard. Too many regulations by the EU. This is because they don't understand our food and our things. Most times they put embargoes on things that are nothing" (Customer Service Manager, AV3).*

- Pest control issue

Nigeria has a pest control and preservation problem and this usually leads to post harvest food waste.

> *"Mangoes are just there getting spoilt. We can't even preserve" (Cargo Manager at AV1).*

The Cargo Manager at AV1 stated that pest control is not an excuse for not exporting mangoes because other African countries are able to control it so why is Nigeria not capable?

> *"If they can control it in Cote d'Ivoire, what stop us from controlling it here? So that one is not an excuse" (Cargo Manager at AV1).*

High cost of finance

- High transaction costs

High transaction costs result in little or no profit margin for the exporters. The Cargo Operations Manager at AV4 expressed his concern as follows:

> *"Like I told you, freight charge, quarantine charge, and every other fees paid, by the time you do all that and you find out all what you have paid is even more than the actual thing you are exporting so when I now get them sold, am I going to make all these money back?" (Cargo Operations Manager at AV4).*

He explained that AV4 has been flexible in its costing approach and discussed all their efforts to encourage exports through reducing freight charges.

Neglect of agriculture

- Dependence on oil

Nigeria's focus is not on agricultural resources rather, it is on oil.

> *"The operational procedure is not an issue. Why it's not going in high tonnage the way other countries are doing it is because we are not more into the farming aspect. Everybody is doing the white collar job. That has nothing to do with the operational aspect. Just that people are not ready to go into farming" (Cargo Operations supervisor at AV5).*

This according to the Cargo Manager at AV1 is because the revenue is lower from farming compared to oil. The Business Manager at AV2 therefore emphasised that government support is required to encourage agricultural development while the Customer Service Manager at AV3 also spoke about the need for Nigeria to focus on agriculture.

> *"Nigeria should take agriculture seriously. We need to have interest in agriculture" (Customer Service Manager at AV3).*

- Import oriented country

Nigeria is an import oriented country and this is one of the constraints to exporting as a whole, not just HPE.

> *"We are an importing nation except we want to lie about our self. We are purely an importing nation" (Business Manager at AV2).*

Stakeholders' inadequacy

- Lack of knowledge

The participants agreed that information is vital for exporters. It is important to have knowledge about exportable products, weather suitability, export markets and export requirements but Nigerians are ignorant of these requirements. The Cargo Manager at AV1 also explained that though the Nigerian government intervenes at times, they do not create adequate awareness to enlighten citizens about the opportunities available to them.

> *"Information means a lot of people are outside there; they are inexpert about it. Are you sure we can export this product? They don't have information; which is key. And some have information but they don't have the market. And the market determines what you take out. If I have the market for this, all I need to do is as I'm going to UK now I might get to UK and somebody gives me a contact, you can be sending this product. That is market for me and I have information. That is one of the constraints" (Business Manager at AV2).*

- Non-compliance with procedures

Exporters are required to comply with NPQS regulations and other procedures but because they believed the process is rigorous, they do not follow the due process and this also affects HPE.

> *"In fact for you to do export, you must have a farm". "It's not something that you can be going to buy in the market and the farm must be registered". All these quarantine that goes to the farm to inspect and certify that the farm can actually export. And most of our guys when it gets to that they don't want to do it" (Cargo Manager at AV1).*

Domestic market

- High demand

The large domestic market and the growing demand for quality products by large supermarkets in Nigeria may hinder HPE when quality products are grown. Currently these supermarkets import horticultural products to meet the increasing demand for quality and convenience products in the local market. The Cargo Manager at AV1 shared his experience in the quote below:

> *There was a particular time that we wanted to start this green peas, we actually met the Minister of Agric. and he pumped in some money, trainings, send some people to Kenya to train them. They came back, started this greenhouse and we went to pioneer with Obasanjo's farm. After harvest we went back to see him to know what is happening. Unfortunately what he told us was that the market in Nigeria is not able to fulfil all the demand. There is a lot of demand from ShopRite. It has high quality and since they want high quality because most of the time, ShopRite imports some of those products. He now said that he met with ShopRite and they said they can buy everything and they need more. Since he cannot handle the demand in the local market, he did not see any reason why it should be exported" (Cargo Manager at AV1).*

- Cultural Orientation

The Cargo Operations Manager at AV4 explained that the Nigerian culture does not place value and emphasis on flowers as evidenced in the western world and this is the reason why flowers are not exported from Nigeria.

> *"You know because our orientation with flowers is different from that of people in Europe. Here, we hardly respect flowers to that level. You know it's just something we just want to catch up with. When you see somebody and you want to appreciate the person, you give a rose or flower" (Cargo Operations Manager at AV4).*

Security issue

Nigerian horticultural products face excess scrutiny in international markets and as a result of this, exporters are discouraged. On the other hand, the Cargo Manager at AV1 explained that Nigeria is a high risk country due to the ongoing terrorist attacks.

Weather

The Cargo Operations Manager at AV4 indicated that weather might be a hindrance to increasing HPE.

> *"But here, I want to look at it from probably because of our weather again. Because it's always too tropic always too sunny. So how do you preserve flowers? That has shifted our attention out of there" (Cargo Operations Manager at AV4).*

Summary

The participants in the in-depth semi-structured interviews are air cargo practitioners and are therefore knowledgeable in this area. Based on the analysis of their responses to the interview questions, the following themes emerged as barriers to HPE by air from Nigeria: airline market structure, infrastructure and logistics issues, export operational challenges, existing institutional framework, market penetration issue, food safety and quality concerns, high cost of finance, neglect of agriculture, stakeholders' inadequacy, a large domestic market, security issue and weather.

These themes will be evaluated in Chapter six to better understand the state of HPE from Nigeria.

5.8 Perspectives of Government Institutions

Introduction

The Zonal Controller, Principal Agricultural Superintendent, Export Credit Officer, Senior Economist, Trade Officer and Deputy Director of six relevant government organisations participated in the semi-structured interviews (five in-depth interviews and one telephone interview) (see Table 5.6 for their details).

The data collated from these participants were analysed consistent with the aim and objectives of this research. Based on their responses, the barriers that inhibit increasing HPE by air from Nigeria are identified and discussed under the thematic headings below:

Neglect of agriculture

The participants emphasised that Nigeria has abandoned agriculture and had not realised the potential benefit of the horticultural sector to its economy (see Appendix 5.4 for list of exportable horticultural products). The Deputy Director at GOV6 expressed his view as follows:

> *"One of those for examples, take tea for example in Nigeria, there is this Plateau Mambilla. I've done a study on it, UK does not produce tea, they pack tea but it's a major earner. Kenya produces it every year but Nigeria has it but it's wasting; it's also horticulture but it's just that nobody is encouraging them. It's growing wide in Mambilla part, its grade A tea but in Kenya today, it's growing ways. Kenya makes a lot of profit from it. It's the second foreign exchange now in Kenya, tea! Like I said, UK does not produce tea, they don't farm it but they pack it. They make a lot of money, go and check the statistics. Nigeria produces it but it's not going wide. We've been saying a lot about it. Horticulture could be a major foreign earner for us" (Deputy Director at GOV6).*

Table 5. 6: Characteristics of the government institutions' interviewees

Job Title	Company	Management Level	Years of work experience	Educational Qualification	Gender	Age (years)
Zonal Controller	GOV1	Top Management	21 and above	PhD	Male	50 and above
Principal Agric. Superintendent	GOV2	Middle Management	21 and above	Post-Secondary Education	Female	50 and above
Export Credit Officer	GOV3	Middle Management	Below 5 years	Master's Degree	Female	30 – 39
Senior Economist	GOV4	Top Management	11 – 15	Master's Degree	Male	40 – 49
Trade Officer	GOV5	Middle Management	16 – 20	Post-Secondary Education	Male	40 – 49
Deputy Director	GOV6	Top Management	21 and above	Master's Degree	Male	50 and above

According to the participants, agriculture has been neglected due to certain factors as follows:

- High dependency on oil

> *"You know in Nigeria agriculture is not taken as a serious business. So far, many have not actually engaged in it may be because of our lackadaisical culture of farming. Here people believe that where you can quickly make money is through oil" (Zonal Controller at GOV1).*

- Import-oriented country

The high propensity to import is one of the reasons why Nigeria is not considering HPE. The Zonal Controller at GOV1 expressed his view as follows:

> *"In Nigeria because we are import-driven. Here, people believe that where you can quickly make money is through import of toothpick, fake materials and what have you" (Zonal Controller at GOV1).*

- Lack of investment in farming

> *"And the reason why that has been like that it's because a lot of the educated people have not paid attention to it; they have not invested into agriculture. A lot of the educated people are not ready to travel to the furthest part of the North to import the agricultural product. "The challenge basically is still that we need to just focus more on agriculture" (Export Credit Officer at GOV3).*

- Low revenue

> *"But in terms of activity, agriculture contributes about 40% to our GDP. Only that from the revenue side, it's very low. Oil gives us about 20% activities but in revenue, it's about 85%; agric. is on less. We have lots of activities but revenue wise, it's very low. But if all these things are put in place, of course that will be additional source of income, foreign exchange and revenue for Nigeria" (Senior Economist at GOV4).*

- Lack of Good Agricultural Practices procedures

> *"The GlobalGap, that is, good agricultural practice, we don't have it as far as Nigeria is concerned due to the fact that we have not attained the level we are supposed to attain. Now why we don't have it is that: we don't have farm assurer. There are supposed to be farm assurer that can assure each farm on the standard and the standard are there that this is the first stage, second stage and the third. You said you are from London, you would have seen that most of the vegetables we are talking about cannot satisfy the standard in the UK" (Zonal Controller at GOV1).*

On the contrary, the Export Credit Officer at GOV3 stated that although the agricultural sector seems to have been neglected, they have been investing more in this sector than in other sectors within their mandate.

> *"A lot of the deals that we have; the highest percentage is spent on agriculture. Highest investment is more on agriculture even though, we can try and do better. A lot of the investment we make is still on agricultural part of our mandate" (Export Credit Officer at GOV3).*

The Deputy Director at GOV6 commented that the decline in oil prices might provide the necessary impetus for improving the agricultural sector. The Zonal Controller at GOV1 emphasised the need for agriculture to be taken seriously as a business by the Nigerian government so that the opportunity can be maximised to diversify its economy.

> *"One thing government should recognise is that agriculture is a business and not just a way of life. Once that is done, we know that we will get it right. But as far as I'm concerned with the way we are going, if we don't take time, we will not be able to achieve anything" (Zonal Controller at GOV1).*

- Subsistence system of farming

The Zonal Controller at GOV1 explained that the lack of awareness about international market opportunities is the reason why the current system of farming is still at subsistence level. The Deputy Director at GOV6 stated that it is difficult for Nigerian products to satisfy export market requirements with such a system of farming.

> *"But in terms of agriculture, locally is more or less subsistence. Subsistence in the sense that we consume whatever we produce. I believe the awareness on the potentials and other pros at the international community is not yet known" (Zonal Controller at GOV1).*

Existing institutional framework

The participants emphasised the need for a deliberate intervention by the Nigerian government so that the country can embark upon HPE as a means to diversify its economy because the sector lacks government support at the moment. They expressed their views as follows:

- Lack of collaboration

Collaboration is missing among the government agencies and other stakeholders at the moment. The Deputy Director at GOV6 therefore advocated for synergy among them in order to improve and reap the benefits of the HPE sector.

> *"We have issues about working together and developing synergy; everybody is just doing their own. On the part of the government, on the part of the stakeholder, there should be a deliberate policy, a deliberate effort from both sides to make sure things are being done properly" (Deputy Director at GOV6).*

- Lack of awareness

Government institutions are established to provide support to both individuals and other organisations that require their services. Some of these government establishments are not known because they do not create adequate awareness of the services offered by them. For example, the Export Credit Officer at GOV3 indicated that GOV3 did not have a high profile until recently.

> *"But majority of our customers actually do seek us; it's not like a commercial bank that actually goes out to get customers. Awareness is something we are definitely*

battling with, but it's something we are also working on; let me put it that way. And that is the reason we always encourage that we meet as many of these exporters as we can. For example this person you are talking about, do you have the person's details? We'll be very happy to give the person a call and tell the person what we are about and what we have to offer" (Export Credit Officer at GOV3).

She explained that some farmers and exporters know about GOV3 but they fail to contact them because they do not have credit securities to meet up with the finance requirement.

Contrary to the response of the Export Credit Officer at GOV3, the Trade Officer at GOV5 indicated that GOV5 has been creating adequate awareness and encouragement. His response is as follows:

"In that aspect, normally the farmers are given the encouragement most of the time through seminars and we, the staff, through courses that we engage on. Most of our staff that are outside the base here come and liaise with the farmers to know their problems" (Trade Officer at GOV5).

- Lack of incentives

The Principal Agric. Superintendent at GOV2 complained that farmers are not encouraged by the government because they do not provide incentives for them and her view is disclosed in the following quote:

"There are also no incentives such as fertiliser from the government. Farmers buy seeds on their own. That is why they have been complaining that government is not helping them" (Principal Agric. Superintendent at GOV2).

- Lack of deliberate policy and implementation

The Zonal Controller at GOV1 emphasised that Nigeria is a member of several agreements and partnerships but the lack of implementation has jeopardised these opportunities. The participants indicated that the government has no deliberate policy to enhance HPE and all its promises can be regarded as lip service because there has been no implementation.

"So government policies are there to support exportation of all these products but it's on paper. When it comes to the nitty-gritty, it's not on ground; it's only on paper!" (Zonal Controller at GOV1).

"But then the government like I said should stop paying lip service; let's be serious" (Deputy Director at GOV6).

However, the Zonal Controller at GOV1 indicated that the government is trying to encourage exports but it has not yielded a significant result.

"Even with the present government, they tried to introduce value chain on export of food and other things. Government is making attempt but it's to no avail because it has not materialised to what we expect as a country. So that's what Nigeria story is" (Zonal Controller at GOV1).

Notwithstanding, the participants are optimistic about intervention by the new government. One of the participants' views is that:

"What happen now is that the new government is very serious and very soon things will work out" (Deputy Director at GOV6).

- Research negligence

Research negligence is also one of the constraints to horticultural export. Even though there are quite a number of research institutes, the majority of them do not disseminate their research or their evidence has been neglected and is therefore not put into practice.

"All our research agencies have collapsed, all the agricultural development Programs (ADP) introduced by vast leaders under World Bank. Since World Bank stops, government cannot continue" (Zonal Controller at GOV1).

"National Horticultural Research Institute (NIHORT) has been there for how many years. They are good concepts but who is using their research? Who is looking at them?" (Deputy Director at GOV6).

Infrastructure and logistics issues

The participants indicated that the exporting environment is not conducive due to inadequate infrastructure and facilities. Their responses are as follows:

- Lack of Infrastructure

> *"When we don't have any standard vehicle, we don't have storage and all those things that will move it immediately. Where is the road? Where is the rail? So these are the pressing constraints. The facilities are not global trade standard; they are far far" (Zonal Controller at GOV1).*

- Transport issue

The use of inappropriate transport usually results in inland transit delays and late delivery to the export gate.

> *"So at times they don't come early. Goods get here late. Road traffic agencies such as Lagos State Transport Management Authority (LASTMA) also disturb them that the vehicles used are not meant for moving goods" (Principal Agric. Superintendent at GOV2).*

- Poor power supply

The Zonal Controller at GOV1 explained that the lack of electricity discouraged the export of perishable products. It also discouraged foreign investors from investing in Nigeria and not just the agricultural sector.

> *"When people come around and they see what we have on ground, they run away because they know there is no way they can meet up. Now people said that they should come and invest and there is no energy, no light and how will they meet up? So that is why people run away. If actually as a country we have started doing agriculture the way it's supposed to be, many people can be invited to come and join us" (Zonal Controller at GOV1).*

- Lack of cold chain facilities

The participants complained that a cold chain system is lacking and emphasised that this was a major challenge to increasing HPE:

> *"No refrigerated facility" (Zonal Controller at GOV1).*

> *"Apart from production, what about the export logistics -the cold chain, we don't only produce, the cold chain should be there" (Deputy Director at GOV6).*

- Lack of cold storage facilities

> *"Normally we don't pray for vegetables to stay overnight. Today is a vegetable day so the moment they start coming in we move the vegetables immediately because the moment they exceed today, there is tendency that it will spoil" (Trade Officer at GOV5).*

- Unrefrigerated packaging site

> *"There should be air-conditioned packaging site to keep the products cool but it does not exist at the moment" (Principal Agric. Superintendent at GOV2).*

- Unrefrigerated vehicles

> *"In terms of moving vegetables from the farm to the exit point, there is no standard vehicle as refrigerated vehicle, that after harvest, the transpiration on the plant, the water will not be lost. So there is no conducive transportation system" (Zonal Controller at GOV1).*

- Poor packaging

According to the Deputy Director at GOV6, Nigerian products are not properly packaged even locally and this affects the acceptability of the products in the international market. He narrated his experience about how good packaging can enhance the acceptance of horticultural products.

> *"I was in UK at a time, I saw the sweet potato from Zimbabwe, I can never eat that because they are so tiny but the packaging gives it value not like we package back home. Totally presented! They don't have near what we have in terms of sweet potato. I saw it but I can't buy it because there will be stress in that kind of potato if I want to peel it. But the one in Nigeria is so big you will see anybody put it on*

the road there. I was passing through Iwo axis Ibadan last week, I saw good sweet potatoes and I said see the one Zimbabwe is selling to the UK. I can't buy it but see the way they put it, it's properly packaged. So we need to do a lot. It's the orientation" (Deputy Director at GOV6).

Stakeholders' inadequacy

- Uneducated stakeholders

The Export Credit Officer at GOV3 and the Deputy Director at GOV6 indicated that the majority of the farmers and exporters are illiterate and lack knowledge about new and appropriate farming and exporting practices. In other words, the educated ones perceive agriculture to be for the unschooled, and therefore, farming has been abandoned and this is the reason why the agricultural sector is not developing as it ought to.

"A lot of the farmers like we said, are not educated; people that are educated need to invest into it and realise that this sector is about to boom" (Export Credit Officer at GOV3).

The majority of the air freight forwarders are also not well educated.

"Because of their level of understanding, they don't follow procedures. One of the reasons we discover is that documentation also causes rejection -Improper documentation. So we have told them I think there is this agency I can't remember it now which have been given that task now to make sure the agents they use need to be registered. Anybody here is an agent but they will not do proper documentation" (Deputy Director at GOV6).

Food safety and quality concerns

- Product standardisation issue

The participants acknowledged that product standardisation is one of the major constraints therefore exporting becomes a challenge due to an inability to conform to international market standards. The Senior Economist at GOV4 and the Deputy Director at GOV6 indicated that one of the biggest challenges is the standard itself. The Nigeria Plant Quarantine Service (NPQS) has recently created awareness in this regard through conferences and seminars.

"Nigeria products including this particular one are not yet meeting the international standards and I saw recently in the news that UK is rejecting some products from Nigeria" (Senior Economist at GOV4).

"Those markets outside there are very technical, they are specific, they want stability and a lot of these they need. But then these are the things we are not conscious of" (Deputy Director at GOV6).

While the Zonal Controller at GOV1 explained that the products sometimes face rejection when exporters conceal other products within the packaged products, the Principal Agric. Superintendent at GOV2 indicated that she had observed that rejection occurs more when the local products for export are in season. The reason for the rejection was also explained by the Deputy Director at GOV6 as follows:

"The problem is that we discovered recently that the host country, the importing country does not help matters too. One, they require that some products should be fumigated from Nigeria. But by the time it gets to their warehouse too in the UK, they want to fumigate it. Because of lack of trust of whether it was properly fumigated, they will do it again. It is double fumigation, the products will get spoilt!" (Deputy Director at GOV6).

Contrary to other participants' views when asked if Nigerian horticultural products are meeting the required standard, the Trade Officer at GOV5 responded that they have been doing a thorough check to meet standards.

"Yes we are encouraging them and at the same time meeting up because most of these things would not be exported. We have the quality aspect and the packaging and all. We do a thorough check on it. It will not cross our shore here and they will not even admit it over there. Because most of the time if it fails the international standard there, then it will definitely come back to us. These days, because of our commitment, we have not received any bad report as per export is concerned here" (Trade Officer at GOV5).

High cost of finance

- High transaction costs

According to the participants, HPE is not encouraged due to the costs that are involved. Transaction costs include the production cost, transportation cost, freight cost, and other export costs and because these costs are currently high, Nigerian horticultural products are not competitive in international markets. The implication is that exports have been less than might be the case due to high transaction costs.

> *"When you put the cost of production in Nigeria together, to be competitive over there is very very difficult. One, the cost of inputs here are very exorbitant. Cost of fund, energy, so many things put together. We discover that for them to compete over there by the time you put all the airport logistics together is very high. So they can't compete" (Deputy Director at GOV6).*

The Deputy Director at GOV6 narrated the experience of some farms that were previously exporting horticultural products to the UK but had stopped because of high costs.

> *"At a time there was Yako farm that was exporting mangoes straight to London there, after some time because of cost of production it stops. There was a time Nassarawa paper yam was exported to UK there but all of a sudden, it also stopped. When you put cost of production in Nigeria together, it's very very high" (Deputy Director at GOV6).*

- Lack of access to loans

Finance is one of the challenges faced by the stakeholders and according to the participants, the lack of funding has hindered the farmers and exporters from doing the right thing. Even where the funds seem available, the cost of borrowing is very high and the process is also very tedious (see Appendix 5.5: Lending requirement). The Senior Economist at GOV4 believed that the lack of the required facilities can be linked to finance.

> *"People say there is this fund there but we have already said how accessible are those funds? And the cost of funding today in Nigeria is about 25% so who make such profit on farms?" (Deputy Director at GOV6).*

The Export Credit Officer at GOV3 explained that the exporters might not be able to meet GOV3's financial requirement because it is an intensive and costly process. However, she advised them to seek financial assistance from other agencies such as the Bank of Industry:

> *"The solution might not be coming from our end but might be coming from other agencies like the Bank of Industry. They have schemes to help these people. Bank of Industry have come up with schemes for even people that just graduated and have finished their National Youth Service Corps (NYSC). They try to offer a lower interest rate for loans that are taken" (Export Credit Officer at GOV3).*

Market penetration issue

Currently, Nigerian horticultural products cannot compete in the international market as a result of high transaction costs. The Zonal Controller at GOV1 shared his experience on how Nigeria lost a market opportunity for cut flowers:

> *"Some past four/five years ago, one farm – Tony farm in Lokoja was about to breakthrough on cut flowers especially Rose. I was part of the team that monitored that farm. The flower was actually introduced from Kenya as seedling, so they brought it into the country, they multiply it through multiplication tried to export it to England. And up to three times, they gave them that site, large farm for the rose but I learnt they lost the market due to China competition. They flooded the market with their products and it's a lot cheaper for people to buy China's own at the expense of what people in Nigeria can sell. So we lost that market opportunity and the farm has to close down" (Zonal Controller at GOV1).*

- Inadequate supply

Although many of the exporters prefer to export from privately owned farms, they have to source for supplies from other registered farms to fulfil their demand. This is because of low supply from their farms.

> *"Three of the exporters have farms but they cannot meet demand so they collect from regulated farms. One of them (called Telma) harvest from his own farm; he does not add products from other farmers but only exports twice in 6weeks. Debjos,*

Kiverlin and 6 others are regular, they come every week while others come once in two months" (Principal Agric. Superintendent at GOV2).

"Some people are doing it but not in high quantity" (Deputy Director at GOV6).

- Niche market

Horticultural products are currently exported to meet the demand of Africans in the UK but not the wider market.

"As a result of that they just believe what is coming to UK and other European countries are being consumed by the Africans. And who are the African? Specially Nigerians. So we are used to ugu, utasi, bitterleaf and other things. etc. so they are used to that and when they see it, they feel at home because most of those things they may find them difficult to see over there so they go to the open market and buy" (Zonal Controller at GOV1).

"They just want to satisfy a little market" (Deputy Director at GOV6).

- Non-value added process

Two of the participants namely, the Zonal Controller at GOV1 and the Deputy Director at GOV6, indicated that HPE from Nigeria still lags behind other African countries and currently there is no value being added.

"And no backward integration. We can produce our own and we can also add value. We don't need to export raw tomatoes, we can process it" (Deputy Director at GOV6).

"When I went to Germany, I went to a shop with one of my friends that was living there and I saw some vegetables there. Vegetables that were already cut; not that he was using knife to cut them –already prepared and packaged vegetables. So these are the standards they are talking about!" (Zonal Controller at GOV1).

- Lack of collective action

The Principal Agric. Superintendent at GOV2 advised farmers to organise themselves into a co-operative society because none exist at the moment.

> *"Farmers should also form co-operatives" (Principal Agric. Superintendent at GOV2).*

Export operational challenges

The participants indicated that Nigeria has every opportunity to consistently produce horticultural products if things are done correctly (Appendix 5.6). They emphasised that there is potential for increasing the production and export of horticultural products because of the nature of its soil, climatic condition, and its population.

> *"Opportunities are available here and we can produce more. Our land here are fertile, we grow those products during the rainy season and also off season Without irrigation system, we can still have it in stock throughout the year" (Trade Officer at GOV5).*

The Deputy Director at GOV6 emphasised the significance of exports for improving the balance of trade of a country and he also pointed out the fact that it can also lead to the development of other complementary industries.

According to the interviewees, the challenges in this sector are numerous and are multi-layered. Their responses are as follows:

- Documentation issue

The air freight forwarders lack knowledge of proper documentation.

> *"For example, somebody exported hibiscus to Mexico, because of improper documentation, products worth millions of dollars were rejected and returned. It took the intervention of the Nigeria Ambassador. With proper documents, it need not be rejected" (Deputy Director at GOV6).*

- Non-regularised export system

The export system is not standardised even though there has been recent encouragement by the government. Therefore, it must be well structured.

> *"It's a systemic problem. All these agricultural extension, they are no longer there, demonstrated farms, they are no longer there. Because when you want somebody to do the right thing you first show him how to do it. Nigerians love that; you are a success ok show me how did it become a success? The following day they will jump at it and they will even do it better. But everybody is just doing whatever they like. People just use their intuition to do things, people do it without passion, we are not organised" (Deputy Director at GOV6).*

The Deputy Director at GOV6 narrated a few failed attempts to engage in the export of horticultural products.

> *"Helima farm came up and was exporting roses to UK but all of a sudden, nothing. For example we are in partnership with Tenti green (Appendix 5.6) in Jos now, we even bought shares just to help them. We were encouraging them so much for export. So the export policy really support it and this is the major thing - though what we want to do is value chain, we just don't want people to be exporting raw but fresh product is a different ballgame" (Deputy Director at GOV6).*

He also stated that some foreign investors are actually engaged in the production and export of horticultural products but their impact is still insignificant.

> *"There is this Zimbabwe farmer that move to Kwara at a time. I just mentioned one Mr Marcus man, he is the one doing pineapple in Enugu now. Yeah some people are really interested in that, they are doing it. Some people are doing a lot of things in Nigeria but it's below capacity; I'll say 2% not in high percentage. Those who saw the opportunity and came here and gave it a try. There are lot of Israelis in the country helping people to do good farms but then a lot of things need to be put in place. A lot of people are doing it. Like you look at the big time farmers they are mostly not Nigerians. Like the guy I told you in Kano doing the export of some horticulture – okra, sugarcane, and some things, he's an Asian person. And also only the guy in Tenti farm is a retired Major-General; he's doing very well too.*

Quite a number of people on that sheet too, but they are very very small; they are insignificant. We need a lot of investment on that side too" (Deputy Director at GOV6).

The Deputy Director at GOV6 emphasised the importance of horticulture to Nigeria's economy and indicated that there is a need for the proper organisation of this sector because an organised export system can encourage citizens to export more.

- Lack of export readiness

According to the Deputy Director at GOV6, there is currently no deliberate effort to export. Nigerians lack an export culture and this lack of interest results from a lack of infrastructure and high transaction costs among others. In other words, the country has not yet tapped export opportunities despite its wealth of agricultural resources.

"So export is a deliberate action you see. It's a market of the future, it's not a market now. The point is this: look, Nigerians don't cultivate the habit of export. The issue of imbibing export culture is paramount which for now is not in our society and I tell people we need to export" (Deputy Director at GOV6).

- Lack of export knowledge

The participants emphasised that it is essential to be knowledgeable about exporting requirements however, many of the stakeholders are not conversant with export facts and therefore perceive the export process to be rigorous and thereby find it difficult to meet the criteria required in export destinations. The Zonal Controller at GOV1 expressed his view as follows:

"It's only few that are into that business. So it's just based on understanding that they are trying to meet up these requirements in international community. It's because we as a regulatory body, we try to implement the procedure so that we would not be in lacking state otherwise majority do not see what we are doing as necessary. They want to jump to the other way" (Zonal Controller at GOV1).

Land tenancy issue

According to the Zonal Controller at GOV1 and the Principal Agric. Superintendent at GOV2, most of the farmers currently supplying vegetables for export do not have their own land. They illegally rent land for farming and as a result, they are exploited and therefore feel unsecured in their day to day business.

> *"Then land tenancy is another problem. I'm talking in terms of the farmers now. They don't have permanent site for farming. They lease lands and before harvest sometimes they are sent out of the land. They would have been warning them but they won't listen. For instance, the land at Iyana Iba belongs to the army. The land belongs to the government but some dubious people rent it out illegally. They make money out of them" (Principal Agric. Superintendent at GOV2).*

The Principal Agric. Superintendent at GOV2 therefore advised that the government should assist farmers with the provision of permanent land for farming. However, she stated that there might be a relocation problem for the farmers if the farms are far from their homes.

Domestic market

- <u>High domestic demand</u>

The Deputy Director at GOV6 indicated that the domestic market is big and has been absorbing the quantity of horticultural products currently produced in the country (Appendix 5.6). Moreover, he emphasised that since it is easier to make a profit in the domestic market, the citizens are not considering the exportation of these products.

> *"But the truth is that the market in Nigeria is big. For example, there is a certain farm now in Jos that is producing. But the fact is that he was to produce for export but then ShopRite buys everything that it does. Nigeria is a big market on its own. Being a big market we have the challenge of people not wanting to go into it" (Deputy Director at GOV6).*

On the other hand, when asked why other horticultural products such as carrots, green beans and green peas are not exported from Nigeria unlike Kenya, the Principal Agric. Superintendent at GOV2 indicated that horticultural products have not yet been developed locally to a standard that can be supplied to the international markets as

evidenced by one of the big supermarkets importing rather than buying locally. She expressed her view as follows:

> *"I don't know. We grow all those products but ShopRite supermarket imports them from other countries. If these type of products are grown here and ShopRite imports them, then there is no reason why it should be exported. The last seminar we had focused on this issue. That if ShopRite cannot buy carrot, broccoli, spinach and cabbage from us, then no need to export. We have cabbage in abundance here" (Principal Agric. Superintendent at GOV2).*

- Cultural orientation / attitudinal issue

According to the participants, there are many attitudinal problems that need to be corrected so that Nigeria can maximise its opportunities for HPE. Some of the attitudes indicated by the participants are highlighted below:

- Relaxed attitude towards loan repayment

> *"Because some people just have a general look of GOV3 being government owned. So they automatically feel – it's our money, so what's the problem? Give it to me, I don't have to be uptight on how to return it or how to put it back, it's our money. You people are putting your own; give us to eat. So automatically we've had situations which result to bad deals because people are quite relaxed about it" (Export Credit Officer at GOV3).*

- Poor presentation of Nigerian products

A nonchalant attitude about some cultural practices also affects the presentation of Nigerian products to the international market and this is reflected in the way the products are handled locally.

> *"It's a big problem that even our culture like I said, you will see the way we even pack our vegetables in the market. It's not nice. Even back home, it's not nice but we are used to it. You can see the open market; if we start from that, in terms of even cultivating the habit of packaging it properly, we need to do it properly. Right back home everybody just eat junk. They are not properly packaged; the presentation is bad. Yes that's our life, we are used to it"(Deputy Director at GOV6).*

The Deputy Director at GOV6 advised that the way to increase exports of horticultural products is to ensure the domestic market is first properly organised.

> *"Organise local market. Let's develop the local market to a very good level so that that idea can be improved easily because when it's developed it can be improved easily" (Deputy Director at GOV6).*

Security issue

Most horticultural products are grown in the northern part of Nigeria however there have been recent terrorist attacks in the region. Terrorism is therefore a threat to increasing HPE.

> *"And you know the issue of security because that is the major place where these things are produced but then there is security issue from that part so these are the challenges that we have" (Deputy Director at GOV6).*

Summary

The participants of the six government institutions interviewed have provided their views on the barriers inhibiting horticultural product export by air from Nigeria. Based on the analysis of their responses, the barriers have been discussed under the following themes: neglect of agriculture, existing institutional framework, infrastructure and logistics issues, stakeholders' inadequacy, food safety and quality concerns, high cost of finance, market penetration issue, export operational challenges, land tenancy issue, domestic market and security issue.

These constraints will be evaluated in Chapter six to identify where improvement is required so that this research can make useful recommendations that will advance HPE from Nigeria.

5.9 Conclusion

Thirteen themes have emerged as barriers to increasing HPE from Nigeria. They are: existing institutional framework, infrastructure and logistics issues, market penetration issue, stakeholders' inadequacy, food safety and quality concerns, high cost of finance, export operational challenges, neglect of agriculture, airline market structure, land tenancy issue, domestic market, weather and security issue.

Slight variations exist while comparing the themes across the stakeholder groups (Table 5.7). The analysis of the perspectives of exporters amongst others confirmed all the emergent themes while other stakeholder groups did not indicate some of these themes (blue highlighted boxes show 'not indicated'). It is not surprising to find that farmers indicated only seven out of the overall themes. This is because they mainly emphasised the areas they are knowledgeable about.

The sub-themes are clustered around the overarching themes and are discussed in the next chapter. This also presents a cross analysis of sources of evidence (the multiple perspectives, direct observation and archival records) and the discussion of findings consistent with the research aim, objectives and the body of literature.

Table 5. 7: Main themes and sources of evidence

Overarching themes	FM (3)	EC (4)	FFC (2)	AV (5)	GOV (6)	N0. of interview sources (20)
Existing institutional framework	3	4	2	3	5	17
Infrastructure and Logistics issues	1	4	2	4	5	16
Market penetration issue	3	4	2	3	3	15
Stakeholders' inadequacy	2	4	1	2	5	14
Food safety and quality concerns	1	4	1	3	4	13
High cost of finance	1	4	0	3	4	12
Export operational challenges	0	4	2	4	2	12
Neglect of agriculture	0	2	1	3	6	12
Airline Market Structure	0	4	2	5	0	11
Land tenancy issue	3	1	1	0	2	7
Domestic market	0	1	0	2	2	5
Weather	0	3	1	1	0	5
Security issue	0	1	0	2	1	4

Note: FM - Farmer, EC - Exporting company, FFC - Air Freight forwarding company, AV – Aviation operators, GOV – Government Institutions

The total number of participants in this study is twenty six. However, the focus group interview is considered as one interview source in the NVivo analysis even though seven freight forwarders participated. This accounted for the reason why FFC has two interview sources (a focus group and an in-depth) and the total number of interview sources shown in Table 5.7 is twenty.

Chapter Six: Synthesis of original investigation and Discussion

6.1 Introduction

This chapter presents the key barriers that inhibit the export of horticultural products from Nigeria. Section 6.2 presents additional evidence from direct observations and archival records that supports the findings from the perspectives of key stakeholder groups as discussed in Chapter 5. The results of these original investigations are then discussed within the context of existing literature (Section 6.3) culminating in providing answers to the research questions in order to achieve the aim and objectives of this study.

6.2 Triangulation of original investigation

All sources of evidence were initially reviewed and analysed manually using the thematic analysis approach. The analytical process for interview data was extended with the use of NVivo 10 computer-aided qualitative data analysis software as discussed in Chapter 4. Findings from the analysis of interviews, direct observation and archival records are presented in Chapter 5, Appendices 6.1 and 6.2 respectively. This section presents the triangulation of the key themes based on the convergence of information from all sources of evidence. This approach followed the three steps below:

a) Matching themes: Related themes are clustered into overarching (central) themes, patterns and relationships.
b) Reviewing themes: Central themes and matching sub-themes are further observed to see common ideas.
c) Triangulation: Common themes across the multiple sources of data support the evidence and are presented as the main barriers that have been identified in this research project.

Table 6.1 shows the triangulation of the empirical evidence. It indicates that further evidence from direct observations and archival records (Appendices 6.1 and 6.2) supports the findings from the multiple perspectives of five key stakeholder groups previously illustrated in Table 5.7.

Table 6. 1: Triangulation of the empirical evidence

Overarching themes	FM (3)	EC (4)	FFC (2)	AV (5)	GOV (6)	N0. of interview sources (20)	Direct observation	Archival records (internal reports)
Existing institutional framework	3	4	2	3	5	17	✓	✓
Infrastructure and Logistics issues	1	4	2	4	5	16	✓	✓
Market penetration issue	3	4	2	3	3	15	✓	✓
Stakeholders' inadequacy	2	4	1	2	5	14	✓	✓
Food safety and quality concerns	1	4	1	3	4	13	✓	✓
High cost of finance	1	4	0	3	4	12		✓
Export operational challenges	0	4	2	4	2	12	✓	✓
Neglect of agriculture	0	2	1	3	6	12		✓
Airline Market Structure	0	4	2	5	0	11	✓	✓
Land tenancy issue	3	1	1	0	2	7		
Domestic market	0	1	0	2	2	5		✓
Weather	0	3	1	1	0	5		
Security issue	0	1	0	2	1	4		

Note: FM - Farmer, EC - Exporting company, FFC - Air Freight forwarding company, AV – Aviation operators, GOV – Government Institutions

6.3 Discussion of Research outcomes

This section discusses the findings from the original investigation and the extent to which they are consistent with existing literature. Distortions and contradictory evidence are to be expected between the theoretical axioms and the real life experience as detailed by the original investigation.

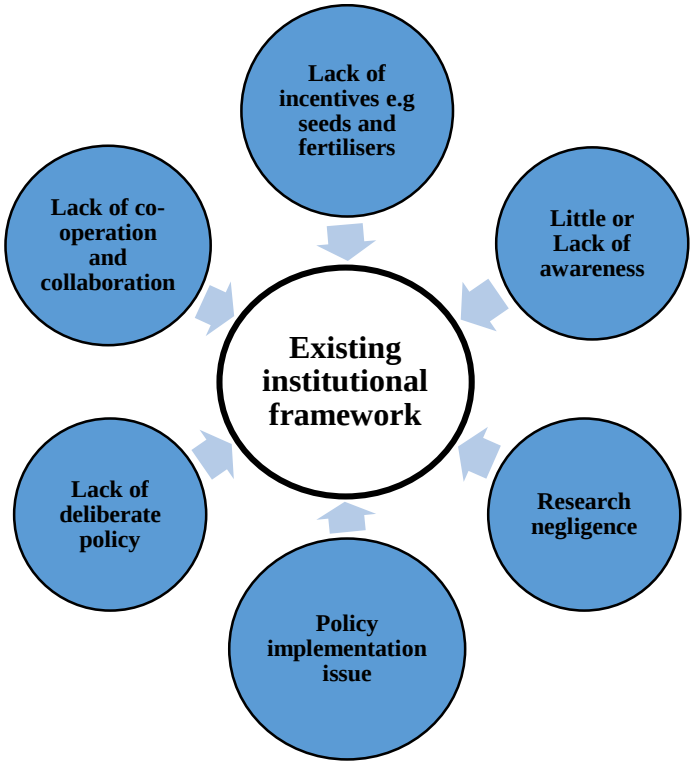
According to the empirical evidence, the supply chain of HPE from Nigeria is currently constrained due to challenges faced in every aspect of the supply chain. The main barriers inhibiting HPE by air from Nigeria to the United Kingdom to date are highlighted in orange in Table 6.1 and are discussed below. They are the existing institutional framework, infrastructure and logistics issues, market penetration issue, stakeholders' inadequacy, food safety and quality concerns, high cost of finance, export operational challenges, neglect of agriculture and the current airline market structure.

The central themes in subsequent Figures are the main barriers. These themes consist of various sub-themes that are clustered around them for better understanding. Selected typical responses are also presented as evidence of these barriers.

6.3.1 Barrier I: Efficient participation in global horticulture value chains requires the support of relevant government institutions in the country of export; this study has found that the existing institutional framework in Nigeria considerably hinders HPE

All except three participants agreed that HPE is inhibited by the structure and practices of existing government institutions. Evidence from direct observation and archival records also supports this finding. This is because the current institutional arrangement indicates a lack of government support. The absence of deliberate policies, policy implementation issues, little or lack of awareness of support services, lack of incentives, lack of intervention in export markets, research negligence and lack of cooperation and collaboration among institutions are related themes that are clustered into the existing institutional framework theme (Figure 6.1).

Figure 6. 1: Existing institutional framework



The following responses confirm this finding:

> *"Not at all! If you have a farm they're supposed to give us fertiliser, we are not supposed to be buying fertiliser" (Marketing Director at EC4).*

> *We are not ready in the sense that this is not something that an individual can do on his own. You need the government backing" (Cargo Manager at AV1).*

Economic reforms depend on institutions because of the significant role they play in ensuring stability and coordinating activities and behaviour in society (Todaro & Smith, 2015; Scott, 2004). Institutions are social structures established to authoritatively guide social behaviour through policies, norms, regulations and schemes. For this reason, the type of established institutions, policies, incentives and human empowerment initiatives provided by a government largely determines the level of growth of a country (Sloman and Wride, 2009). This implies that the role of government is critical in the development of the horticulture sub-sector to meet both domestic and international demands so that it can generate economic growth. A supporting national regulatory framework is essential for developing countries participating in the global trade of horticultural products (Maertens & Swinnen, 2009; Henson & Loader, 2001; Barrett

et al., 1999). This is clearly lacking in Nigeria. With reference to the empirical evidence, a number of issues highlighted in this findings are presented below:

- Lack of collaboration

The institutions that are supposed to provide the relevant services to local suppliers are currently fragmented and this is one of the main issues. Presently, there has been a lack of collaboration because of role conflicts and communication problems that exist between them. The Nigerian Plant Quarantine Service (NPQS) and Nigeria Export Promotion Council (NEPC) are agencies well known to exporters. Though other institutions such as the National Horticultural Research Institute (NIHORT) and Nigeria Export Import Bank exist, they are not known extensively. NPQS is the National Plant Protection Organisation (NNPO) that ensures horticultural products are free of pests and noxious organisms but their role is limited to ensuring compliance to food safety and quality standards.

Meanwhile, other countries exporting high-value horticultural products have sound institutional arrangements. Relevant institutions work in collaboration to provide the required support services to ensure horticultural products meet international standards while also achieving competitive advantage. In so doing, they have been able to improve their agricultural productivity, provide jobs for the unemployed and consequently increase their economic development. An example of such an institutional framework is found in Kenya where institutions such as The Horticultural Crops Directorate (HCD), Kenyan Plant Health Inspectorate Service (KEPHIS), Agriculture, Fisheries and Food Authority (AFFA) and The Fresh Produce Exporters Association of Kenya (FPEAK) collaborate to ensure efficient participation in global horticulture value chains (GHVC) (European Commission, 2014; HCDA, 2013).

Relevant institutions and public-private partnerships have been set up in countries like Kenya (HCDA, 2013) and India (Roy & Thorat, 2008) to provide the required technical and marketing services to local suppliers in order to enhance their market access. This type of backing is crucial for stakeholders, especially farmers, exporters and freight forwarders to ensure that they are well guided but it is important that they also comply with appropriate regulations to tap the benefits that are available.

- Lack of deliberate policies

The Nigerian government has been held responsible for not providing the enabling policies and supporting services that could enhance HPE (Thomas, 2012). Meanwhile, government institutions have important roles to play in structuring the horticultural sub-sector of agriculture by providing the appropriate financial, technical and policy support to producers and exporters (Emlinger et al., 2010). Good policies are needed to guide its human, social, economic, environmental and political affairs. This is why the World Bank emphasises that the lack of appropriate policies by the governments of many developing countries slows down their overall growth and development (Foster & Briceño-Garmendia, 2010).

- Policy implementation issue

Significantly, the existence of relevant institutions and the implementation of appropriate policies present an enabling environment for HPE in Kenya and Ethiopia. Although the Nigerian export policy supports HPE and there has been a recent initiative by the government to focus on the non-oil sector of the economy, the horticultural sub-sector has not been developed to meet local and international demands. This is because a deliberate effort to implement the policy is lacking. This is not surprising because policy implementation is a critical issue in the Nigerian system, affecting every sector of its economy (Koyenikan, 2008; Makinde, 2005).

- Lack of incentives

Local suppliers are not supported through incentives (such as funds, seeds and fertilisers). Other support services such as agricultural extension services that could also enhance productivity no longer exist. The facilities required for some of these agencies to function appropriately are not available, consequently causing delays and rigorous and longer processes.

- Lack of awareness

The farmers and exporters lack awareness of institutions that can provide supporting services. For example, one of the roles of the Nigerian Export-Import Bank is to provide finance for exporters yet the stakeholders interviewed lacked awareness of the financial support opportunities available to them because they are not adequately enlightened on ways to seek such support. Moreover, the exporters rely on government intervention in international markets. They lack awareness of the appropriate pesticides and their correct application.

Relevant institutions are therefore expected to create the awareness required to enhance HPE and to solve the persistent pest control issue.

- Research negligence

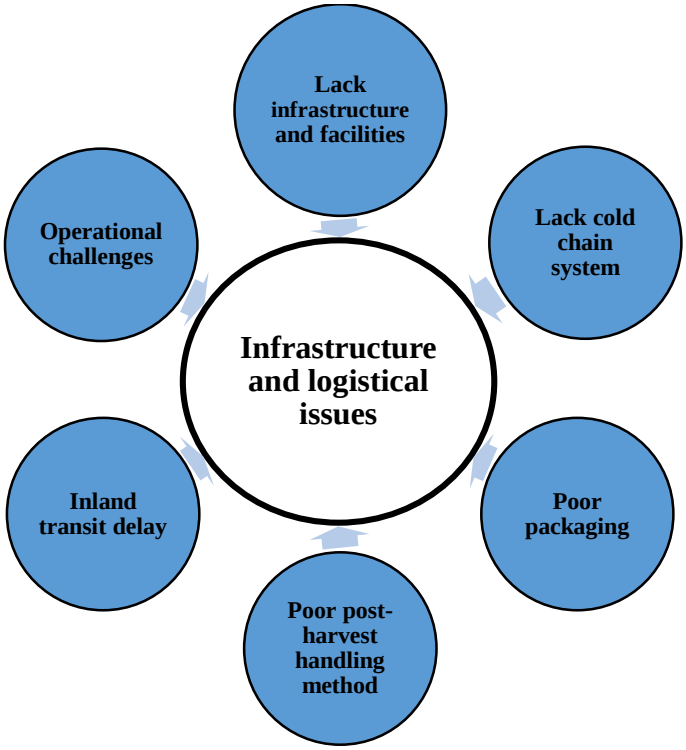
Another important point emphasised is that research has been neglected. Some of the research institutions have collapsed and the few existing ones either, do not communicate their research findings to likely beneficiaries or that suggested recommendations are not followed. Research and Development (R & D) is essential as it allows continuous innovation, which endogenously determines long-term economic growth. Technology and knowledge transfer brings about innovation and development and these are enabled in an environment with R & D institutions (Sloman and Wride, 2009). To enhance horticultural product development in Nigeria, appropriate supply side policies directed at investment in R & D (for example, adequate resources such as laboratories, equipment and skills empowerment) are required.

Even though one of the respondents highlighted several attempts made by the Nigerian government to encourage HPE, it might be inferred through the empirical evidence that the operating environment still lacks a proper internal structure hence HPE will still be hindered. The support of several relevant government institutions and public-private partnerships (involving the stakeholders and marketing experts) has been suggested as a way to enhance good practices, improve productivity and gain faster market access (Naziri et al., 2014; Ouma & Whitfield, 2012; Tallontire, et al., 2011; Narrod, et al., 2009; Roy & Thorat, 2008).

6.3.2 Barrier II: Appropriate infrastructure, technologies and logistical factors are crucial requirements in the supply chain of HPE. In this case, these are absent and therefore imply that the country is not yet ready to participate in the global horticultural value chain

Most participants indicated that infrastructure and logistical issues are some of the major constraints to HPE. This finding was also supported by direct observation and archival records. The sub-themes under this heading are lack of infrastructure (such as road, rail, transport and electric power supply), lack of cold chain facilities (such as storage, standard packing site and cooling vehicles), inland transit delay, poor post-harvest handling and poor packaging (Figure 6.2).

Figure 6. 2: Infrastructure and Logistical Issues



The following quotes from the participants evidenced the infrastructure and logistics issues:

> *"We don't have refrigerated vehicles. Government is telling us that they will give us but we have not seen any" (FM1).*

> *"Packaging; shippers are yet to get it very right because now in the process of handling, the packaging gets damaged. We have issues of cleaning like when they come, some of the products are not well cleaned and some are not dried very well. Those are the major challenges" (Customer Service Manager at AV3).*

Appropriate infrastructure, prompt delivery, proper post-harvest handling, cool chain systems and efficient export logistics are essential to ensure food safety quality and a smooth flow of these time-sensitive agricultural products to their final destinations (Roy & Thorat, 2008). Meanwhile, these requirements are lacking. Issues emphasised in this finding are discussed below:

- Lack of infrastructure and facilities

The lack of infrastructure negatively affects the supply chain of HPE and the export performance of the stakeholders (Foster and Briceño-Garmendia, 2010; Staatz & Dembele 2008; Vega, 2008). The infrastructure needed for the efficient logistics of high-value

agricultural products is a good transport system, storage and distribution facilities. The empirical evidence made clear that Nigeria lacks the road infrastructure to support the smooth logistics flow of fresh horticultural products from farms to the airport. Hence, the poor road network has been hindering the transportation of these products.

Inland transit delay

As a result of a lack of good road and rail networks and the use of inappropriate vehicles, inland transit delays occur thereby causing the onward delay of products to the airport. Inland transit delays have been highlighted as one of the wider constraints to Africa's exports causing a reduction of 7% in the value of export products (Hummels & Schaur, 2013; Freund & Rocha, 2011, Djankov, et al., 2010; Portugal and Wilson, 2009) as well as slowing down growth in this region. Delays can lead to the deterioration of fresh horticulture products due to their perishable nature (Bogataj et al., 2005). If farmers deliver their products late to the airport and perhaps such consignments do not meet the set time for customs screening, the consignments are delayed, leading to waste and losses to farmers and exporters.

- Lack of cool chain system

A temperature-controlled environment is of great importance to these perishables to sustain their freshness (Sales, 2013; Kuo &Chen, 2010; Freidberg, 2009; Panozzoa & Cortellab, 2008; Smith, 2005; Orton, 2000; Paull, 1999). Cold storage minimises spoilage and maintains the quality of time-sensitive products (Rediers, et al., 2009). According to the empirical evidence, a cool chain system does not exist because of the lack of a reliable electricity supply. This affects production and storage. It also causes delay in the export process because some of the facilities at the Nigerian Aviation Handling Company (NAHCO) export terminal require electricity to function.

Air cargo terminals dealing with perishables must be well designed and equipped with cold chain facilities to maintain their temperature throughout the handling and transportation stages (Sales, 2013 and Smith, 2005). Contrarily, the state of the NACHO export cargo terminal is not up to the expected standard because a cool chain system is currently not in existence. Other cool chain challenges are the non-refrigerated handling and transport facilities, a lack of cold storage facilities and the lack of a standardised packing shed.

Horticultural products are prone to quick deterioration since the quality of the product is not maintained throughout post-harvest handling, storage and distribution stages. Poor quality

leads to non-compliance to the food safety and quality standards and this is one of the reasons for the interception of consignments of horticultural products exported to the UK. Thus, interception results in losses to the exporters and discouraged them from subsequent export transactions.

- Poor post-harvest handling

Post-harvest handling is one of the critical issues along the supply chain requiring awareness of post-harvest waste reduction (Shukla & Jharkharia, 2013). Meanwhile, local suppliers lack knowledge of preservation and consequently, the freshness and quality of the products are at risk, leading to non-acceptance and losses.

- Poor packaging

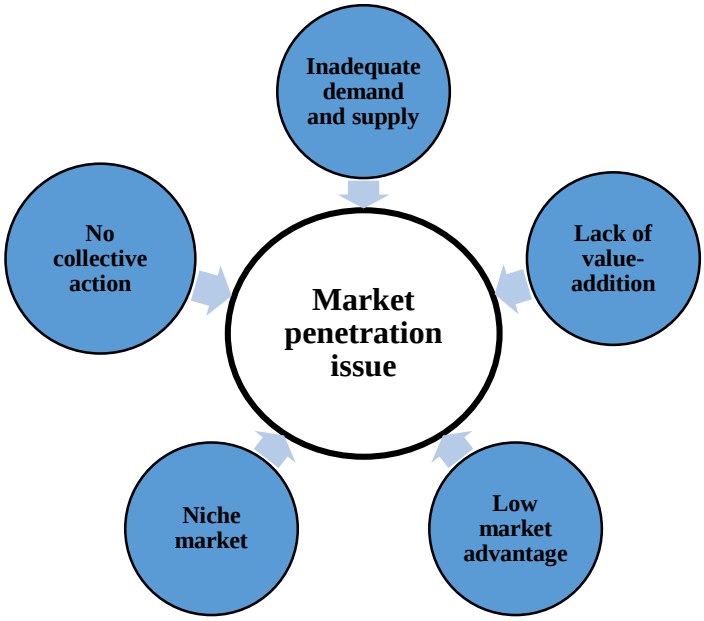
Packaging structure is another challenge; this is why horticultural products from Nigeria have been poorly presented. Some of the stakeholders indicated that exporters are not packaging the products appropriately. Exporters also conceal other items within the packaging which once detected causes confiscation of their consignments.

The availability of a good infrastructure enables a country to engage in many business operations and practices that could further enhance its development. Developing HPE from Nigeria has been a huge challenge due to the lack of appropriate infrastructure and other logistical factors.

6.3.3 Barrier III: Collective action and value-addition are some of the strategies employed by some developing countries to gain faster access to international markets. This study shows that these strategies are not yet applied in the Nigerian HPE case hence, the market penetration issue is an impediment to participation in GHVC.

The direct observation and archival records supported the market penetration issue. Most participants also identified it as one of the principal challenges facing HPE. The sub-themes under this overarching theme are inadequate demand and supply, lack of value-addition, low market advantage, niche market and the lack of collective action (Figure. 6.3).

Figure 6. 3: Market penetration issue



Some expressions that illustrate this theme are as follows:

> *"There is no cooperative society in existence here; we are planning that anyway" (Export Manager at EC3).*

> *"We don't have the market. You know it's when you have the market that you can say I have a market in Europe. Nobody is looking for market in Europe" (Cargo Manager at AV1).*

An oligopsony market structure exists in GHVC. This market structure is characterised by a large number of suppliers but few buyers who have invested extensively in the fresh horticultural products' supply chains (Roger and Sexton, 1994). Since the governance structure in GHVCs is buyer-driven, these buyers (brand-named retailers) are consequently dominating the chains because of their power influence. In other words, the large retailers monitor and control the entire value chain (Asfaw, et al., 2010; Dolan & Humphrey, 2000) and as a result, they determine who their suppliers are. Participation in this type of chain therefore requires adherence to buyers' specifications. Considering these factors, market penetration is one of the main issues due to the following reasons:

- Lack of value-addition

The GHVC is concerned with adding value to horticultural crops to enhance competitiveness. Value-addition such as grading, cleaning, trimming and packing enhances the usefulness of horticultural products and improves convenience for consumption (Goyal & Sharma, 2009). Exporting countries therefore compete through their value-added chains to gain their market share (Gereffi & Lee, 2012). Since several countries compete for market access, more technologically advanced and experienced countries have competitive advantage over others. However, most suppliers in sub-Saharan countries usually face 'crowding out' because they are not meeting buyers' specifications. In the Nigerian case, value-addition is presently lacking and this has hindered the exporters from participating in GHVCs.

- Niche market

Nigerian horticultural products have not yet been targeted for international markets (supermarket chains) but rather, a niche market (African and Caribbean shops). According to the findings, the main purpose of export is to make Nigerians abroad 'feel at home' therefore products exported are largely indigenous ones whereas other countries export horticultural products consumed by wider groups of international consumers, having realised that horticulture has the potential to transform their economy (HCDA, 2013).

- Inadequate demand and supply

Presently, stakeholders lack market and trade information; they are unaware of the opportunities to export horticultural products for consumption by wider international consumers. Current demand and supply is therefore low and inconsistent because exported products are targeted at a small group of consumers. Even the exported products such as corchorus (ewedu) have not been produced in commercial quantities required for export neither have they been developed to meet international market standards and requirements.

- Low market advantage

Exported horticultural products face acceptability challenges. This is due to a low quality, non-compliance to standards and the concealment of unacceptable products within the packaging. Transaction costs are high resulting in higher prices of products. As a result, Nigerian products currently have a low market advantage and this hinders the products from competing in global markets.

- Lack of collective action

Moreover, there is lack of collective action, a strategy used by some other exporting countries to gain faster access to the international markets. Farmers and exporters can achieve economies of scale, acquire relevant skills, have faster access to loan facilities, better technology as well as international market trade information and food safety standards through membership of a co-operative (Shiferaw et al. 2011; Paalhaar & Jansen, 2011; Markelova & Mwangi, 2010). Although individual self-interest and conflict can cause a lack of trust among members, such a society offers several benefits to registered members. The empirical evidence indicated that there are no such societies in existence among the farmers and exporters involved in HPE.

The situation established in this research is consistent with existing literature in so far that small-scale farmers and exporters in the majority of the developing countries have limited capacity to participate in international markets because they do business directly with the market. Since they have low investment capability, a low scale of production and produce poor quality products, they face difficulty in accessing markets and have a low reputation (Shiferaw et al., 2011; Narrod, et al., 2009; Roy & Thorat, 2008).

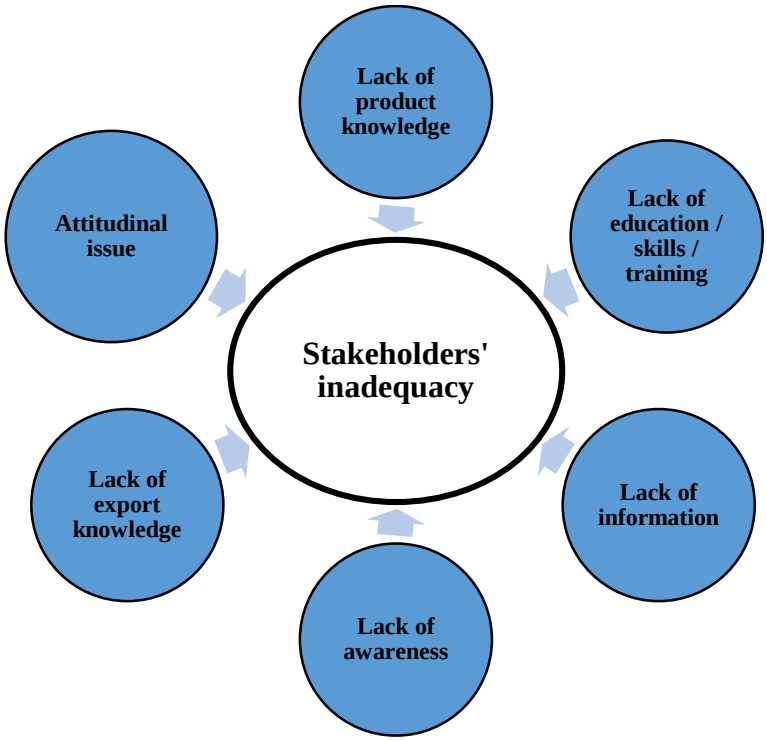
Furthermore, economic growth could be achieved in many developing countries if smallholders participate in GHVC by taking advantage of the synergy of the collective action as a market entry strategy. Collective action can be achieved through cooperatives, producer organisations and public-private partnerships but the involvement of the latter offers the best advantage because of the additional marketing expertise (Roy & Thorat, 2008). A public-private partnership ensures acceptable inputs (such as seedlings, fertilisers and pesticides) are provided. It ensures good agricultural practices are imbibed and ensures economies of scale are achieved. This organisation also ensures compliance to regulations and standards as well as providing marketing information and linking producers and exporters to potential buyers in international markets. Meanwhile, the lack of a collective action results in low market advantage and hinders Nigerian farmers and exporters from penetrating the global horticulture market.

Hence, Nigeria cannot yet compete in GHVCs because it currently targets a niche market, has an inadequate demand and supply, lacks value-addition and collective action among other market entry strategies.

6.3.4 Barrier IV: The capabilities of the stakeholders are essential for participation in GHVC but many stakeholders in the supply chain of HPE lack the appropriate knowledge and skills

Apart from the air freight forwarder focus group participants and five participants from other groups, all others indicated that stakeholder's inadequacy is an important constraint to HPE. This finding is also supported by evidence from direct observations and archival records. The lack of product knowledge, lack of education, lack of information and awareness, lack of export knowledge and requirements and an attitudinal issue are the sub-themes under this heading.

Figure 6. 4: Stakeholders' inadequacy



The evidence of this theme across the multiple perspectives is confirmed below:

> *"Majority of them lack exporting experience but they believe they know. Products should be packaged separately. "For example, they mix up the products concealing other products like bitter roots" (Managing Director at FFC8).*

> *"We have people who are not knowledgeable in this field" (Deputy Director at GOV6).*

Human capital is significant for economic growth in developing countries and a larger stock of human capital brings about innovation (Romer, 1990). Human capital entails investments required to improve productivity in the labour market and other areas of life. This investment includes education, health and on-the-job training (Boccanfuso et al. 2013). Due to the fact that many developing countries have difficulty in accessing global markets because of poor quality standards, low scale of production and low investment capability (Narrod, et al. 2009; Shiferaw et al., 2011), it is essential for stakeholders to possess relevant information about international market requirements. A number of concerns highlighted in this finding are discussed below:

- Lack of awareness / information

An awareness of practices that can enhance global participation is essential. Government agencies do not provide adequate awareness and information to encourage stakeholders involved in HPE. For example, GlobalGAP is a certification for good agricultural practices. It enables farmers to benefit from quality training in order to increase yield, quality and productivity using new methods (Ehlert, Waibel & Mithöfer, 2011). Meanwhile, Nigerian farmers lack awareness of GlobalGAP and their farms are not yet certified for this purpose.

- Lack of education/skills/training

A relevant quality education can empower workers' ability thereby increasing their rate of technological progress (Hanushek, 2013). In other words, suppliers' capabilities are essential to participate in the GHVC as non-adherence to export regulations can adversely affect export performance. The empirical evidence showed that most of the stakeholders are uneducated and are not qualified to engage in export. They do not comply with export procedures, regulations and market requirements.

For instance, farmers have not had formal agricultural training. Farming is presently carried out using traditional methods and instincts. Thus, new innovative methods and skills are not applied because of a lack of knowledge. Even when they are aware, their strong aversion to change keeps them to the old ways of doing things. The freight forwarders are also not professionals; they lack adequate documentation expertise. They also lack formal training because it has become a skill anyone can carry out as long as they familiarise themselves with the export cargo warehouse. Meanwhile, consignments are being confiscated in importing countries due to improper documentation.

- Attitudinal issue

There is also the lack of labour despite a growing population because of the wrong perception of farming. It is perceived to be for the illiterates, therefore, there is a poor attitude towards farming. The subsistence farmers have been left to their fate with few machines to increase productivity. Additionally, corrupt practices are attitudinal issues that affect the export process and stakeholders' efficiency. For example, exporters boycott the export process and do not provide the required documents for export since they can bribe their way through to get their consignments exported.

- Lack of product knowledge

The nature of the product is another challenge in the supply chain of HPE. For instance, most of the stakeholders, especially the farmers and exporters, lack knowledge of post-harvest handling. Since fresh horticultural products have a short shelf life, it is a risk to the farmers and exporters. Therefore, the product's nature does not encourage citizens to engage in HPE.

- Lack of export knowledge

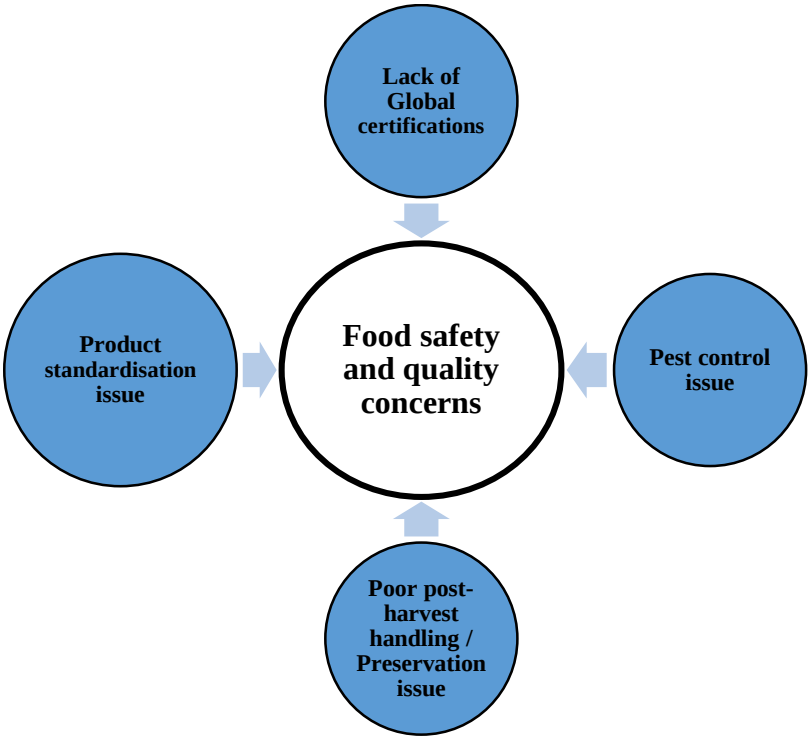
The farmers and exporters lack knowledge of export requirements. Horticultural products must comply with food safety and quality standards and other requirements in importing countries yet some of the respondents complained that they do not know the appropriate pesticides and the required Maximum Residual Level (MRL) of pesticides expected. MRL is the maximum level of pesticide residue legally permitted on plants and plant products when the right proportion of approved pesticides applied is consistent with good agricultural practices (European Commission, 2016).

Overall, stakeholders lack proper training, which can be attributed to a lack of funding and this has consequently affected the development of the horticulture sub-sector. The majority of the stakeholders in the supply chain of HPE from Nigeria have a poor export culture and lack awareness and the knowledge required for HPE.

6.3.5 Barrier V: Food safety and quality are critical issues that affect the horticulture export trade of developing countries

All the participants except the air freight forwarder focus group and six participants from other groups indicated a food safety and quality concern as one of the important barriers to HPE. Direct observation and archival records support this finding. The product standardisation issue (non-compliance to standards), lack of global certifications, pest control and preservation issues are grouped under this heading.

Figure 6. 5: Food safety and quality concerns



The food safety and quality issue as a constraint is confirmed in the expressions below:

> *"We don't know may be during hot season in Nigeria, fly are resistance to the chemical. We've not been able to really identify that because to the best of our knowledge we know we do fumigate and then we follow the rules so we don't see why it will get here and the Defra will still tell you they saw white flies. It's a major problem because there's usually a lot of seizures during winter time" (Marketing Director at EC4).*

> *So for me, I think the major challenge is standards" (Senior Economist at GOV4).*

Fresh horticultural products are time-sensitive products with a short life span. Severe scrutiny of these products becomes imperative unlike all other non-food related items because of their impact on human health. Rigid standards are therefore formulated in international markets and each country of import to prevent the spread of diseases. Issues emphasised in this finding are presented below:

- Product standardisation issue

International markets are keen about product standardisation to safeguard the health of consumers of food products. Freshness, quality and taste of these products must be retained to meet importing countries' requirements and consumer demand. Standards set for regulating food safety and quality in global trade include: the Hazard Analysis and Critical Control Points (HACCP) system (FAO, 2016d); Occupational Health and Safety Standards (OHSS) (Belwal & Chala, 2008); Global Good Agricultural Practices (GlobalGAP) (Mithofer et al. 2011; Paalhaar & Jansen, 2011; Narrod, et al. 2009; Roy & Thorat, 2008); Codex Alimentarius standards (FAO/WHO); and International Organisation for Standardisation (ISO). Consistent with existing literature, non-compliance to standards and quality requirements is one of the challenges of exporting horticultural products.

Product standardisation is a major concern generally in Nigeria and not only to HPE. Participation in the GHVC requires high quality products (Henson et al., 2011; Trienekens and Zuurbier, 2008). Meanwhile due to a low knowledge of food safety and quality standards, poor agricultural practices and the lack of incentives from the government, farmers buy seeds at affordable prices not putting quality into consideration. Consequently, consignments have been facing interception challenges in the UK because of non-compliance to food regulation standards. According to the empirical evidence, it might not be easy to totally eradicate pests because of the existing structure of farms. Regulated farms are situated near non-regulated ones and sometimes, exporters add untreated products to their supplies in order to fulfil export demand.

Respondents acknowledged that food regulations are necessary to safeguard consumers' health, however, these stringent standards act as non-tariff barriers affecting the export trade in developing countries and have been preventing their market entry into GHVCs (Jaffee & Henson, 2005). One of the concerns raised was that some of those standards might not be the right measure for checking the quality compliance of Nigerian exported horticultural products, since they are indigenous products that are different from the widely consumed types. This

study argues that this opinion may not be tenable since the necessary cold chain facilities that can maintain the product quality are lacking. Also because of poor post-harvest handling, this has been indicated as an issue in the supply chain of HPE.

While Nigeria is a signatory to some of the international conventions and standards, non-compliance with food safety standards is caused by the lack of awareness of the required standards, non-operational policies, a lack of information and a poor institutional framework (Marucheck et al. 2011; Chemnitz and des Landbaus, 2011; Fuchs et al., 2011). Consequent to these challenges, the exporters blamed the Nigerian government for not providing adequate support to enhance their compliance to appropriate standards.

- Lack of global certifications

GlobalGAP is a global certificate for certifying horticultural farms fit for supplying horticultural products for export. Suppliers of horticultural products to global markets are therefore required to apply good agricultural practices in their production process (Henson et al., 2011). Meanwhile, GlobalGAP does not currently exist in Nigeria because farms have not yet met the requirements. The lack of good agricultural practices causes food safety and quality issues because quality seeds are not planted and other good agricultural production procedures are not followed.

- Pest control issue

Pest control, post-harvest handling and preservation are critical factors in the supply chain of HPE (Shukla & Jharkharia, 2013). Pests are often detected in the consignments of countries exporting plants and plant products to the UK even in the consignments of the major exporting countries (European Union Notification System for Plant Health Interceptions [EUROPHYT], 2014). Pesticides are therefore applied to eradicate pests and other harmful organisms on the products to protect them and ensure healthy consumption. A phytosanitary certificate accompanies consignments of plants and plant products such as fresh horticultural products to indicate that the consignments are free of harmful organisms. It also confirms that such consignments have been certified fit for consumption having undergone the export certification process handled by the National Plant Protection Organisation (NPPO) in the country of export (FAO, 2016e).

The empirical evidence showed that pest control is one of the challenges. White fly is a popular harmful organism detected in Nigeria's consignments according to the empirical evidence. This

is consistent with the report notified in EUROPHYT (2014) (Appendix 6.3) and it is usually detected more during the winter period in the UK. Thus, consignments have been intercepted frequently and stakeholders are yet to understand why products are rejected. They stressed the fact that the consignments were fumigated and screened before export and are accompanied by phytosanitary certificates. Interception discourages HPE because when a consignment is rejected, it results in losses to the exporters. The interception simply implies that the certification process does not follow a thorough process so the equipment, the laboratory and staff training might need to be evaluated for improvement.

- Poor post-harvest handling

Good post-harvest handling is essential to preserve the quality of horticultural products. Pre-cooling is required after harvest and products should be kept within a cold chain system where the temperature is regulated until it reaches the consumer (Sales, 2013). The empirical evidence confirmed that poor post-harvest handling affects the quality of these products and this leads to non-compliance to food safety and quality standards. Currently, the products are not well preserved after harvest; the inland transport, the pack shed and the export terminal are not refrigerated to maintain the freshness, quality and taste of these products.

The large retailers (most powerful actor in the chain) consistently monitor the horticultural value chain for compliance to food safety and quality standards (Asfaw, et al., 2010; Dolan & Humphrey, 2000). Therefore, the lack of GlobalGAP, poor post-harvest handling and the pest control difficulty make it difficult for Nigeria to participate in the global trade of horticultural products. In other words, the absence of factors that can enhance compliance to food safety and quality standards has hindered the exporters from attempting to access supermarkets in the UK. Relevant government organisations must therefore work together to promote local standardisation.

6.3.6 Barrier VI: The high cost of finance is a deterrent to horticultural export success in some developing countries including Nigeria

All the participants excluding the freight forwarders' group and six participants from other stakeholder groups indicated that the high cost of finance discourages HPE. Evidence from archival records supports this finding. The sub-themes under this heading are the high costs of transaction and inaccessible credit facilities.

Figure 6. 6: High cost of finance

The quotes below provide some evidence relating to this finding:

> *"Too many charges from customs; there's high exploitation. The vegetables that come by air, the major carrier is BA (British Airways). Their charges are also high. When you add up all these, you wouldn't want to do your fullest volume as you would do. so you know you can't afford it so it's not encouraging export at all" (Marketing Director at EC4).*

> *"And it is actually a very intense credit appraisal process. It's quite intense, a lot of conditions do come into play and some people get exhausted during this process" (Export Credit Officer at GOV3).*

The transaction costs of exporting are currently high and suppliers of these products lack access to credit facilities, which could have provided operating capital funds for business expansion. These issues are discussed below:

- <u>High transaction costs</u>

High transaction costs discourage the export of fresh horticultural products because of their negative effect on income and profit margins. The transaction costs include a wide range of costs and charges (cost of production, transportation and other trade costs). Presently, the production cost for horticultural products is high because of high cost of farm inputs. Farmers

complained that they have to buy costly seeds, fertilisers, fumigation chemicals and other necessities.

Consistent with existing literature, exporters pay exorbitant prices for freight costs and this limits exports from developing countries (Belwal & Chala, 2008; Devlin and Yee, 2005). Currently, the freight charges differ from one airline to the other; whilst the official charges are low, the overall charges are high. Charges by the cargo handling company, customs and other agencies performing the pre-export and documentation checks are part of the transaction costs. Despite the fact that some of the charges are unofficial, an exporter is obliged to pay otherwise the consignments are delayed and might eventually miss the scheduled flight. This act of bribery and corruption also increases transaction costs.

The lack of collective action among the farmers and exporters also results in high transaction costs. Since the government does not also incentivise them, they spend heavily and this discourages them from exporting.

- Inaccessible credit facilities

Limited finance and inaccessible credit facilities have been identified as one of the barriers to horticultural export success in some developing countries such as Ethiopia (Belwal & Chala, 2008) and Kenya (HCDA, 2013). The evidence from the original investigation supports existing literature that suppliers do not have access to loans. Easy access to loans enables farmers and exporters to carry out their business transactions more effectively but when the conditions for borrowing are unfavourable, it becomes difficult. The cost of borrowing is currently high - loan application fees costs $160 (₦50,000), credit appraisal requires almost 150% security charges and the interest rate is about 25%.

A high interest rate is not encouraging for the farmers and exporters because at the end, the profit might not be much. One of the roles of a co-operative society is to enable members to gain quick access to loans. However, a co-operative does not exist among the farmers and exporters. They are also uninformed and lack awareness about where and how to secure loans. The majority of farmers are illiterate and do not have securities to meet the financial requirements and this makes it difficult for them to run their businesses smoothly.

A database system where credit checks can be speedily carried out is not available so the loan security requirement is high. Because loan repayment is a risk to the financial institution, the credit appraisal process is usually strict. The attitude of Nigerians to loan repayments also

contributes to the strict requirements because some feel reluctant to pay back, especially when the financial institution is government-owned.

This high cost of finance is attributable to the lack of infrastructure and appropriate facilities, high cost of energy, inefficient institutions and poor export conditions. Because of the high cost of finance, Nigerian products might not be able to compete in international markets unless the right measures are put in place to reduce this cost.

6.3.7 Barrier VII: Despite the fact that exporting requires compliance to global standards and regulations, for Nigeria, this is characterised by an operating environment that is by no means conducive, thus discouraging HPE

All participants except for the farmers' group and five participants from other groups indicated that export operational challenges currently hinder HPE. This finding is also supported by the direct observation and archival records. The sub-themes are the lack of export readiness, non-compliance with export requirements, unregularised export system, limited working hours, improper documentation and illegal acts.

Figure 6. 7: Export operational challenges

The evidence of this finding is indicated in the quotes below:

> *"It hurts me a lot when I see how things are going even the people in the export terminal there, they are just doing it anyhow they don't even understand nothing" (Marketing Director at EC4).*

> *"We have like 7 or 8 regulatory agencies. Every one of them – the anti-bomb will sign, NDLEA will sign, Ministry of Agric. will sign, police, customs, all of them will sign" (Cargo Manager at AV1).*

Presently, the export setup lacks thoroughness from end to end. This causes inefficiency in export operations and invariably affects HPE. A number of issues emphasised in this finding are discussed below:

- Lack of export readiness

Export readiness requires the support of export promotion bodies that can provide appropriate guidelines because of their expertise and experience to facilitate the export trade (Van & Viviers, 2005). According to the empirical evidence, the Nigeria Export Promotion Council (NEPC) has been providing supporting services such as market and trade information to exporters but the problem lies in the lack of enabling infrastructure and facilities. The absence of an enabling environment reflects the lack of export readiness. This has therefore incapacitated NEPC's efforts to promote HPE.

- Unregularised export system

A proper export set up depends on the export structure laid down by the government. The export warehouse is very small with limited facilities compared to the import warehouse. The cargo terminal is also not a temperature-controlled environment yet, is filled with consignments, exporters, freight forwarders, airline representatives, cargo handlers, customs and about eight representatives from other government agencies who are involved in documentation and security checks. Although the IATA standards are presented as a model for export operations, the exporting environment is not standardised. It is an unhealthy work environment and this affects the quality of time-sensitive products. The existing export process is also rigorous because of the number of security and documentation checks required. It is currently an arduous process for the exporters because too many agencies are involved performing almost the same responsibilities.

- Limited working hours

Operational hours at the export terminal may affect the export of time-sensitive products. The export terminal opens for operations 8am to 5pm with an hour break between 12noon and 1pm on Monday to Friday. Irrespective of the flight departure time, pre-export checks occur during these periods and screening time depends on customs officers whose work period is between 9am and 4pm. For example, the British Airways' (BA) flight departure time is 11:20pm but the products would normally have been delivered to the export terminal for necessary pre-export checks no later than 2pm. Otherwise, the consignment will miss the scheduled flight because screening by the customs stops at 4p.m.

- Longer lead times

High-value agricultural products are greatly affected by time delays (Djankov et al., 2010) meanwhile the export process is predominantly a manual process. There is no database to perform security and documentation checks, so each of these agencies repeats the process causing further delays. Consequently, the lack of automation results in a longer export process, errors and delays. Moreover, an average waiting time of seven hours between pre-export checks and the flight departure time increases the lead time and subjects consignments to quick deterioration.

This is contrary to the practice in Kenya where exporters submit their preferred pre-export inspection time and flight departure time through the Electronic Certification System (ECS). These exporters ensure their consignments are presented three hours before the flight departure for pre-export checks in compliance with regulations (European Commission, 2014). The product nature is not given utmost priority in Nigeria so the freshness and quality of these products are adversely affected. In essence, longer lead times affect the product quality and this invariably leads to non-compliance.

- Illegal acts

Pre-export checks lack thorough processing because of the illegal acts involved. Bribery and corruption are issues of concern in addition to falsification of the authority's signature in order to gain approval. These practices affect the efficiency of export operations.

- Documentation issue

Documentation is one of the critical issues and as notified in EUROPHYT (2014), improper documentation is one of the reasons for intercepting consignments from exporting countries. The empirical evidence shows that air freight forwarders are not proficient therefore they do not guide exporters appropriately in preparing the required documents even though they know the roles of a freight forwarder. Similarly, many of the exporters are not knowledgeable in this aspect.

- Non-compliance with export requirement

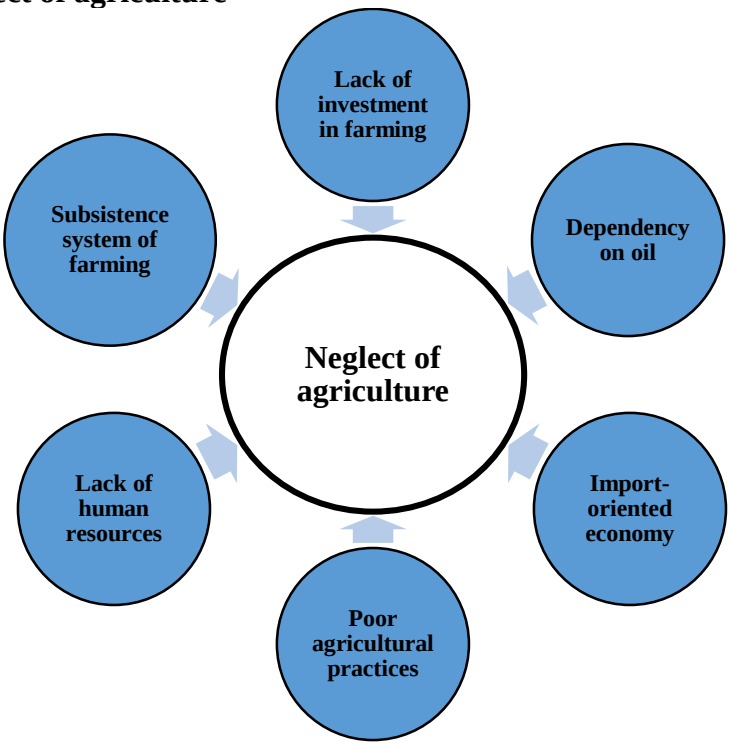
Stakeholders do not follow the export process thoroughly. As a result, they do not conform to export regulations. For instance, global certifications necessary to participate in the global horticultural chain are not owned by any of the farmers and exporters. This is the reason why exported products are mainly considered for a niche market where no such certifications are required compared to the supermarket chains where GlobalGAP and other standards are applied if exporters are allowed to do business.

According to one of the respondents, HPE might be a future market but not a current market since the operating environment and attitude of stakeholders are not currently appropriate. At present, the export process is not standardised and this might continue to hinder HPE from Nigeria unless a deliberate effort geared up towards improvement takes effect.

6.3.8 Barrier VIII: Agriculture has been neglected and perceived as a business or way of life for 'low level people'; hence the lack of adequate investment in agriculture adversely affects HPE

Except for the farmers' group and five participants from other groups, all noted that neglect of agriculture is one of the main constraints to HPE. The archival records supported this evidence. It is however surprising that none of the participants in the farmers' group actually stated that neglect of agriculture is an issue. The sub-themes under this heading are high dependency on oil, lack of investment in farming, subsistence system of farming, lack of human resources, import-oriented economy and poor agricultural practices.

Figure 6. 8: Neglect of agriculture



This finding is supported by the following expressions:

> *"We have good land mass, land that doesn't even need fertiliser to grow. Good land mass, it's just that the government instead of them having interest in agriculture, all their attention is just geared towards oil Thank God that the oil is dying now so we want the new government to focus on agriculture" (Business Manager at AV2).*

> *"GAP is one of the things we should have like I told you – good agricultural practice. Just like I said, we jump some of these things and this makes our export not to follow good practice." (Deputy Director at GOV6).*

Investment in agriculture can enhance global food security, environmental sustainability and alleviate poverty. However, to promote innovation and the efficient management of production and farm practices at several levels, the support of an enabling environment and appropriate policies is required (FAO, 2014). Meanwhile, agriculture is not yet seen as a serious business and a means to economic growth in Nigeria. The following issues are highlighted in this finding:

- Lack of investment in farming

The empirical evidence showed that HPE is inhibited because there has been no adequate investment in agriculture. This is due to the lack of appropriate policies and enabling environment. All previous investment in agricultural development programmes introduced by past governments under the World Bank has stopped. Whereas some developing countries (such as in Asia and sub-Saharan Africa), having realised the benefits of agriculture to their economy, have recently been producing a larger share in the world production of fruit and vegetables and the countries involved have experienced great economic impact (FAO, 2013).

Horticultural products are high-value agricultural products that yield better income than traditional agricultural products (Baglioni, 2014; Maertens & Swinnen, 2009; Belwal & Chala, 2008). However, the perishable nature of these time-sensitive products requires the efficient management of their supply chains to mitigate the risk of spoilage and subsequent losses to producers and consumers. Therefore, the producers of horticultural products are empowered with appropriate government policies and provided with incentives to encourage exports. Nigeria's case is different to that of other sub-Saharan African countries such as Kenya, Senegal and Ethiopia where HPE has been contributing to their economic growth. Suppliers of horticultural products are presently not encouraged nor incentivised because Nigeria lacks an export culture.

- Lack of human resources

White-collar jobs are preferred by the people because of the low level of recognition attributed to people in farming. Another reason is that agriculture generates lower revenue compared to crude oil. Agriculture has therefore been left for the uneducated. Consequently, there is a shortage of labour in the Nigerian agricultural sector.

- Dependency on oil and an import- oriented economy

Nigeria has been a type of mono-economy country and has depended on its petroleum resources to fund imports since the oil boom in the 1970s. The country is predominantly an import-oriented economy. Imported products are preferred to Nigerian-grown products even when there is an abundance of the products. To this extent, agriculture has been neglected.

- Subsistence system of farming and poor agricultural practices

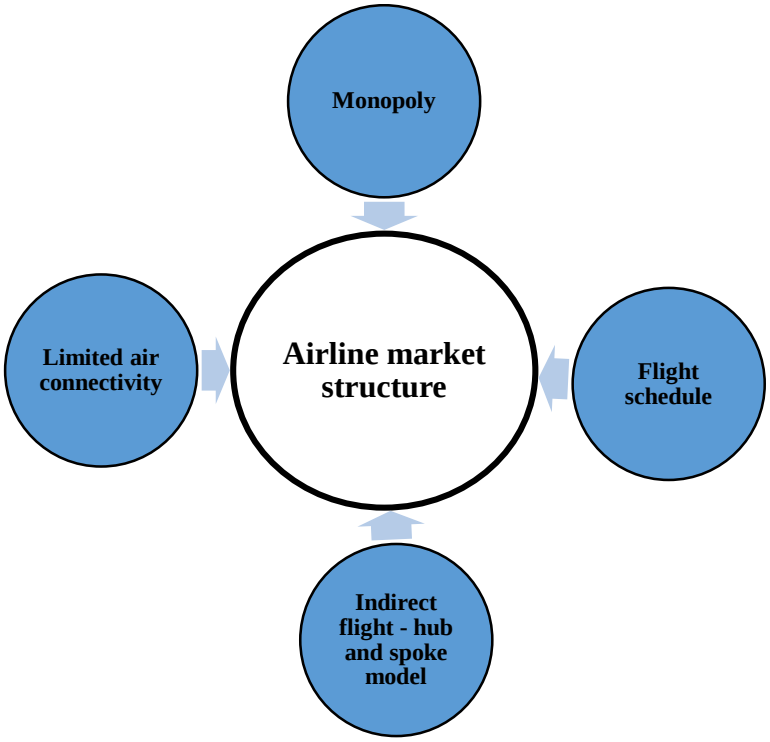
Currently, Nigeria does not engage in the commercial farming of horticultural products for export. In addition, subsistence farmers lack good agricultural practices because they lack knowledge of new agricultural processes and methods. GlobalGAP requires investment in farm infrastructure and equipment and its implementation requires traceability, pest management and record keeping practices. For example, investment in greenhouses can increase productivity but this is lacking among subsistence farmers in many of the developing countries because of the cost of compliance (Henson et al., 2011; Asfaw, Mithöfer & Waibel, 2009; Narrod et al., 2009; Humphrey, 2008). A greenhouse is very expensive. It requires adequate funds to purchase the required equipment and to attend proper training sessions. Subsistence farmers are not yet financially capable of investing in them.

Despite the abundance of agricultural resources in Nigeria, infrastructure and policies that can enhance agricultural development and export are not provided. Consequent to this, agriculture has been neglected and this has had a great impact on HPE.

6.3.9 Barrier IX: Limited air connectivity, the lack of competition among airlines and indirect flights are the attributes of the existing air transport logistics of horticultural products. Hence, the airline market structure hinders HPE.

All participants, except those in farmers' and government institutions' groups indicated that the airline market structure hinders HPE. The direct observation and archival records also support this finding. The lack of response by these two stakeholder groups suggests that they have limited knowledge about the air cargo services. For example, farmers do not deal with airlines; this therefore explains the reason why they did not indicate that the airline market structure is an issue. The sub-themes under this heading are monopoly, flight schedule, limited air connectivity and indirect flights (hub and spoke model).

Figure 6. 9: Airline market structure



The following quotes illustrate this finding:

> *"The vegetables that come by air, the major carrier is BA (British Airways). Their charges are also high because they don't have competition so they just do it anyhow" (Marketing Director at EC4).*

> *"Only British Airways schedule flight move in the evening and get to Heathrow in the morning. They operate direct flight. Other airlines like Virgin Atlantic, Virgin Nigeria, also operate direct flights but they move in the mornings and get there in the evening. So, the products get to the customer the next day. That is the reason we prefer British Airways" (Managing Director at FFC8).*

Although the air cargo operational procedure in this case is consistent with steps outlined in Chang et al. (2011), a number of issues were raised about the current state of the airline sector. These issues are identified as reasons why it has been difficult to export high-value agricultural products and are discussed as follows:

- Monopolistic airline sector and flight schedule

The airline market structure for the transportation of high-value agricultural products from Nigeria to the UK is monopolistic. That is, it is dominated by a foreign airline. Competition strengthens a market enabling customers to make their choices from alternatives. Companies therefore improve their services so that they can achieve a competitive advantage. However, competition is lacking in this situation. The major carrier charges high freight rates and thrives even when they deliver poor handling services. Evidence shows that British Airways (BA) has competitive advantage over others and this emanates from a direct flight, time of flight departure, longer market presence and its existing relationship with freight forwarders. Although BA and Virgin Atlantic operate direct flights to London Heathrow, Virgin Atlantic's time of flight departure is 8:30 am. Their time of departure is not favourable to the exporters because the pre-export process starts at 9am. Due to the time–sensitivity of the products, exporters are left with no option other than to transport their goods through BA, which departs at 11:20pm.

- Indirect flight (hub and spoke model)

Most airlines operate a hub and spoke travel model from Nigeria to the UK. This transportation structure requires an airline to get to its host country before connecting to designated destinations. A hub and spoke model increases transit times and may affect the quality of the products (Djankov et al., 2010) hence, it is more advantageous and economical to use a direct flight for perishables. Meanwhile, direct flights are limited from Nigeria to the UK and this affects HPE.

- Limited air connectivity

Better integration into GVCs require a well-built air cargo connections (Shepherd & Shingal, 2016) however, limited air connectivity is also one of the challenges to increasing HPE from Nigeria. This is because horticultural products cannot be supplied to meet demand from other markets such as in Asia.

Improving HPE necessitates the existence of international aviation routes operated by a home carrier (Nigerian airline) as done in Egypt and Kenya. This could help solve the connectivity issue and direct flight difficulty. In so doing, exporters' preference for a same day flight departure and on-time delivery could be met but this is still lacking.

6.4 Summary

Strong interrelationships exist across several issues identified as barriers to HPE from Nigeria. For example, export operational challenges and stakeholders' inadequacy have impact on food safety and quality issues. Also, high cost of finance and stakeholders' inadequacy have impact on market penetration issue. Figure 6.10 presents the interrelationships for better understanding and it is worth highlighting the enormous impact that other barriers have on food safety and quality issues. These are the barriers that must be addressed for Nigeria to increase HPE and subsequently participate in global trade of horticulture products.

Figure 6. 10: Interrelationships across identified barriers

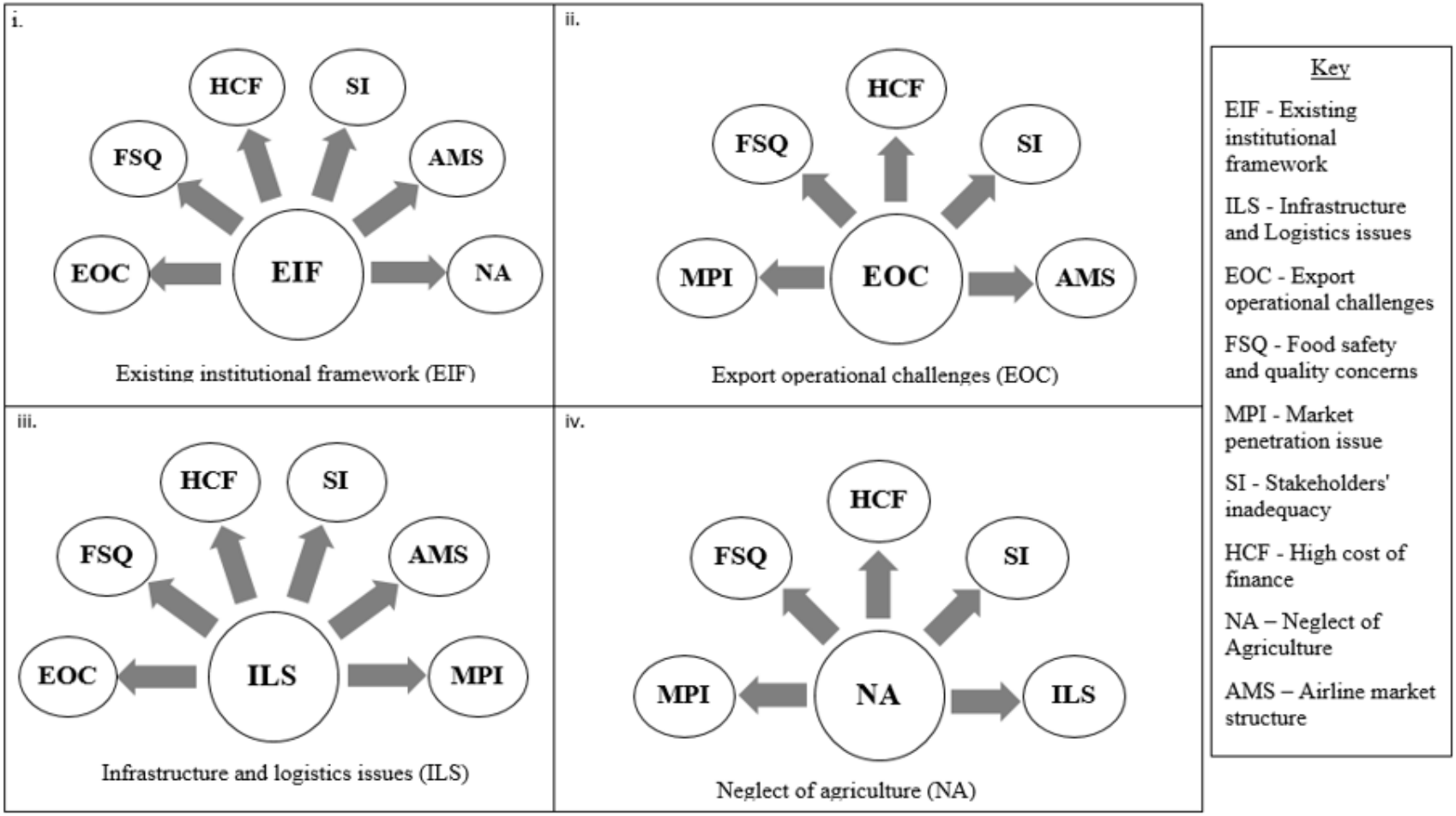
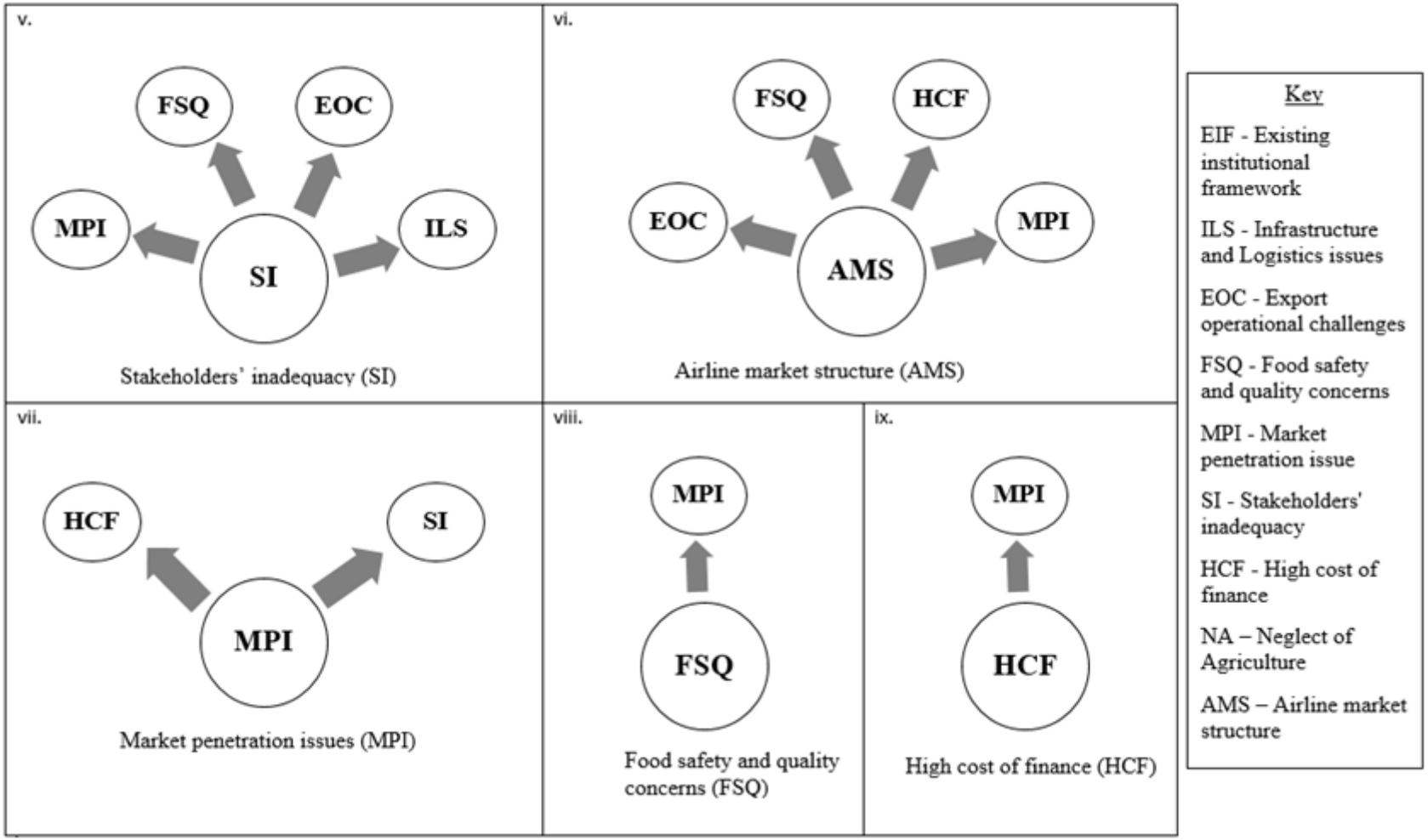


Figure 6.10 (Continued)



6.5 Conclusion

This chapter has presented the main barriers to HPE from Nigeria. The findings suggest that the current operational environment, the absence of value-addition attributes and stakeholders' inadequacy hinder HPE from Nigeria and subsequently its participation in global horticulture value chains. The operational environment includes existing policies and the institutional framework, the state of infrastructure and logistical factors, the market penetration approach, level of compliance with food safety and quality standards, level of compliance with export requirements, accessibility to finance, state of export operations, state of horticultural sub-sector of agriculture and the current airline market structure.

An important interrelated relationship exists across several factors required for efficient participation in GHVC and for it to yield economic growth. It requires a deliberate involvement of the government (Sloman and Wride, 2009) and a supporting national regulatory framework (Maertens & Swinnen, 2009; Henson & Loader, 2001; Barrett et al., 1999). It necessitates investment in enabling infrastructure for HPE (Sales, 2013; Kuo &Chen, 2010), investment in agriculture and GlobalGAP (Henson et al., 2011; Asfaw et al., 2009; Narrod et al., 2009; Humphrey, 2008). Moreover, it requires the application of international market penetration strategies such as engaging in value-addition processes and collective action (Shiferaw et al. 2011; Paalhaar & Jansen, 2011; Asfaw, et al., 2010; Markelova & Mwangi, 2010; Dolan & Humphrey, 2000). It involves compliance with food safety and quality standards and import market requirements (Mithofer et al. 2011; Paalhaar & Jansen, 2011; Henson & Humphrey, 2010; Narrod, et al., 2009; Maertens & Swinnen, 2009; Trienekens and Zuurbier 2008; Roy & Thorat, 2008). It also requires awareness of pest control, post-harvest handling and preservation (Shukla & Jharkharia, 2013). All these factors are required for an efficient supply chain management of HPE in sub-Saharan countries, especially Nigeria.

The long-run relation between export and economic growth is difficult to establish in Nigeria (Bahmani-Oskooee & Economidou, 2009). This could be explained by the fact that Nigeria's export level is still low therefore its impact on economic growth may not yet easily be determined. Moreover, economic growth occurs at a cost requiring higher investment (Sloman and Wride, 2009) which Nigeria currently lacks. Meanwhile, it cannot be concluded outrightly that the participation of Nigeria in GHVCs will lead to economic growth because it is not only export growth that determines economic growth in developing countries but the combination

of other factors such as investment in physical and human capital, trade openness, improved terms of trade, macroeconomic and political stability.

The current state of the operational environment and the aforementioned barriers negatively affect the participation of Nigeria in GHVCs. This research study has clearly shown that Nigeria is not yet in a position to really benefit from HPE. A deliberate effort is required for HPE in addition to improving the current operational environment and investing in other factors that can lead to economic growth and the wider economic development of Nigeria.

Chapter Seven: Findings, Recommendations and Conclusions

"We have not been able to penetrate the supermarket because we are not there yet!" (Marketing Director at EC4).

"You see a lot of multi-level problems. We just need to be serious like you have observed. We need to take it as a challenge of the country and work it out" (Deputy Director at GOV6).

7.1 Introduction

The research aim as stated in section 1.3 is to examine the potential for increasing the export of horticultural products from Nigeria, especially by air, to the United Kingdom. Since there is limited research that has investigated the barriers pertinent to HPE from Nigeria, the research has sought to bridge this gap to contribute and expand existing knowledge. The dearth of research relating to this topic area can in part be attributed to the fact that there has been a high concentration on the oil sector as the main source of national income in Nigeria to the detriment of the non-oil sector.

This research project has embarked on an in-depth understanding of the case of HPE from Nigeria since findings from literature have indicated that HPE is a means to increasing economic growth in developing countries, especially in sub-Saharan Africa, even though many countries have challenges to integrate into global markets. Multiple perspectives of five stakeholder groups were explored through different forms of interview using a single-case (embedded) research design in addition to direct observations and archival records. The research design adopted allowed a better understanding of the topic and its reality while the multiple sources of evidence allowed the triangulation of empirical evidence, ensuring the credibility of the research findings. This approach has enabled the study to identify the existing barriers that inhibit the increase of HPE from Nigeria.

This final chapter summarises the research findings in accordance with the research objectives set out in section 1.3. The quotes above are evidence that Nigeria is not currently fully participating in global horticulture value chains, largely as a result of the key barriers that have been identified. Recommendations are made in section 7.3 to improve the supply chain of HPE to enable the country to participate and compete in international markets. This chapter also

provides responses to the research questions in section 1.2 and recommendations are made accordingly.

It evaluates the extent to which the research objectives have been achieved and discusses contributions to existing knowledge with a comprehensive understanding of the challenges and the general state of HPE from Nigeria. Furthermore, it presents the limitations of the research and scope for further research.

7.2 Summary of main findings

- **Existing institutional framework**

This research has found that although the Nigerian government has recently considered its non-oil sector to augment its economy, the horticulture sector has not been supported with policies and strategies that can enhance its development. As a result, there has been a lack of collaboration among government institutions and they have not been effective in providing the guidance required for its development. Similarly, there are no relevant organisations such as public-private partnerships that provide technical and marketing services to local suppliers. In essence, their integration into global trade is hugely affected.

The research showed that some research institutions have collapsed and the lack of research and development (R&D) to a large extent has prevented improvements to agricultural productivity. Many of the stakeholders lack awareness of the standards expected in export markets; the perishable nature of the products is not given the utmost attention required; and the fact that the local suppliers are not supported with incentives has jeopardised the trade in horticulture products in international markets. The research therefore concludes that inadequate enlightenment and the lack of support services has consequently affected the export performance of suppliers.

- **Infrastructure and logistics issues**

The research has found that infrastructure and logistical factors required for enhancing HPE are not available. Most importantly, a detailed knowledge of post-harvest handling and packaging is currently lacking. A cold chain system required for extending the life span of horticultural products in order to maintain their nutrients, freshness and overall quality is lacking. The implication is that the products are at great risk because of their proneness to quick deterioration. In addition to the fact that the export terminal is not a temperature-controlled

environment, non-refrigerated vehicles are used to transport products and there is no standardised packing facility. The lack of good road and rail networks causes inland transit delays and affects the smooth interchange from farms to the airport. This has accounted for the reason why exported products are mainly supplied from Lagos and its neighbouring states instead of rural areas where there is an abundance of agricultural land.

- **Market penetration issue**

The research has observed that there is currently a supply chain which needs to move more to a value chain. Low-value products are exported from Nigeria instead of shifting into higher value activities like some other sub-Saharan African countries. A limited knowledge of international markets and exportable products that attract high premium is the primary reason why suppliers' focus is mainly on satisfying the needs of 'only Nigerians abroad'. Essentially, products are usually supplied to specialist shops rather than focusing on the greater benefits of selling high-value products for wider international consumption. As a result, demand and supply have been low and inconsistent.

The research also found that local suppliers are neither registered members of a co-operative nor of a producer organisation. Consequently, each of them at present does business directly with their buyers. The lack of collective action adversely affects them resulting in several benefits such as economies of scale, easy access to loans, expert advice and better technology not being realised. As a result, a low quantity and quality of products are exported.

- **Stakeholders' inadequacy**

It has further been shown that the stakeholders, especially farmers and exporters, lack appropriate capabilities required for exporting horticultural products. They lack product knowledge, adequate information and appropriate training which has been affecting their proficiency to export acceptable products. Additionally, attitudinal issues such as corrupt practices affect stakeholders' efficiency preventing them from carrying out their distinct roles. As a result, products are consistently confiscated because they do not comply with international trade regulations and standards.

- **Food safety and quality concerns**

It is clear that non-compliance to food safety and quality standards is a critical issue in the supply chain of HPE from Nigeria. Since suppliers do not have global certifications such as

GLOBALGAP, they cannot attract global buyers. This lack can be attributed to poor agricultural practices prominent in the production process and other activities. A poor knowledge about preservation, pest control, food safety and quality standards required in export markets has been causing non-compliance and the rejection of exported products. This is a result of a poor institutional arrangement and the lack of an operational policy which could have provided essential guidelines.

- **High cost of finance**

The research has found that the overall cost of exporting these products is excessive due to high transaction costs and a lack of credit facilities. A high transaction cost is caused by a high production cost, a high freight cost and other unofficial charges (often accumulating from corrupt practices). It also reflects the absence of vital infrastructure and facilities required throughout the upstream of the supply chain from the farm to the airport.

The cost of borrowing is currently high and the conditions are also not favourable therefore hindering easy access to loans which could provide financial support to enhance suppliers' export business transactions. However, the research findings showed that loan securities have required extra effort and resulted in additional cost incurred by the credit appraisal process due to regular default on repayment terms. The issue of defaulting explains why access to loans has been difficult. In addition, the high cost of finance adversely affects profits thereby discouraging export and it also leads to higher product prices which can result in low competitive advantage in the market.

- **Export operational challenges**

The findings ascertained that exporting conditions are not yet conducive and this, to a great extent, implies a lack of readiness for HPE. Documentation checks are carried out by eight different government agencies enacting similar duties causing the export process to be arduous, thereby further discouraging export. Automation is vital for a speedy export operation yet manual processes are still predominant in the current export operation causing errors, delays and longer lead times. Moreover, bribery and corruption problems have impacted on export operational efficiency. They have made it easy for unacceptable products and improper documents to be forwarded to export markets causing product rejection and a poor reputation for the country's products.

Even though the volume of horticultural products is still low, the size of the export terminal may discourage export. The export warehouse has a small capacity compared to the import warehouse and this is an indication that Nigeria's imports exceed its exports over time. The operational hours at the NACHO export terminal are between 8am and 5pm but this largely depends on the customs officers whose time of screening operation starts at 9am and ends at 4pm. Irrespective of the flight departure time, which is usually 11:20pm for British Airways, pre-export checks have to be carried out within the work period. This limited work period has a significant detrimental effect on the product quality because of the longer lead times between pre-export checks and the flight departure time.

- **Neglect of agriculture**

Furthermore, a subsistence system of farming is mostly practised in Nigeria whereas the global trade of horticultural products requires commercial farming to be able to benefit from economies of scale and therefore enhance competitiveness. This research has found that the lack of success in the production and export of horticultural products implies that the Nigerian government has not invested adequately in the development of its horticulture sector. The neglect of agriculture at large is attributed to high dependence on oil and preference for imported products despite the fact that Nigeria is primarily an agrarian economy. Most citizens that engage in horticulture production are subsistence farmers with a low level of education because agriculture has been perceived as a venture for the unschooled. As a result of their lack of appropriate knowledge of new innovations and the lack of adequate enlightenment by the government, they have poor agricultural practices which cannot earn them the certifications required for global trade such as the GLOBALGAP.

Educated citizens prefer white collar jobs (especially in oil companies and banks) with higher incomes instead of embarking on agricultural production which requires more time and resource investment before generating a reasonable income. Although Nigeria has an increasing population of 177.5 million in 2014 and 182.2million in 2015 with 7.5% rate of unemployment in 2013 (World Bank, 2016), the lack of financial empowerment has accounted for why there has been a shortage of labour in the agricultural sector. This clearly affects HPE.

- **Current airline market structure**

A critical issue also needing urgent attention is the fact that the current airline market structure is monopolistic. It has been shown that British Airways (BA) has some advantages over other airlines in transporting the products to the UK owing to factors such as a direct flight, longer market presence, a flight departure time which is favoured by the operational hours for pre-export checks at the NACHO export terminal and discounted services offered to air freight forwarders. An indirect flight (referred to as a hub and spoke model operated by airlines) affects HPE because horticultural products are perishable and require timely delivery. Since suppliers prefer direct flights to safeguard the product quality, other airlines are not able to share the market with BA. As a result of the aforementioned attributes, BA's freight cost is higher than others and the effect is that its monopoly makes effective competition impossible. Additionally, limited air connectivity is a deterrent to increasing HPE because even if there are demands from other markets, such as from Asian countries, they cannot be supplied.

According to the research findings, the main barriers inhibiting HPE by air from Nigeria to the UK are the existing institutional framework, infrastructure and logistics issues, the market penetration issue, stakeholders' inadequacy, food safety and quality concerns, the high cost of finance, export operational challenges, neglect of agriculture and the current airline market structure. Unlike previous studies, this particular study has found that neglect of agriculture and airline market structure are particularly important constraints to HPE. These issues point towards the lack of readiness for participation in the global horticultural value chain because they are multi-layered and strong interrelations and patterns exist across them. The implication is that mixes of different strategies and resources are required to address these issues which may not be easy to achieve. Despite the constraints, the decline in global oil prices is an impetus for improving the horticultural sub-sector to meet both local and international demands.

7.3 Recommendations for improving the supply chain of HPE from Nigeria

This research provides twelve recommendations as to how the identified barriers could be resolved to increase HPE from Nigeria in order to generate economic growth and development. These are made as recommendations to policy makers, industry players (agriculture, airlines and cargo airports) and other stakeholders who are seeking to increase the export of horticultural products from Nigeria. They are:

1. Establishment of a supporting national regulatory framework

Given the fact that the horticulture sub-sector has not been supported, the Nigerian government should set up policies and strategies that will enable its development to meet both domestic and international demands. This development will require the establishment of supportive government institutions and professional regulatory bodies (or revitalisation of the existing ones) with clear roles and objectives as to who should provide appropriate guidelines in terms of work methodology and compliance to regulatory standards. An example of such an institution in Kenya is 'The Horticultural Crops Directorate (HCD) which implements the Horticultural Order of the Agricultural Act CAP 318 newly revised in 2011 (Agriculture and Food Authority [AFA], 2015). Horticulture production and its marketing both domestically and globally has been the principal role of HCD. In order to ensure that international market standards and regulations are strictly adhered to, a compliance scheme could be launched across Nigeria up to the community level (Cook et al., 2012) while obligatory certifications that will enable its horticulture products to participate in GHVCs should be obtained and the process should be adequately implemented.

2. Investment in agriculture

The benefits to be derived from investment in agriculture cannot be overemphasised. It can enhance global food security, environmental sustainability and alleviate poverty (FAO, 2014). Yet, Nigeria's agricultural sector has been marginalised because of a huge national reliance on its oil sector. To achieve the benefits of agricultural development, family farms need to be supported by an enabling environment and appropriate policies that can promote innovation at several levels (FAO, 2014). Innovation in this instance is defined as the efficient management of production and farm practices with the aim of improving performance. The Nigerian government must focus on its agricultural sector and should set innovative policies to encourage investment in agriculture and facilitate a commercially-oriented sector.

3. Infrastructure development

There needs to be substantial improvements in infrastructure so as to encourage citizens to engage in production and export. The provision of effective logistical infrastructure that would link suppliers from farms to regional airports and also to international airports is essential. The Nigerian government could liaise with the private sector to jointly invest in roads, rail, energy, agricultural equipment, cold chain systems, irrigation systems and greenhouses. Such infrastructural development could attract both domestic and foreign investors to facilitate technology transfer which is critical for suppliers to shift into high-value activities that can increase their export earnings.

4. Extension of production to rural areas

Similarly, the horticulture sub-sector should be supported to ensure that Nigeria does not only participate in the GHVCs but that it benefits from the resulting economic development. Production for export should be extended to rural areas where there is a massive amount of agricultural land instead of the concentration in Lagos where there is less potential for extensive horticulture production. This would lead to an increase in supply to meet the economies of scale required in international markets. In order to expand to rural areas, vital resources and facilities should be made available for improving the capabilities of the suppliers and the development of designated rural locations.

5. Promoting collective action

Moreover, participation of smallholders in the global trade of horticultural products requires their co-operation which is the reason why suppliers in some other sub-Saharan countries such as Kenya are members of co-operatives and producer organisations where they have been benefitting from the synergy of collective action. The suppliers should be organised into a co-operative so that they can be guided by technical experts and linked to global buyers by trading experts. This guidance would be of huge benefit to them and their membership in this type of organisation would also position them for easy access to loans, economies of scale, technological knowledge and this would consequently result in greater efficiency and quicker market penetration.

6. Provision of financial and incentives support

In order for suppliers to expand their export business and acquire the necessary skills, the Nigerian government should provide financial support and incentives. A reduction in interest rates could reduce the defaults that occur during the loan repayment period. The provision of incentives such as quality seeds and fertilisers would also enable the production of quality products for both the domestic and global markets.

7. Establishment of public-private partnerships for stakeholders capacity development

Developing suppliers' capabilities is of utmost importance to increasing horticulture exports. These perishable products crucially require adequate product knowledge, good agricultural practices, pest control management, post-harvest handling, proper documentation, packaging and export knowledge that is currently lacking. A considerable benefit can only be achieved if suppliers' efficiency is improved through appropriate education, training and expert guidance.

A horticulture export development strategy must focus on improving the competence of other stakeholders in addition to suppliers. Stakeholders' inadequacy is one of the issues identified as a barrier to HPE whereas stakeholders' efficiency is critical for successful exporting. There is a need to invest in human resources so as to ensure all that have a role to play in the upstream of the supply chain are aware of internationally accepted practices and standards. This knowledge is vital because it will enhance their skills and efficiency.

In order to enhance stakeholders' competencies and increase suppliers' chances of participation, public-private partnerships should be set up. Public-private partnerships are organisations that can provide technical support, trade and marketing information, training and extension programmes needed to improve supply chain efficiency (Ouma, & Whitfield, 2012; Roy & Thorat, 2008) which is lacking according to the research findings. Such an organisation would not only link the suppliers with global buyers but would ensure their compliance with appropriate regulations.

8. Restructuring of air cargo market

It is important for Nigeria to reform its air transport policy in order to position its air transport sector for integration into GVCs and to benefit from economic prosperity (Ismaila, et al., 2014). The air cargo sub-sector is critical if Nigeria is to increase HPE. The Nigerian government in conjunction with the aviation authority should provide essential facilities that can enhance HPE at regional and international cargo airports. The cargo airports of other countries should therefore be examined as a guide to facilitate both structure and operational set up. Additionally, the Nigerian government should allow a privately-owned national carrier to be set up and should allow greater autonomy of its management. Hence, effort should be made to re-launch the former Nigerian Airways to embark on international routes and the national carrier should operate direct flights to export markets. This might create competition in the airline market structure to bring about better results as an improvement strategy; this is by no means easy to achieve.

9. Youth Involvement

Nigerian citizens (especially the youth) should be encouraged and incentivised to engage in horticulture production and export activities (Akpan, 2010). A knowledge of the requirements for successful exporting and the challenges faced in international markets is critical so they should be educated and well enlightened. This study believes that if youths are empowered, there is a possibility that they will apply new innovations and technologies required for good agricultural practices which the traditional farmers have ignored.

10. Promoting a shift into high-value activities

Participation in GHVCs will require exported products to include internationally consumed products rather than just indigenous products. Going by the research findings, it is recommended that a move from the export of low value products to high value activities could have a significant economic impact on agricultural productivity, citizens' welfare and the standard of living. This upgrading strategy has been indicated as an economic-oriented approach that developing countries can adopt to enhance their participation and competitive advantage in the global market (Gereffi & Fernandez-Stark, 2011; Gereffi, 2005). However, it requires huge investment and a mix of approaches which is not easily achieved. This strategy needs to be applied in the case of HPE from Nigeria and there is therefore a greater need to invest in value-addition processes throughout the supply chains of these products. Essentially,

the provision of equipment, logistical infrastructure and appropriate training would be required to bring about efficiency.

11. Research and Development (R&D)

R&D is central to horticultural productivity and upgrading because it brings about innovation. In order to assist suppliers to engage in good agricultural practices and value-adding activities, adequate knowledge transfer is required. Similarly in order to apply appropriate pesticides, post-harvest handling methods and other supply chain strategies such as traceability, reduced lead times and on-time delivery, vital information should be accessible. The Nigerian government should encourage R&D by providing an enabling environment for research institutions and improve the quality of higher education so as to enhance suppliers' capabilities and facilitate their penetration into global markets. Higher education institutions of learning, public and private organisations could collaborate and work closely with reputable international research bodies for a better outcome. Grants could also be offered to stimulate research interest and innovation. Implementation of the research outcomes is equally vital to encourage researchers to discover more ways of improving this sector.

12. Investment in automation systems

An investment in automation systems is essential because it can increase human efficiency and consequently speed up processes in all phases of business operations although it can result in reduced employment. Automated facilities should be provided to streamline export operations and aid pre-export activities so that it can speed up pre-export processes and prevent longer lead times, delays, errors and other documentation issues that are currently present. While recognising the fact that the issue of corruption is not likely to suddenly end, automation could reduce the involvement of many agencies at the export gate and this might subsequently reduce bribery and corruption.

The research makes the above recommendations in order of significance and they are provided to improve the state of HPE from Nigeria. Accomplishing these recommendations can facilitate the country to catch-up with other African countries that are already participating in GHVCs. They may not, however, be easily achieved. The onus to strategically improve HPE is placed on the Nigerian government and its institutions, private organisations and relevant stakeholders.

While the recommendations highlighted above are very important to increase the export of horticultural products from Nigeria, the thesis suggests that the quick win is to obtain Global GAP certification for one or two of the farms and seek trade contract agreements with a few retailers. The accreditation of such farms for global trade will create confidence from the retailers' perspective and will also encourage foreign investors (who are interested in opportunities that could yield a high return on investment) to buy-in. After this has been achieved, there is a need to create awareness of the benefits of this approach to key stakeholders in the supply chain of horticulture export.

7.4 Evaluation of the aim and objectives of the Research

This section discusses the extent of achievement of the stated research aim and objectives.

Objective 1: *To explore the determinants of economic growth in developing countries.*

This research reviewed literature on economic growth and its determinants. The factors that enhance economic growth, especially in developing countries were explored through books, journal articles and publications from reliable sources. The research was able to discuss the role of export in economic growth and development having found out that export is one of such factors although there is lack of consensus on the evidence of export-led growth. This objective was achieved in Chapter 2.

Objective 2: *To analyse the significance of HPE in the economic development of selected developing economies*.

The research investigated horticulture export in Egypt, Kenya and Nigeria. Egypt and Kenya were selected because they are leading exporters of horticultural products among the African countries. The research was able to summarise their top export products, export markets, competitors, enablers of horticulture export and their challenges in global trade. Publications from reliable sources such as the FAO, World Bank, UNCTAD and the European Commission were reviewed. The analysis of their horticulture export is presented in section 3.3. This has enabled this objective to be achieved.

Objective 3: *To identify the extent of the current supply of HPE from Nigeria, in particular to the United Kingdom.*

The research gathered data from stakeholders that have experience of horticulture export from Nigeria. The research collected data on supply chain activities since the supply chain of HPE

was the scope of the research. The data were analysed and presented using diagrams and descriptive details. Even though it was difficult to determine the actual volume of export, analysis of the interviews, direct observations and archival records led the research to effectively understand the state of HPE from Nigeria. The research shows that HPE has not yet been supported with appropriate national policies and adequate investment that can enhance its global participation and economic returns. This is discussed in detail in Chapters Five and Six. It is maintained that this objective has been achieved within the scope of this study.

Objective 4: *To identify existing barriers that inhibits horticultural products' export from Nigeria.*

The research has conducted field surveys where data were collected from five important stakeholder groups (namely, farmers, exporters, air freight forwarders, aviation operators and government institutions) through different forms of interview using semi-structured questions. The interview questions were asked to explore the research problem. The case study concentrates on analysis of the barriers to HPE from Nigeria to the UK. The analysis of data from direct observation and archival records was used to validate the analysis of the interviews. The multiple sources of evidence led the research to identify the key barriers hindering HPE which are also supported by secondary data from reliable sources such as FAO and the European Commission. Conceptual diagrams and descriptive details of the analyses are discussed in Chapters 5 and 6. Although only stakeholders in the upstream of the supply chain are considered, this research objective has been achieved within its scope.

Objective 5: *To make recommendations as to how these barriers might be reduced, in particular with respect to the supply chain in order to increase the volume, quality and value of HPE from Nigeria.*

The research was able to offer recommendations by exploring publications relating to global value chains (GVCs) (Gereffi & Fernandez-Stark, 2011; Gereffi, 2005) and horticulture export in other developing countries (Ouma, & Whitfield, 2012; Roy & Thorat, 2008). This helps in identifying strategies and practices that can be applied to improve the supply chain of HPE from Nigeria in the light of the research findings. It draws attention to the fact that the recommendations are by no means easy to achieve. This objective was achieved in section 7.3 of this chapter.

The aim and objectives have been achieved within the scope of the research.

7.5 Contribution of Research

This research has contributed to the body of knowledge on HPE from developing countries in the following ways:

- Key issues that inhibit increasing HPE have been identified. These outcomes provide significant insights concerning the challenges that need to be addressed for Nigeria to increase its HPE. This information is particularly useful for developing the horticulture sub-sector in Nigeria to meet both local and international demands.
- The research raises an awareness of global horticulture value chains (GHVC) and present an opportunity for the supply chain of HPE from Nigeria to shift to a value chain.
- The empirical investigation provides an in-depth understanding of the state of horticulture export in Nigeria.
- The research found that the neglect of agriculture and the structure of the air transport market were important constraints to HPE. This is different to the conclusion of other studies.

7.6 Limitations of the Study

This research has offered new insights but as common to all research, it also has peculiar challenges. There are three limitations which are discussed below:

- Although the downstream of the supply chain could have been an additional source for generating data on barriers to HPE from Nigeria, the study focused only on the upstream of the supply chain.
- Another limitation was the absence of statistical data on export volume. This would have provided more insight about export trends and possibly allow a more quantitative approach.
- The research participants (especially the farmers and exporters) were those present at the export cargo terminal whereas selection from a functional record would have been rather more unbiased.

7.7 Scope for further research

Given the fact that many developing economies, especially sub-Saharan African countries are seeking ways to integrate into the global market to increase their economic growth, they are diversifying into exports of horticultural products. Of great importance is the need to know and learn the best way to become integrated in GHVCs to reap the benefits. Essentially, adequate knowledge is central to participation. Thus, the research suggests the following areas for further research:

I. To include participants in the downstream of the supply chain (retailers, importers, specialist shops and relevant organisation such as The Department for Environment, Food and Rural Affairs (Defra) as an additional source for generating primary data on barriers to HPE from Nigeria.

II. To analyse the participation of Nigeria in GHVC using the GVC framework.

III. To investigate possible ways in which relevant organisations could collaborate to create awareness of the importance of horticulture development and implications for participation in global horticulture value chains.

IV. In relation to the need for developing countries to move into high-value activities to be able to integrate into the global economy, an investigation could be carried out to examine value-adding activities required at each stage of the supply chain for each horticultural product and the impact of the value-adding attributes on marketability.

V. To investigate how the air cargo sub-sector can be developed to enhance the export of horticultural products. It would be useful to shed light on the role of air cargo in horticulture export development.

VI. To examine the impact of youth participation on the growth of horticulture sector in exporting countries. Such research would discover how participation in GHVCs has affected their income and engagement strategy required for involving more youths in horticulture.

Appendices

Appendix 4.1: Case Study Protocol

Case Study Protocol – Farmers & Exporters

	Questions
1.	**Participant Personal Data**
	Name: ..... Gender: …….. Age: …… Educational Qualification: …… Job title: …….. Level of Management: ……. Years of exporting/work experience: ……
2.	**Firm Information**
	Company Name: ..... Address: ..... Major type of business/Role: .....
3.	**Product and Export Market Information**
	Export products: ..... Number of Export market: ..... Export market: .....
4.	**The Supply chain**
	What are the procedures you follow from production to the airport for export? What are the barriers you encounter in exporting these products at the moment? What are the regulations / factors that affect the exportation of your products? How do you identify potential buyers? How do you develop relationship with them?
5.	**Enabling environment**
	Do you receive any government support (such as loan, facilities) OR are you a member of a cooperative society? If yes, what do you benefit from the society? What are the opportunities available to export horticultural products in Nigeria?
6	**Recommendation and others**
	What would you recommend as the solution to these problems? Any additional information or comments?

Source: Developed by the Researcher

(b) Case Study Protocol – Air freight forwarders

	Questions
1.	**Participant Personal Data**
	Name: ..... Gender: …….. Age: …… Educational Qualification: …… Job title: …….. Level of Management: ……. Years of exporting/work experience: …….
2.	**Firm Information**
	Company Name: ..... Address: ..... Major type of business/Role: .....
3.	**Product and Export Market Information**
	Export products: ..... Number of Export market: ..... Export market: .....
4.	**The Supply chain and its issues**
	Who do you deal with? Individual /cooperatives? What are the documents required for horticultural products' export? Do the exporters meet the export requirements to ease your documentation process? What are your challenges in the documentation process? What are the barriers being encountered in exporting these products at the moment?
5.	**Enabling environment**
	What are the opportunities available to export horticultural products in Nigeria?
6.	**Recommendation and others**
	What would you recommend as the solution to these problems? Any additional information or comments?

Source: Developed by the Researcher

© **Case Study Protocol – Aviation operators**

	Questions
1.	**Participant Personal Data**
	Name: ..... Gender: ……..
	Age: …… Educational Qualification: ……
	Job title: …….. Level of Management: …….
	Years of exporting/work experience: …….
2.	**Firm Information**
	Company Name: .....
	Address: .....
	Major type of business/Role: .....
3.	**Product and Export Market Information**
	Export products: .....
	Number of Export market: .....
	Export market: .....
4.	**The Supply chain and its issues**
	What facilities are available at the airport for handling and transporting horticultural products? What are your operational procedures? (E.g. scanning and security of air freight). Are the operational procedures in conformity with the expected standards (if compared with any other African countries in this regard)? Do you have enough capacity to handle current supply? How often do you transport horticultural products? Why? (If it is not regular) What are the barriers you encounter in the handling and transportation these products at the moment?
5.	**Enabling environment**
	What are the opportunities available to export horticultural products in Nigeria?
6.	**Recommendation and others**
	What would you recommend as the solution to these problems? Any additional information or comments?

Source: Developed by the Researcher

(d) Case Study Protocol – Government Institutions

	Questions
1.	**Participant Personal Data**
	Name: ..... Gender: …….. Age: …… Educational Qualification: …… Job title: …….. Level of Management: ……. Years of exporting/work experience: …….
2.	**Firm Information**
	Company Name: ..... Address: ..... Major type of business/Role: .....
3.	**Product and Export Market Information**
	Export products: ..... Number of Export market: ..... Export market: .....
4.	**The Supply chain**
	Are there infrastructures to implement global trade standard? Does Nigeria have access into the European (UK) market with regard to horticultural products? Is there national policy that support horticultural products' export in Nigeria? Is there a liberalisation policy that allows foreign investors to be engaged in production and export of horticultural products in Nigeria? What are the barriers Nigeria is facing in exporting these products at the moment?
5.	**Enabling environment**
	What is the government doing to resolve these issues? What are the opportunities available to export horticultural products in Nigeria?
6	**Recommendation and others**
	What would you recommend as the solution to these problems? Any additional information or comments?

Source: Developed by the Researcher

Appendix 4.2: Request Letter

Department of Logistics, Operations and Hospitality Management
The Business School
Queensgate Huddersfield, UK
HD1 3DH.

.....
.....
.....
.....

Dear Sir,

Request for Study Participation

I am Oluseyi Felicia Olaitan, a Doctoral researcher in the department of Logistics, Operations and Hospitality Management at the University of Huddersfield, researching into "The potential for the exportation of horticultural products (flowers, fruit and vegetables) by air from Nigeria".

I humbly request your audience and consent for an interview to discuss the barriers hindering the exportation of horticultural products from Nigeria and also the opportunities available for exporting these products for the purpose of my doctoral thesis. The interview is scheduled to take between 30-55 minutes.

During the interview, you will be expected to respond to certain questions as touching your experiences regarding horticultural product's export from Nigeria. I promise that your response will be strictly confidential in line with my University's research ethics policy and will be used strictly for the purpose of this PhD research only. The proposed periods for this interview are anytime between the.....

Thank you in anticipation for a favourable consideration and I look forward to hearing from you soonest.

Best Regards,

Oluseyi Felicia Olaitan
University of Huddersfield, UK
Oluseyi.olaitan@hud.ac.uk
+44 7424823879 / +23480889542

Appendix 4.3: Consent Form

Informed Consent Form
My name is Oluseyi Olaitan. I am a PhD student at the University of Huddersfield and I am conducting a qualitative research study on "The potential for the exportation of horticultural products (flowers, fruit and vegetables) export by air from Nigeria".

Thank you for agreeing to participate in this study which will take place on..... This form contains the purpose of this study, a description of the involvement required and your rights as a participant.

The purpose of this study is:
To identify the barriers hindering the exportation of horticultural products from Nigeria to the developed countries (especially, the UK) and also the opportunities available for exporting these products.

The benefits of the research will be:

- To contribute to development strategies.
- To encourage Nigeria to diversify into non-oil exports.
- To determine the improvement required for better performance and economic growth.
- To motivate the stakeholders in the supply chain of horticultural products' export to improve their processes and practices.
- To guide the decision makers to set future policy that will support more efficient supply chains and air transportation of perishable agricultural products export from Nigeria.

The methods that will be used for data collection to meet this purpose include:
- In-depth interview
- Direct observation
- Focus group interview

You are encouraged to ask questions or raise concerns at any time about the nature of the study or the methods used. Please be aware that our discussion will be audio taped to help me accurately capture your view about the subject under investigation. Any information provided by you will be treated as confidential and when written, will be completely anonymous.

You also have the right to withdraw from the study at any time.

By signing this consent form, I certify that I agree to the terms of this agreement.

Name	Signature	Date
_____	_____	_____

Appendix 4.4: Personal Data

PARTICIPANT'S PERSONAL DATA

1. Name: .....

2. Gender: (a) Male ( ) (b) Female( )

3. Age:

(a) Below 20 years ( ) (b) 20 – 29 years ( )

(c) 30 – 39 years ( ) (d) 40 – 49 years ( )

(e) 50 years and above

4. Job title .....

5. Educational Qualification:

(a) Primary Education ( ) (b) Post Primary Education ( )

(c) Post-Secondary Education ( ) (d) Master's Degree ( )

(e) Others, please specify.……

6. Level of Management:

(a) Top Management ( ) (b) Middle Management ( )

(c) Lower Management ( )

7. Years of work/ exporting experience:

(a) Below 5 years ( ) (b) 5 – 10 years ( )

(c) 11 – 15 years ( ) (d) 16 – 20 years ( )

(e) 21 and above ( )

Appendix 4.5: Interview Schedule

Date	Form of interview	Participant	Stakeholder group
17/04/2015	Focus group	FFC1-7	Freight forwarder
19/04/2015	Face-to-face	EC1	Exporter
20/04/2015	Face-to-face	AV1	Aviation operator
21/04/2015	Face-to-face	GOV1	Government institution
21/04/2015	Face-to-face	FM1	Farmer
21/04/2015	Face-to-face	GOV2	Government institution
21/04/2015	Face-to-face	FFC8	Freight forwarder
21/04/2015	Face-to-face	FM2	Farmer
22/04/2015	Telephone	EC2	Exporter
22/04/2015	Face-to-face	AV2	Aviation operator
22/04/2015	Face-to-face	AV3	Aviation operator
23/04/2015	Face-to-face	GOV3	Government institution
25/04/2015	Telephone	FM3	Farmer
27/04/2015	Face-to-face	AV4	Aviation operator
27/04/2015	Face-to-face	AV5	Aviation operator
27/04/2015	Face-to-face	EC3	Exporter
28/04/2015	Face-to-face	GOV4	Government institution
04/05/2015	Face-to-face	GOV5	Government institution
13/05/2015	Telephone	EC4	Exporter
21/11/2015	Telephone	GOV6	Government institution

Appendix 5.1: Some horticultural products currently exported

Common name	Water leaf
Vernacular name	Gbure
Scientific Name	Talinum Triangulare

Common name	fluted pumpkin leaf
Vernacular name	Ugu leaf
Scientific Name	Telfairia Occidentalis

Common name	African Jointfir
Vernacular name	Ukazi/Afang leaves
Scientific Name	Gnetum africanum

Common name	Bitter leaf
Vernacular name	Ewuro / Onugbu/ Shakwa shuwaka
Scientific Name	Vernonia amygdalina

Common name	Jute leaf
Vernacular name	Ewedu / Ayoyo
Scientific Name	Corchorus olitorius

Common name	False cubeb leaves
Vernacular name	Uziza
Scientific Name	Piper guineense

-

Common name	Lagos Spinach
Vernacular name	Soko
Scientific Name	Celosia Argentia

Common name	African spinach/Green
Vernacular name	Efo tete / Inine /
Scientific Name	Amaranthus Hybridus

Common name	Okra / lady's fingers
Vernacular name	Ila / Ofe Okwuru
Scientific Name	Abelmoschus esculentus

Common name	Scotch Bonnet pepper
Vernacular name	Ata rodo
Scientific Name	Capsicum chinense

Common name	Avocado pear
Vernacular name	piha pia
Scientific Name	Persea americana

Common name	African star apple
Vernacular name	Agbalumo / Udara
Scientific Name	Chrysophyllum africanum

Common name	Bush buck
Vernacular name	Utazi / Arokeke
Scientific Name	Gongronema latifolium

Common name	Roselle or Sorrel
Vernacular name	Yakwa leaves
Scientific Name	Hibiscus sabdariffa / Rumex acetosa

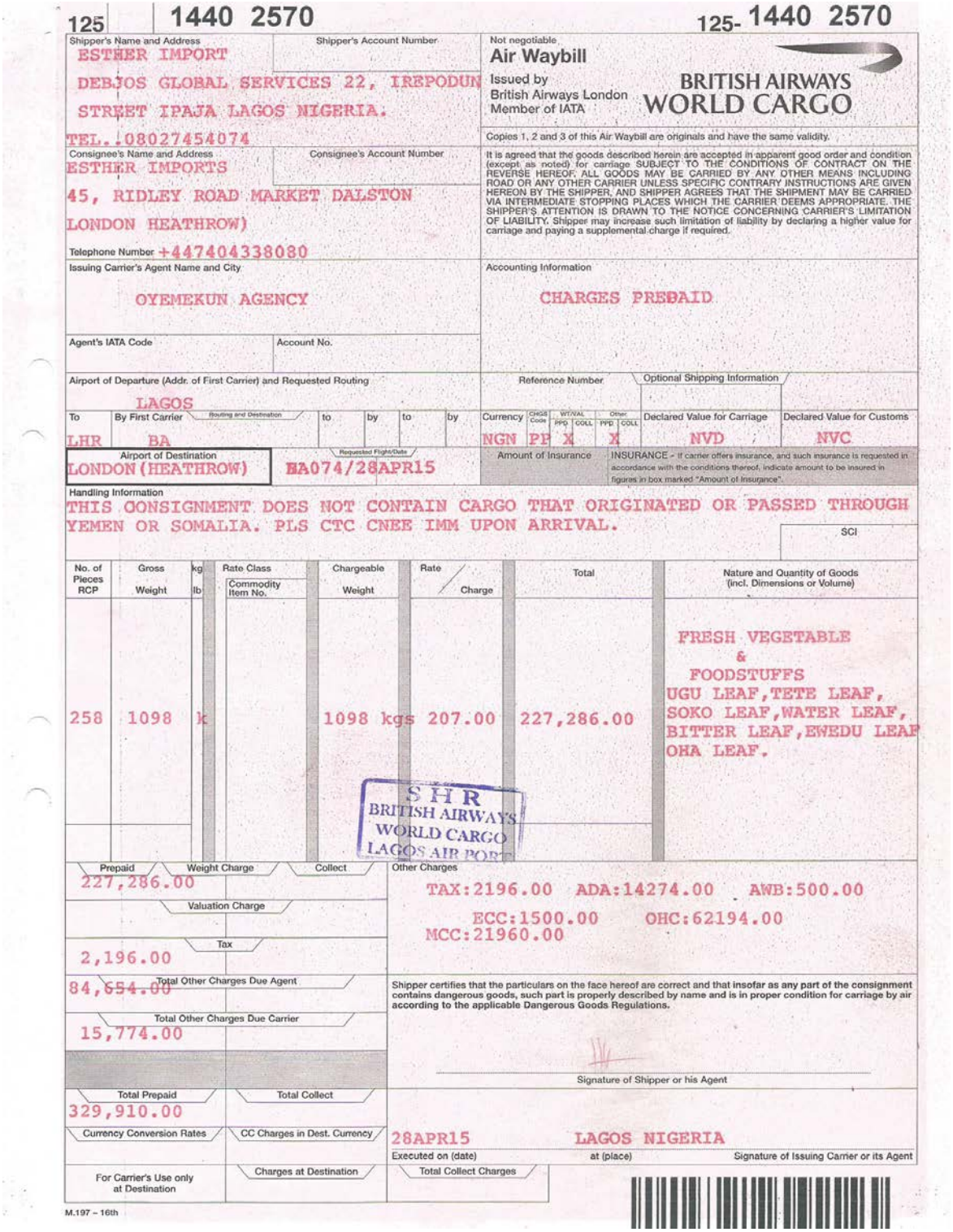
Common name	Garden egg
Vernacular name	Ìgbá / ubi egg
Scientific Name	Solanum melongena

Common name	Pawpaw
Vernacular name	Ibẹpẹ
Scientific Name	Carica papaya

Common name	Ginger
Vernacular name	Atale /
Scientific Name	Zingiber officinale

Common name	Onions
Vernacular name	Alubosa / Eyịm
Scientific Name	Allium cepa

Appendix 5.2: Sample of airway bill



125 1440 2570 125- 1440 2570

Shipper's Name and Address: ESTHER IMPORT
DEBJOS GLOBAL SERVICES 22, IREPODUN STREET IPAJA LAGOS NIGERIA.
TEL.:08027454074

Shipper's Account Number:

Not negotiable
Air Waybill
Issued by British Airways London Member of IATA

BRITISH AIRWAYS WORLD CARGO

Copies 1, 2 and 3 of this Air Waybill are originals and have the same validity.

Consignee's Name and Address: ESTHER IMPORTS
45, RIDLEY ROAD MARKET DALSTON
LONDON HEATHROW)

Consignee's Account Number:

Telephone Number +447404338080

It is agreed that the goods described herein are accepted in apparent good order and condition (except as noted) for carriage SUBJECT TO THE CONDITIONS OF CONTRACT ON THE REVERSE HEREOF. ALL GOODS MAY BE CARRIED BY ANY OTHER MEANS INCLUDING ROAD OR ANY OTHER CARRIER UNLESS SPECIFIC CONTRARY INSTRUCTIONS ARE GIVEN HEREON BY THE SHIPPER, AND SHIPPER AGREES THAT THE SHIPMENT MAY BE CARRIED VIA INTERMEDIATE STOPPING PLACES WHICH THE CARRIER DEEMS APPROPRIATE. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIER'S LIMITATION OF LIABILITY. Shipper may increase such limitation of liability by declaring a higher value for carriage and paying a supplemental charge if required.

Issuing Carrier's Agent Name and City: OYEMEKUN AGENCY

Accounting Information: CHARGES PREPAID

Agent's IATA Code:

Account No.:

Airport of Departure (Addr. of First Carrier) and Requested Routing: LAGOS

Reference Number:

Optional Shipping Information:

To	By First Carrier (Routing and Destination)	to	by	to	by	Currency	CHGS Code	WT/VAL PPD	WT/VAL COLL	Other PPD	Other COLL	Declared Value for Carriage	Declared Value for Customs
LHR	BA					NGN	PP	X		X		NVD	NVC

Airport of Destination: LONDON (HEATHROW)

Requested Flight/Date: BA074/28APR15

Amount of Insurance: INSURANCE – If carrier offers insurance, and such insurance is requested in accordance with the conditions thereof, indicate amount to be insured in figures in box marked "Amount of Insurance".

Handling Information
THIS CONSIGNMENT DOES NOT CONTAIN CARGO THAT ORIGINATED OR PASSED THROUGH YEMEN OR SOMALIA. PLS CTC CNEE IMM UPON ARRIVAL.

SCI

No. of Pieces RCP	Gross Weight	kg/lb	Rate Class / Commodity Item No.	Chargeable Weight	Rate / Charge	Total	Nature and Quantity of Goods (incl. Dimensions or Volume)
258	1098	k		1098 kgs	207.00	227,286.00	FRESH VEGETABLE & FOODSTUFFS UGU LEAF,TETE LEAF, SOKO LEAF,WATER LEAF, BITTER LEAF,EWEDU LEAF OHA LEAF.

SHR
BRITISH AIRWAYS
WORLD CARGO
LAGOS AIR PORT

Prepaid: 227,286.00
Weight Charge:
Collect:

Valuation Charge:

Tax: 2,196.00

Total Other Charges Due Agent: 84,654.00

Total Other Charges Due Carrier: 15,774.00

Other Charges: TAX:2196.00 ADA:14274.00 AWB:500.00 ECC:1500.00 OHC:62194.00 MCC:21960.00

Shipper certifies that the particulars on the face hereof are correct and that insofar as any part of the consignment contains dangerous goods, such part is properly described by name and is in proper condition for carriage by air according to the applicable Dangerous Goods Regulations.

Signature of Shipper or his Agent

Total Prepaid: 329,910.00

Total Collect:

Currency Conversion Rates:

CC Charges in Dest. Currency:

Executed on (date): 28APR15

at (place): LAGOS NIGERIA

Signature of Issuing Carrier or its Agent

For Carrier's Use only at Destination:

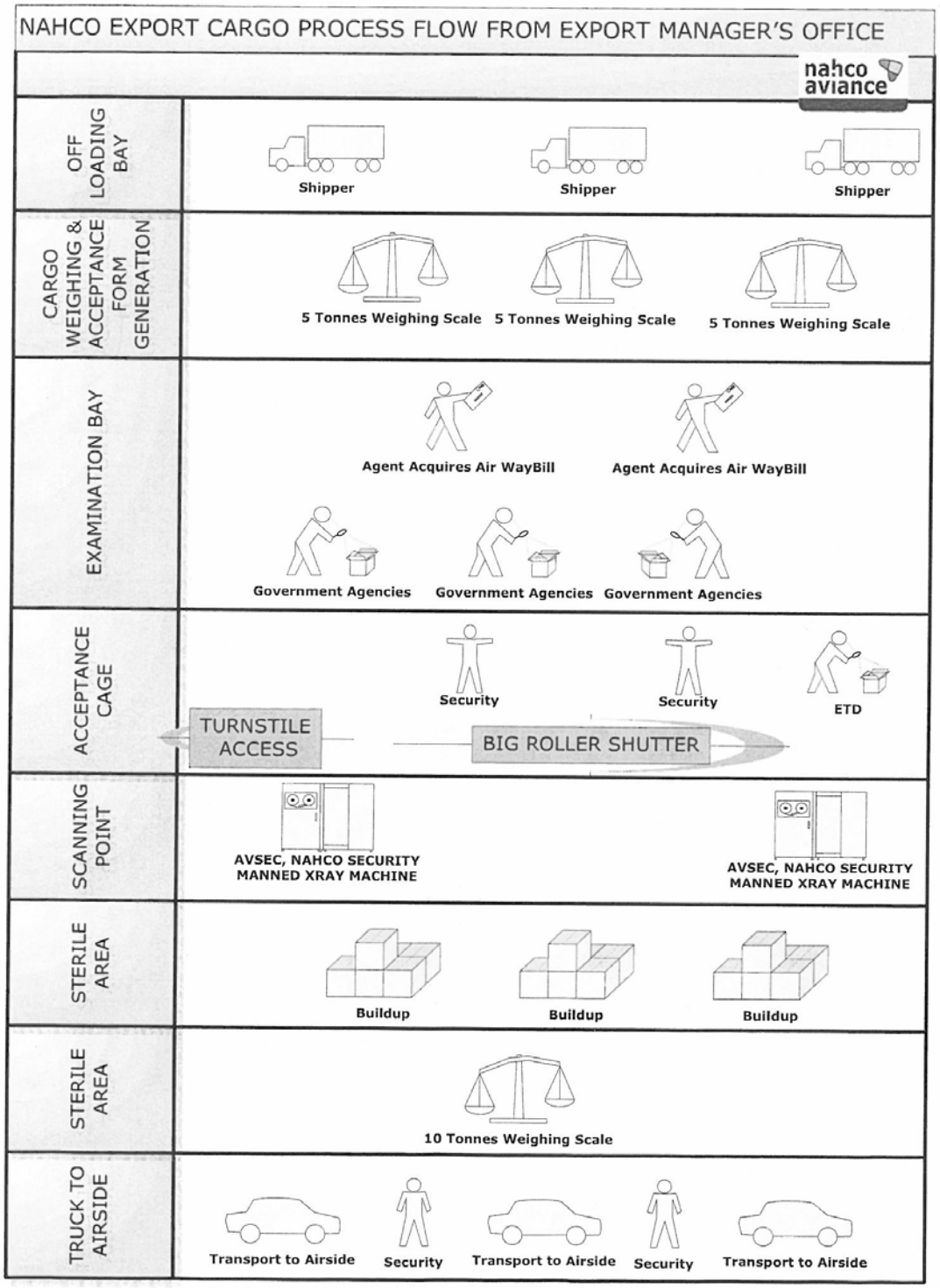
Charges at Destination:

Total Collect Charges:

M.197 – 16th

Source: British Airways World Cargo

Appendix 5.3: NACHO Export Operation



Source: Nigerian Aviation Handling Company (NACHO) Plc

Appendix 5.4: List of exportable horticultural products in Nigeria

Vegetables	Fruit	Cut Flowers
Baby Corn	Apricot	Roses
Asparagus	Avocados	
Carrots	Bananas	
Green beans	Grape fruit	
Mushrooms	Guava (white and pink)	
Beetroot	Lemons	
Cauliflowers	Mangoes	
Cucumber	Oranges	
Green peas	Passion fruits	
Leeks	Pawpaw	
Karela	Peaches	
Lettuce	Pineapples	
Lemon grass	Strawberries	
Garlic	Tomatoes	
Courgettes	Watermelon	
Okra		
Onions		
Potatoes		
Radish		
Red and white sorrel		
Spinach		
Sprouts		
Tinda		

Source: Nigerian Export Promotion Council

Appendix 5.5: Lending requirement

NEXIM

NIGERIAN EXPORT-IMPORT BANK

APPLICATION FOR DIRECT LENDING **Form No.** NEX/DL/01

PLEASE NOTE THAT ALL INFORMATION SHALL BE KEPT CONFIDENTIAL

This application form is to be completed in duplicate for export finance support through NEXIM Direct Lending Program. The application helps us to assess the eligibility of your project as such we rely on the information you provide.

Please provide the following documents with your application:

- Bank draft for N50,000.00 non-refundable application fee. Please be informed that NEXIM will not treat your application should you fail to pay this fee;
- Current three years tax clearance certificate;
- Certified true copy of Certificate of Incorporation;
- Audited Financial Statements for the last three years and the most recent management accounts;
- Certified Memorandum and Articles of Association;
- Project Feasibility Study/Business Plan;
- Projected cash flow, profit and loss and balance sheet;
- A Board resolution authorizing the company to borrow;
- A letter from the company authorizing NEXIM to obtain any information on it;
- Copy of registration with Nigerian Export Promotion Council (NEPC);
- Certified true copy of Forms CO2 and CO7;
- Certified true copy of pro-forma invoice(s);
- Licences/permits from relevant agencies where applicable;
- Evidence of previous export performance and current export commitment acceptable to NEXIM;
- Copy of Environmental Impact Assessment (EIA) Report;
- Any other document that may be required by NEXIM.

Please submit or mail the completed application to:

The Managing Director/Chief Executive
Nigerian Export-Import Bank
Plot 795, 8th Street, off Independence Avenue,
Central Business District, P. M. B 276, Garki, Abuja

If you have any questions regarding your application please contact us between the hours of 8.30 am to 4.30 pm Monday to Friday on 09 234 6141-7, 234 6157 or 234 6160. Alternatively email us at **neximabj@neximbank.com.ng**

If the space provided for a question is not enough please complete your answer on a separate piece of paper and attach it to this form.

Please note that it is an offence to deliberately falsify information, or to give any property or benefit of any kind to a NEXIM officer in order to influence that officer.

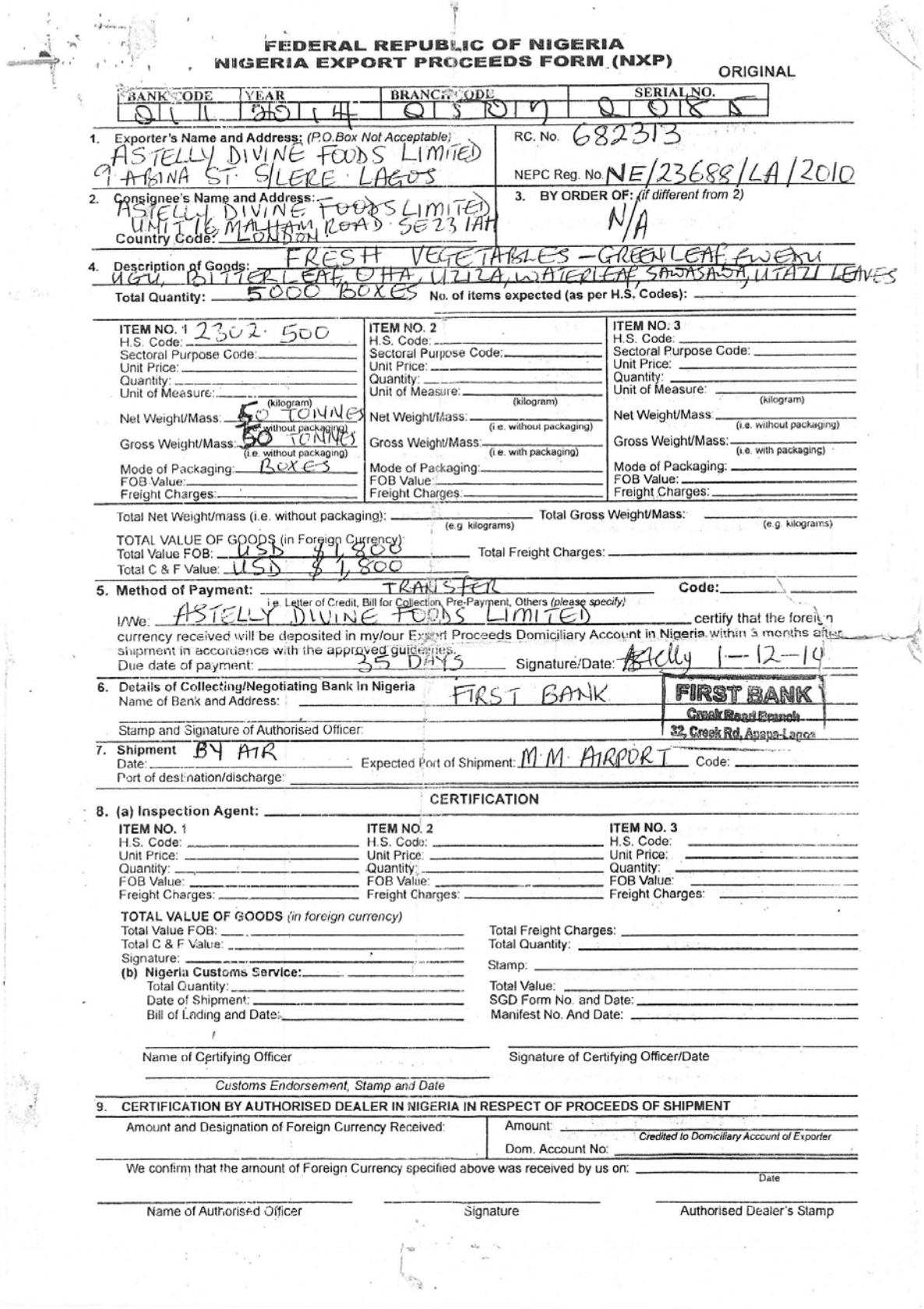
1

Source: Nigeria Export-Import Bank

Appendix 5.6: Products for ShopRite, Lagos produced by Tenti Green Farms, Jos.

Source: Nigerian Export Promotion Council

Appendix 5.7: Nigeria Proceeds Form (NXP)



FEDERAL REPUBLIC OF NIGERIA
NIGERIA EXPORT PROCEEDS FORM (NXP)

ORIGINAL

BANK CODE	YEAR	BRANCH CODE	SERIAL NO.
011	2014	015 017	010185

1. Exporter's Name and Address: (P.O.Box Not Acceptable)
ASTELLY DIVINE FOODS LIMITED
9 ABINA ST. S/LERE LAGOS

RC. No. 682313

NEPC Reg. No. NE/23688/LA/2010

2. Consignee's Name and Address:
ASTELLY DIVINE FOODS LIMITED
UNIT 16 MALHAM ROAD SE23 1AH
Country Code: LONDON

3. BY ORDER OF: (if different from 2)
N/A

4. Description of Goods: FRESH VEGETABLES – GREEN LEAF, EWEDU UGU, BITTER LEAF, OHA, UZIZA, WATERLEAF, SAWASAWA, UTAZI LEAVES
Total Quantity: 5000 BOXES No. of items expected (as per H.S. Codes):

ITEM NO. 1	ITEM NO. 2	ITEM NO. 3
H.S. Code: 2302.500	H.S. Code:	H.S. Code:
Sectoral Purpose Code:	Sectoral Purpose Code:	Sectoral Purpose Code:
Unit Price:	Unit Price:	Unit Price:
Quantity:	Quantity:	Quantity:
Unit of Measure: (kilogram)	Unit of Measure: (kilogram)	Unit of Measure: (kilogram)
Net Weight/Mass: 50 TONNES (i.e. without packaging)	Net Weight/Mass: (i.e. without packaging)	Net Weight/Mass: (i.e. without packaging)
Gross Weight/Mass: 50 TONNES (i.e. without packaging)	Gross Weight/Mass: (i.e. with packaging)	Gross Weight/Mass: (i.e. with packaging)
Mode of Packaging: BOXES	Mode of Packaging:	Mode of Packaging:
FOB Value:	FOB Value	FOB Value:
Freight Charges:	Freight Charges:	Freight Charges:

Total Net Weight/mass (i.e. without packaging): (e.g. kilograms) Total Gross Weight/Mass: (e.g. kilograms)

TOTAL VALUE OF GOODS (in Foreign Currency)
Total Value FOB: USD $1,800 Total Freight Charges:
Total C & F Value: USD $1,800

5. Method of Payment: TRANSFER Code:
(i.e. Letter of Credit, Bill for Collection, Pre-Payment, Others (please specify))
I/We: ASTELLY DIVINE FOODS LIMITED certify that the foreign currency received will be deposited in my/our Export Proceeds Domiciliary Account in Nigeria within 3 months after shipment in accordance with the approved guidelines.
Due date of payment: 35 DAYS Signature/Date: Astelly 1-12-14

6. Details of Collecting/Negotiating Bank in Nigeria
Name of Bank and Address: FIRST BANK
Stamp and Signature of Authorised Officer:
FIRST BANK
Creek Road Branch
32, Creek Rd, Apapa-Lagos

7. Shipment BY AIR
Date: Expected Port of Shipment: M.M. AIRPORT I Code:
Port of destination/discharge:

CERTIFICATION

8. (a) Inspection Agent:

ITEM NO. 1	ITEM NO. 2	ITEM NO. 3
H.S. Code:	H.S. Code:	H.S. Code:
Unit Price:	Unit Price:	Unit Price:
Quantity:	Quantity:	Quantity:
FOB Value:	FOB Value:	FOB Value:
Freight Charges:	Freight Charges:	Freight Charges:

TOTAL VALUE OF GOODS (in foreign currency)
Total Value FOB:
Total C & F Value:
Signature:
Total Freight Charges:
Total Quantity:
Stamp:
(b) Nigeria Customs Service:
Total Quantity:
Date of Shipment:
Bill of Lading and Date:
Total Value:
SGD Form No. and Date:
Manifest No. And Date:

Name of Certifying Officer
Signature of Certifying Officer/Date
Customs Endorsement, Stamp and Date

9. CERTIFICATION BY AUTHORISED DEALER IN NIGERIA IN RESPECT OF PROCEEDS OF SHIPMENT
Amount and Designation of Foreign Currency Received:
Amount:
Credited to Domiciliary Account of Exporter
Dom. Account No:
We confirm that the amount of Foreign Currency specified above was received by us on:
Date

Name of Authorised Officer Signature Authorised Dealer's Stamp

Source: Cobalt

Appendix 6.1: Findings from analysis of direct observations

Findings from direct observations

Introduction

The direct observation took place in Lagos between April 2015 and May 2015. Although this period was usually the start of a wet season, the temperature was still high with minimal rainfall. As a result, the export terminal environment was very warm. Some of the observed activities include screening, packaging, weighing, documentation check, and scanning for export. Based on the direct observations for a minimum of four hours for five days, the barriers inhibiting HPE are highlighted and discussed under thematic headings below:

Existing institutional framework

NEPC and NPQS are the two prominent government agencies involved in promoting HPE whereas other relevant agencies are not known to the exporters. There has been a lack of collaboration among government agencies; each of them works independently in the domestic market. Horticultural sub-sector is not well developed and lacks adequate institutional support therefore HPE is adversely affected.

Infrastructure and Logistics issues

Lack of infrastructure

There were no enabling infrastructure and facilities to enhance HPE. Currently, horticultural products are mainly transported for export from Murtala Mohammed International Cargo Airport, Lagos. Due to poor road infrastructure, lack of cooling vehicles, poor transport system and other vital amenities required for smooth logistics of time-sensitive products, production for export is not carried out in the rural areas. Meanwhile, transporting the perishables to the cargo airport is another challenge because of inland transit delay.

Bad roads

Poor road infrastructure affects smooth logistics of exported products. Nigerian roads are characterised by pot holes causing traffic jam and inland transit delay.

Transport issues

The vehicles used are not the appropriate type for conveying perishable products. At the time of arrival at the airport, most of the farmers complained about the inland transit delay which occurred as a result of bad roads and also the delay caused by the road traffic officials because of the use of unsuitable transport.

Poor power supply

The lack of constant electricity supply was observed and this is not encouraging for the export process of horticultural products because of their perishable nature.

Lack of cold chain system

There were no temperature controlled facilities such as the cold chain system to maintain the freshness and quality of horticultural products for export. The export warehouse, the packing site at NPQS and the vehicles used to deliver the products lacked temperature-controlled facilities.

The export warehouse has a non-functioning cold room and was not well ventilated. Though the products appeared fresh at the time of delivery to the terminal, the temperature within the confined area subsequently affected their quality. The export terminal environment was very warm and was therefore not conducive for the shippers, freight forwarders and the staff of other organisations working at the premise.

Non-refrigerated vehicles were used to transport the products by the farmers to the packing site. The products were unloaded and delivered to the designated areas for subsequent screening by the NPQS before export. However, protective items such as gloves and aprons were not used during the unloading and handling process. The purpose of the screening was to reject and prevent pests infected products from being exported after which photosanitary certificates were issued to accompany certified consignments.

Moreover, the doors and windows were left open as an alternative to allow for cross ventilation. Although hand gloves were provided to be used by the farmers and exporters while handling the products, these were not used because the environment was not conducive.

Packaging

Vented packaging were used but they were stored within the confined NACHO export warehouse without cold facilities to preserve their quality and later trucked in non-refrigerated dollies to the airport ramp.

Food safety and quality concerns

Preservation enhances the quality of horticultural products however these products are not well preserved making it of less quality to international market standard. The products were not preserved after harvest and they faced long waiting time of about four hours before the time of flight departure. This long lead time adversely affects the quality of the products. Essential facilities and items required (such as apron, gloves, wash hand basin) during the post-harvest handling, processing, storage and distribution were absent.

Export operational challenges

The export warehouse was unorganised and filled with many agencies, shippers, air freight forwarders, customs, NACHO and airlines representatives.

Documentation issue

The documentation is carried out manually leading to rigorous and longer process. This manual process also provide platform for bribery and corruption.

Too many agencies

Multiple agencies were present at the export terminal and the shippers and their freight forwarders have to move from one desk to another to have their shipment and necessary documents checked and stamped before the approval for export. The existence of these agencies caused the export process to be longer thus discouraging the exporters.

Limited working hours

Operations at the cargo terminal start at 8am and end at 5pm Monday to Friday after which the products cannot be shipped again on a weekday. The operational hours on Saturday is between 10am and 1pm.

Airline market structure

Majority of the exporters transported their shipments through British Airways (BA) because it operates a direct flight from Lagos to London Heathrow. Moreover, the time of operations at the terminal only favours BA whose flight departure time meet exporters delivery preference compared to other airlines.

Market penetration issue

Niche market

Indigenous products are majorly exported to satisfy demand from a niche market. These products are targeted towards Africans, especially Nigerians, hence they are supplied to specialist shops such as the African / Caribbean shops but not the supermarkets. HPE has not yet been developed to meet international market standards hence market access might be difficult.

Lack of value addition

Exported products were mainly handpicked and packaged at the packing site but did not undergo proper value addition processes.

Stakeholders' inadequacy

Many of the stakeholders in the supply chain of HPE are not adequately trained. Farmers are illiterates and their knowledge is based on parental farm training, therefore they are unaware of new innovations and good agricultural practices. Exporters lack product and export knowledge. They also do not comply with procedures since the export system is not standardised. Air freight forwarders are not professionals and the government agencies work independently and they are not equipped with appropriate trainings and resources to efficiently carry out their obligations.

Summary

The findings from the observational facts have been analysed and discussed. Existing institutional framework, infrastructure and logistics issues, food safety and quality concerns, export operational challenges, airline market structure, market penetration issue, stakeholders' inadequacy are the themes that emerged from the direct observation source of evidence. This will be used to support the findings from the multiple perspectives of the interviewees.

Appendix 6.2: Findings from analysis of Archival records

Themes	Evidences	Source
Existing institutional framework	• Lack of adequate support for various institutions which are providing support services, training and development services oriented to entrepreneurship and export • Insufficient availability of, and accessibility to, business/export start-up support and facilitating services • Insufficient availability of, and access to, information on issues to be addressed in setting up and operating an export business • Lack of coordination among government agencies regulating foreign trade resulting in certain agencies working against the others	Nigerian Export Promotion Council: **Document title:** A framework of export strategy For The Federal Republic Of Nigeria 2005 - 2010
Infrastructure and Logistics issues	• Poor roads • Lack of cold chain transport and storage facilities at airports	Nigerian Export Promotion Council: **Document title:** Product profile on cut flowers **Document title:** Business Sector Round Table, Product Profile: Cut flowers & Foliage (Discussion Document) Brussels, 16 May 2001
	• poor infrastructure, energy • Infrastructural deficiency • Weak logistics to chain supply	Nigerian Export Promotion Council: **Document title:** Breakfast Meeting at Nigerian-British Chamber of Commerce Date: 14th August, 2014
	• Improper packaging • High transit temperature	Nigerian Export Promotion Council: **Document type - Seminar paper:** Facilitating and Optimizing Export of Nigerian Horticulture Products through Conformity to Global Best Practices in Cargo Handling, Processing, Packaging Shipments & Documentation

Market penetration issue	• Inadequate product supply base in terms of quantity and range	Nigerian Export Promotion Council: **Document title:** A framework of export strategy For The Federal Republic Of Nigeria 2005 - 2010
	• Limited value addition • Exports dominated by primary products	Nigerian Export Promotion Council: **Document title:** Breakfast Meeting at Nigerian-British Chamber of Commerce Date: 14th August, 2014
	• Export of indigenous products	British Airways **Document type:** Samples of airway bills Cobalt **Document type:** Nigeria Export Proceeds form (NXP)
	• Low supply	DHL Aviation **Document type:** Export volume
Stakeholders' inadequacy	• The vast majority of the operators are not literate.	Nigerian Export Promotion Council: **Document title:** A framework of export strategy For The Federal Republic Of Nigeria 2005 - 2010
	• Lack of skills and capacity	Nigerian Export Promotion Council: **Document title:** Breakfast Meeting at Nigerian-British Chamber of Commerce Date: 14th August, 2014
Food safety and quality concerns	• Production and export of sub-standard goods	Nigerian Export Promotion Council: **Document title:** A framework of export strategy For The Federal Republic Of Nigeria 2005 - 2010

	• Poor standardisation of products	Nigerian Export Promotion Council: **Document title:** Breakfast Meeting at Nigerian-British Chamber of Commerce Date: 14th August, 2014
	• Rough handling • High transit temperature • Improper method of harvesting	Nigerian Export Promotion Council: **Document type - Seminar paper:** Facilitating and Optimizing Export of Nigerian Horticulture Products through Conformity to Global Best Practices in Cargo Handling, Processing, Packaging Shipments & Documentation
High cost of finance	• The high cost of doing business • Institutional finance is too restrictive and not sufficiently adapted to production capacity development needs of the country	Nigerian Export Promotion Council: **Document title:** A framework of export strategy For The Federal Republic Of Nigeria 2005 - 2010
	• High cost of transport	Nigerian Export Promotion Council: **Document title:** Product profile on cut flowers
	• Costly requirements	Nigerian Export-Import Bank: **Document Type:** Application for direct lending
	• Processing costs on the target value chains remains on the high side. • The costs of the technologies are high	**Document title:** 2010 NBS/CADP Baseline Survey Report National Bureau of Statistics (NBS) -Commercial Agriculture Development Project (CADP) - a World Bank investment programme in Nigeria.
	• Finance • High cost of production • Restricted access to credit	Nigerian Export Promotion Council: **Document title:** Breakfast Meeting at Nigerian-British Chamber of Commerce Date: 14th August, 2014

Export operational challenges	• Complicated export documentation and procedures	Nigerian Export Promotion Council: **Document title:** A framework of export strategy For The Federal Republic Of Nigeria 2005 - 2010
	• Falsification of documents • Inability to meet export orders • Unwholesome trade practices	Nigerian Export Promotion Council: **Document title:** Breakfast Meeting at Nigerian-British Chamber of Commerce Date: 14th August, 2014
Neglect of agriculture	• Traditional agriculture remains dominated by small-holder farmers still using conservative traditional methods of production, dependent on nature, hardly exposed to modern technology, lacking storage and preservation facilities, etc. • The traditional sector is difficult to deal with because of its extensive geographical and spatial dispersal and the fact that the vast majority of the operators are not literate. However, any quantum of success achieved in the sector produces substantial spill over effects. This makes it important to pay attention to it as part of the export strategy.	Nigerian Export Promotion Council: **Document title:** A framework of export strategy For The Federal Republic Of Nigeria 2005 - 2010
	• The difficulties in the agricultural sector have been attributed to official policy inconsistencies following the 70's oil boom, natural disasters like droughts as well as general policy ineffectiveness.	**Document title:** 2010 NBS/CADP Baseline Survey Report National Bureau of Statistics (NBS) -Commercial Agriculture Development Project (CADP) - a World Bank investment programme in Nigeria.
	• Nigeria remains an import-dependent country whereby our Economy and foreign exchange is under the great influence of these external countries.	Nigerian Export Promotion Council: **Seminar paper:** Facilitating and Optimizing Export of Nigerian Horticulture Products through Conformity to Global Best Practices in Cargo Handling, Processing, Packaging Shipments & Documentation

Airline Market Structure	• Limited air routes • Limited air freight capacity	Nigerian Export Promotion Council: Product profile on cut flowers
Domestic market	• A buoyant domestic market	Nigerian Export Promotion Council: **Document title:** A framework of export strategy For The Federal Republic Of Nigeria 2005 - 2010
Summary: The findings from archival records have been analysed and will be used to support the findings from the multiple perspectives of the interviewees and direct observations. Existing institutional framework, infrastructure and logistics issues, market penetration issue, stakeholders' inadequacy, food safety and quality concerns, high cost of finance, export operational challenges, neglect of agriculture, the airline market structure and domestic market are the themes that emerged.		

Appendix 6.3: The non-EU trade Alert List (1 December 2014 to 31 January 2014)

No	Country of export	Interceptions with HO	Commodities, intercepted most with HO	HO interceptions	Main HOs intercepted	Number of interceptions
11	COTE D'IVOIRE	64	*Mangifera spp.*	*62*	Fruit flies	62
12	THAILAND	60	*Mangifera spp.*	*9*	Fruit flies	8
			Annona spp.	*8*	Fruit flies	8
			Planting material	*7*		
			Dendrobium spp.	*7*	Thrips	7
			Capsicum spp.	*7*	Fruit flies	7
13	VIETNAM	52	*Wood Packaging Material*	*20*	Wood and bark insects other than longhorn beetles	19
			Ocimum spp.	*6*		
			Annona spp.	*5*	Fruit flies	5
			Syzygium spp.	*5*	Fruit flies	5
14	PAKISTAN	48	*Citrus spp.*	*16*	*Xonthrmrnos axonopodis* pv. *citri*	16
			Momordica spp.	*10*	Thrips	10
			Psidium spp.	9	Fruit flies	8
			Solanum spp. other than S. tuberosumand S. lycopersicum	8	Thrips	7
15	ISRAEL	45	*Ocimum spp.*	14	White flies	9
			Planting material	7		7
			Gypsophila spp.	6	Leaf miners	6
			Solidago spp.	5		
16	JAMAICA	37	*Mangifera spp.*	33	Fruit flies	33
17	MALAYSIA	37	*Ocimum spp.*	9	White flies	9
18	ECUADOR	35	*Gypsophila spp.*	20	Leaf miners	20
			Trachelium spp.	5	Leaf miners	5
19	CAMEROON	29	*Wood and bark*	10	Wood and bark insects other than longhorn beetles	11
20	**NIGERIA**	**29**	***Corchorus spp.***	**17**	**White flies**	**17**
21	MALI	25	*Mangifera spp.*	23	Fruit flies	23
22	JORDAN	23	*Corchorus spp.*	17	White flies	17
23	SERBIA	20	*Planting material*	20	*Plum pox potyvirus*	19

Source: EUROPHYT (2014)

Appendix 6.4: Excerpts from NVivo 10 Analysis Report

12/12/2016 13:12

Coding Summary By Source
Research Data Analysis
12/12/2016 13:12

Classification	Aggregate	Coverage	Number Of Coding References	Reference Number	Coded By Initials	Modified On

Document

12/12/2016 13:12

Internals\\Aviation Operators\\Cargo Manager @ AV1

Node

Nodes\\Barriers\Airline market structure\Indirect flight-hub and spoke

No	0.0085	3	

1	O.F	09/05/2016 10:25

but our own flight move from Lagos to Belgium. We have to truck it from Belgium to London. We can't compare what we are going to go through with BA so that's the reason why most of them use direct flight. For us, what we do is twice in a week.

3	O.F	02/05/2016 18:22

Yes indirect flight hinders exporters from transporting through AV1

Nodes\\Barriers\Existing Institutional framework\Little or Lack of awareness

No	0.0055	1	

1	O.F	06/05/2016 23:30

Sometimes, there are a lot of things that the government is doing that actually cut off people. It's something that is beneficial, they may just go somewhere; signed the agreement that people are not aware of it, and they don't even know the benefit.

Nodes\\Barriers\Export operational challenges\Documentation issue

2	O.F	06/05/2016 23:28

The documentation aspect, it has been an issue.

Nodes\\Barriers\Export operational challenges\Limited working hours

2	O.F	22/03/2016 12:52

Secondly, their custom; even if you get there on Sunday, they are open but here customs don't work on Saturdays, they don't work on Sundays. That give you the impression of a country that is not ready for export. Other parties like I said they close by 5 o'clock.

Nodes\\Barriers\Market penetration issue\Inadequate supply and demand

Yes	0.0123	2	

1	O.F	06/05/2016 20:30

But what we are getting from Nigeria now is still so small up to this particular moment.

Classification	Aggregate	Coverage	Number Of Coding References	Reference Number	Coded By Initials	Modified On

Internals\\Exporting Companies\\Marketing Director at EC4 Node

Nodes\\Barriers\Airline market structure\Monopoly

Yes 0.0108 2

1 O.F 09/05/2016 12:06

the vegetables that come by air, the major carrier is BA (British Airways) and their charges are also high because they don't have competition so they just do it anyhow. You know and nobody is also saying anything.

Nodes\\Barriers\Existing Institutional framework\Lack of intervention in export market

2 O.F 30/04/2016 21:05

But for Nigeria, nobody is talking nobody is saying anything. So you find out that the level of the MRL allowed can be permissible coming from our country you know. But because nobody is talking and all that. When it comes, they tell us it is high we are going

Nodes\\Barriers\Export operational challenges\Illegal act

Yes 0.0038 1

1 O.F 09/05/2016 12:10

a custom officer will still expect you to give him so so so amount per kilo (Kg) which is exploitation.

Nodes\\Barriers\Food safety and quality concerns\Pest control issue

No 0.0666 6

1 O.F 17/03/2016 20:51

Incidentally after all the effort and all that. Sometimes when it get here, they still tell you oh! they saw white fly. And we are like you know we've done all that we know can be done. So why is there still white fly? So that's the question we've not been able to explain.

3 O.F 17/03/2016 21:44

Because we found out that some farmers, they don't even know the measurement of the chemical. If they go to their farms and see many insects, they will say they want to make the chemical to be strong so they can kill it

Nodes\\Barriers\High cost of finance\High transaction costs

Yes 0.0049 2

1 O.F 09/05/2016 12:05

too much charges from customs, from this from that, it ought not to be so. There's high exploitation,

2 O.F 09/05/2016 12:08

Nodes\\Barriers\Infrastructure and Logistics issues\Lack of cold chain system

2 O.F 09/05/2016 12:08

There is no cooling thing in NACHO or quarantine place. The place is hot.

Nodes\\Barriers\Market penetration issue\Niche market

Yes 0.0038 1

1 O.F 06/05/2016 21:50

Actually ours is still on the local level which actually you will not really call export if you ask me.

Nodes\\Barriers\Neglect of agriculture\Lack investment in farming

No 0.0024 1

1 O.F 30/04/2016 21:47

It's just that Nigerian government you know overlook agriculture.

Classification	Aggregate	Coverage	Number Of Coding References	Reference Number	Coded By Initials	Modified On

Internals\\Farmers\\FM3

Node

Nodes\\Barriers

Nodes\\Barriers\Existing Institutional framework\Lack of incentives and support services

				3	O.F	09/05/2016 12:35

What happens is: sometimes they call us and we will express our mind as you are doing now. We will tell them all our problems and afterwards, we'll not see them. They will not do anything and we just keep silent. They do that every time and we'll not hear from them again.

Nodes\\Barriers\High cost of finance\High transaction costs

				2	O.F	09/05/2016 12:38

We need fertilizer. We are spending a lot of money in that area.

Nodes\\Barriers\Infrastructure and Logistics issues\Inland transit delay

	No	0.0267	2			
				1	O.F	15/03/2016 20:16

Whenever we are coming to that place – airport, VIO or road safety disturb us on the way. Sometimes, we don't meet up and sometimes we get there late.

Nodes\\Barriers\Land tenancy issue\Illegally rented land

	No	0.0077	1			
				1	O.F	15/03/2016 20:08

I need large land because we are renting the land. We need our own land where we can farm

Nodes\\Barriers\Market penetration issue\No collective action

	Yes	0.0187	2			
				1	O.F	06/05/2016 22:04

I don't know them because some supply on Tuesdays and others Wednesdays. Once I go there on Mondays, I will not go on Tuesdays and Wednesdays. I don't actually know those people. Everyone is just doing his/her own.

Classification	Aggregate	Coverage	Number Of Coding References	Reference Number	Coded By Initials	Modified On

Internals\\Freight Forwarding Companies\\Managing Director @ FFC8

Node

Nodes\\Barriers\Airline market structure\Indirect flight-hub and spoke

	No	0.0203	1			
				1	O.F	21/03/2016 11:39

Other European airlines like KLM, DHL, Turkish, and Lufthansa are connecting flights. They get to their hub before connecting to the UK and because these products are perishable items, it is not advisable to use them. Only British Airways schedule flight move in the evening and get to Heathrow in the morning. They operate direct flight.

Nodes\\Barriers\Airline market structure\Monopoly

				2	O.F	09/05/2016 12:55

You don’t have any option than to use BA so that your goods can arrive on time. But they lack facilities too. British Airways have poor handling system and it also affect the goods.

Nodes\\Barriers\Export operational challenges\Illegal act

	Yes	0.0108	1			
				1	O.F	09/05/2016 12:57

Whatever goods you want to send, you have to bribe through to get your cargo moving. So many agencies are involved.

Nodes\\Barriers\Food safety and quality concerns\Pest control issue

	No	0.0266	2			
				1	O.F	06/05/2016 22:22

Another challenge with farmers is that sometimes they may not have enough quantity so they collect from unregistered farms and mix untreated products together with treated.

Nodes\\Barriers\Infrastructure and Logistics issues\Poor packaging

	Yes	0.0371	1			
				1	O.F	28/04/2016 21:22

Products should be packaged separately. For example, they mix up the products concealing other products like bitter roots (an herbal liquid that contains alcohol). Every product require separate documents but they sometimes want to package them together not considering the fact that some products like liquid may require separate type of package or storage in the aircraft. This leads to rejection.

Nodes\\Barriers\Market penetration issue\Inadequate supply and demand

	Yes	0.0076	1			
				1	O.F	06/05/2016 22:21

Another challenge with farmers is that sometimes they may not have enough quantity

Nodes\\Barriers\Stakeholder's Inadequacy\Lack of knowledge

	No	0.1073	5			
				3	O.F	24/05/2016 13:01

Exporters face challenges. Majority of them lack exporting experience but they believe they know. Products should be packaged separately. For example, they mix up the products concealing other products like bitter roots (an herbal liquid that contains alcohol). Every product require separate documents but they sometimes want to package them together not considering the fact that some products like liquid may require separate type of package or storage in the aircraft. This leads to rejection.

Nodes\\Barriers\Stakeholder's Inadequacy\Lack of product knowledge

				2	O.F	24/05/2016 12:54

Exporters must be well trained. They lack knowledge of perishable export. Majority of them don’t know the value of the vegetable. They just go into the business because others are doing it.

Classification	Aggregate	Coverage	Number Of Coding References	Reference Number	Coded By Initials	Modified On

Internals\\Government Institutions\\Zonal controller @ GOV1

Node

Nodes\\Barriers\Existing Institutional framework\Little or Lack of awareness

	No	0.0044	1			

I believe the awareness on the potentials and other pros at the international community is not yet known.

Nodes\\Barriers\Existing Institutional framework\Research negligence

				3	O.F	09/05/2016 14:19

All our research agencies have collapsed, all the Agricultural development Programs (ADP) introduced by vast leaders under World Bank. Since World Bank stops, government cannot continue.

Nodes\\Barriers\Export operational challenges

	Yes	0.0208	2			
				1	O.F	30/04/2016 20:40

It's only few that are into that business. So it's just based on understanding that they are trying to meet up these requirements in international community. It's because we as a regulatory body, we try to implement the procedure so that we would not be in lacking state otherwise majority don't not see what we are doing as necessary.

				2	O.F	09/05/2016 14:18

Government is making attempt but it's to no avail because it has not materialized to what we expect as a country.

Nodes\\Barriers\Food safety and quality concerns\Lack of GlobalGAP certificate

	Yes	0.0383	4			
				1	O.F	28/03/2016 13:42

The GlobalGAP, that is good agricultural practice, we don't have it as far as Nigeria is concerned due to the fact that we have not attained the level we are supposed to attain.

Nodes\\Barriers\High cost of finance\High transaction costs

	Yes	0.0147	1			
				1	O.F	30/04/2016 20:53

And up to three times, they gave them that site, large farm for the rose but I learnt they lost the market due to China competition. They flood the market with their product and it's a lot cheaper for people to buy China's own at the expense of what people in Nigeria can sell. So we lost that market opportunity and the farm has to close down.

Nodes\\Barriers\Infrastructure and Logistics issues\Lack of cold chain system

	Yes	0.0010	1			
				1	O.F	28/03/2016 13:03

no refrigerated facility

Nodes\\Barriers\Market penetration issue\Niche market

				2	O.F	06/05/2016 22:45

they just believe what is coming to UK and other European countries are being consumed by the Africans. And who are the African? Specially Nigerians.

Nodes\\Barriers\Neglect of agriculture\Import-oriented economy

	No	0.0067	1			
				1	O.F	28/03/2016 12:09

because we are import-driven. Here people believe that where you can quickly make money is through oil, import of toothpick, fake materials and what have you. You know in Nigeria agriculture is not taken as a serious business.

Nodes\\Barriers\Stakeholder's Inadequacy\Lack of knowledge

	No	0.0094	1			
				1	O.F	24/05/2016 13:00

The facility so far, even the capacity with what we are doing is based on our little exposure may be we have opportunity to travel to some other countries to see what they are doing that we come back to say let's do this.

References

Adu, G. (2013). Determinants of economic growth in Ghana: Parametric and nonparametric investigations. *Journal of Developing Areas, 47*(2), 277-301. doi:10.1353/jda.2013.0027

Afari-Owusu, E. (2014). *Participation in global horticulture value chains: implications for poverty alleviation in the Sub-Saharan Africa (SSA) region* (Doctoral thesis, University of Manchester).Retrieved from EThOS. (EThOS ID uk.bl.ethos. 603142).

Aghion, P., & Howitt, P. (1994). Growth and unemployment. *Review of Economic Studies*, 61(3), 477-494.

Aghion, P., Bacchetta, P., Rancière, R., & Rogoff, K. (2009). Exchange rate volatility and productivity growth: The role of financial development. *Journal of Monetary Economics, 56*(4), 494-513. doi:10.1016/j.jmoneco.2009.03.015

Agriculture and Food Authority, AFA. (2015). *About Horticultural Crops Directorate.* Retrieved from http://agricultureauthority.go.ke/?portfolio=horticulture

Agrosynergie, G. (2008). Evaluation of the system of entry prices and export refunds in the fruit and vegetables sector. *European Commission, Agricultural and Rural Development Evaluation*. Retrieved from http://ec.europa.eu/agriculture/evaluation/market-and-income-reports/2008/fruitveg/part2_fulltext.pdf

Ahumada, O., & Villalobos, J. R. (2009). Application of planning models in the agri-food supply chain: A review. *European Journal of Operational Research, 196*(1), 1-20. doi:10.1016/j.ejor.2008.02.014

Aitken, B. J., & Harrison, A. E. (1999). Do domestic firms benefit from direct foreign investment? Evidence from Venezuela. *American Economic Review, 89*(3), 605-618. doi:10.1257/aer.89.3.605

Akpan, S. (2010). Encouraging youth's involvement in agricultural production and processing. *International Food Policy Research Institute, Policy Note,* (29).

Aliyu, S. U. R. (2009). Impact of Oil Price Shock and Exchange Rate Volatility on Economic Growth in Nigeria: An Empirical Investigation. *Research Journal of Internatıonal Studıes*, 11, 4-15. Retrieved from http://mpra.ub.uni-muenchen.de/16319/

Amorim, P., Günther, H. O., & Almada-Lobo, B. (2012). Multi-objective integrated production and distribution planning of perishable products. *International Journal of Production Economics, 138*(1), 89-101. doi:10.1016/j.ijpe.2012.03.005

Anton Muscatelli, V., & Tirelli, P. (2001). Unemployment and growth: Some empirical evidence from structural time series models. *Applied Economics, 33*(8), 1083-1088. doi:10.1080/00036840010003276

Anwar, S., & Nguyen, L. P. (2010). Foreign direct investment and economic growth in Vietnam. *Asia Pacific Business Review, 16*(1-2), 183-202. doi:10.1080/10438590802511031

Anwar, S., & Nguyen, L. P. (2011). Foreign direct investment and trade: The case of Vietnam. *Research in International Business and Finance, 25*(1), 39-52. doi:10.1016/j.ribaf.2010.05.004

Asfaw, S., Mithöfer, D., & Waibel, H. (2009). Investment in compliance with GlobalGAP standards: does it pay off for small-scale producers in Kenya? *Quarterly Journal of International Agriculture*, 4, 337 – 362.

Asfaw, S., Mithöfer, D., & Waibel, H. (2010). What impact are EU supermarket standards having on developing countries' export of high-value horticultural products? evidence from Kenya. *Journal of International Food & Agribusiness Marketing, 22*(3-4), 252-276. doi:10.1080/08974431003641398

Asheghian, P. (2004). Determinants of Economic Growth in the United States: The role of foreign direct investment. *The International Trade Journal, 18*(1), 63-83. doi:10.1080/08853900490277350

Asheghian, P. (2009). Determinants of economic growth in Japan: The role of foreign direct investment. *Global Economy Journal, 9*(3), 9. doi:10.2202/1524-5861.1509

Athukorala, P. (2009). The rise of China and East Asian export performance: Is the crowding-out fear warranted? *World Economy, 32*(2), 234-266. doi:10.1111/j.1467-9701.2008.01151.x

Baglioni, E. (2015). Straddling contract and estate farming: Accumulation strategies of Senegalese horticultural exporters. *Journal of Agrarian Change, 15*(1), 17-42. doi:10.1111/joac.12032

Bahmani-Oskooee, M., & Alse, J. (1993). Export growth and economic growth: An application of cointegration and error-correction modeling. *The Journal of Developing Areas*, 535-542. Retrieved from http://www.jstor.org/stable/4192260

Bahmani-Oskooee, M., & Economidou, C. (2009). Export-led growth vs. growth led exports: LDCs experience. *The Journal of Developing Areas, 42*(2), 179-212. doi:10.1353/jda.0.0030

Bahmani-Oskooee, M., Mohtadi, H., & Shabsigh, G. (1991). Exports, growth and causality in LDCs: A re-examination. *Journal of Development Economics, 36*(2), 405-415. doi:10.1016/0304-3878(91)90044-V

Balassa, B. (1979). Export composition and export performance in the industrial countries, 1953-71. *The Review of Economics and Statistics, 61*(4), 604-607. Retrieved from http://www.jstor.org/stable/1935791

Balassa, B. (1985). Exports, policy choices, and economic growth in developing countries after the 1973 oil shock. *Journal of development economics, 18*(1), 23-35. doi:10.1016/0304-3878(85)90004-5

Baldwin, J., & Yan, B. (2012). Export market dynamics and Plant-Level productivity: Impact of tariff reductions and Exchange-Rate cycles. *The Scandinavian Journal of Economics, 114*(3), 831-855. doi:10.1111/j.1467-9442.2012.01716.x

Banjo, A. D., Lawal, O. A., Fapojuwo, O. E., & Songonuga, E. A. (2003). Farmer's knowledge and perception of horticultural insect pest problems in southwestern Nigeria. *African Journal of Biotechnology, 2*(11), 434-437. doi:10.5897/AJB2003.000-1087

Barrett, H. R., Ilbery, B. W., Brown, A. W., & Binns, T. (1999). Globalization and the changing networks of food supply: the importation of fresh horticultural produce from Kenya into the UK. *Transactions of the Institute of British Geographers*, *24*(2), 159-174. doi:10.1111/j.0020-2754.1999.00159.x

Barrientos, S., & Visser, M. (2012). *South African horticulture: opportunities and challenges for economic and social upgrading in value chains*. Brooks World Poverty Institute Working Paper Series (BWPI), The University of Manchester.

Barrientos, S., Dolan, C., & Tallontire, A. (2003). A gendered value chain approach to codes of conduct in African horticulture. *World Development*, *31*(9), 1511-1526.

Barro, R. J. (1998). *Determinants of Economic Growth: A Cross-Country Empirical Study*. Oxford: MIT Press.

Barro, R. J. (2001). Human capital and growth. *The American Economic Review*, 91(2), 12-17. doi:10.1257/aer.91.2.12

Barro, R. J., & Sala-i-Martin, X. (2004). *Economic Growth*. MIT Press. *Cambridge, Massachusettes*.

Barro, R.J. (1991). Economic Growth in a Cross Section of Countries. *The Quarterly Journal of Economics,* 106(2), 407-443.

Bas, M. & Berthou, A. (2012). The decision to import capital goods in India: Firms' financial factors matter. *World Bank Economic Review,* 26(3), 486-513. doi:10.1093/wber/lhs002

Bas, M., & Strauss-Kahn, V. (2014). Does importing more inputs raise exports? Firm-level evidence from France. *Review of World Economics*, 150(2), 241-275. doi:10.1007/s10290-013-0175-0

Baxter, M., & Kouparitsas, M. A. (2006). What Can Account for Fluctuations in the Terms of Trade? *International Finance*, *9*(1), 63-86. 10.1111/j.1468-2362.2006.00034.x

Baxter, M., & Stockman, A. C. (1989). Business cycles and the exchange-rate regime: some international evidence. *Journal of monetary Economics*, *23*(3), 377-400. doi:10.1016/0304-3932(89)90039-1

Behar, A., Manners, P., & Nelson, B. D. (2013). Exports and international logistics. *Oxford Bulletin of Economics and Statistics*, *75*(6), 855-886. doi:10.1111/j.1468-0084.2012.00715.x

Belwal, R., & Chala, M. (2008). Catalysts and barriers to cut flower export: A case study of Ethiopian floriculture industry. *International Journal of Emerging Markets*, 3(2), 216-235. doi:10.1108/17468800810862650

Belzile, J. A., & Öberg, G. (2012). Where to begin? Grappling with how to use participant interaction in focus group design. *Qualitative Research*, 12(4), 459-472. doi:10.1177/1468794111433089

Benhabib, J., & Spiegel, M. M. (1994). The role of human capital in economic development evidence from aggregate cross-country data. *Journal of Monetary economics*, *34*(2), 143-173.

Beny, L. N., & Cook, L. D. (2009). Metals or management? Explaining Africa's recent economic growth performance. *The American Economic Review*, 99(2), 268-274. doi:10.1257/aer.99.2.268

Bernard, A. B., Jensen, J. B., Redding, S. J., & Schott, P. K. (2007). Firms in international trade. *The Journal of Economic Perspectives*, *21*(3), 105-130.

Bitzer, J., & Görg, H. (2009). Foreign direct investment, competition and industry performance. *World Economy*, 32(2), 221-233. doi:10.1111/j.1467-9701.2008.01152.x

Blackburn, J., & Scudder, G. (2009). Supply chain strategies for perishable products: The case of fresh produce. *Production and Operations Management*, 18(2), 129-137. doi:10.1111/j.1937-5956.2009.01016.x

Bleaney, M. F. (1996). Macroeconomic stability, investment and growth in developing countries. *Journal of Development Economics*, 48(2), 461-477. doi:10.1016/0304-3878(95)00049-6

Bleaney, M., & Greenaway, D. (2001). The impact of terms of trade and real exchange rate volatility on investment and growth in sub-Saharan Africa. *Journal of Development Economics*, 65(2), 491-500. doi:10.1016/S0304-3878(01)00147-X

Boccanfuso, D., Savard, L., & Savy, B. E. (2013). Human capital and growth: New evidences from African data. *International Economic Journal*, 27(1), 55-77. doi:10.1080/10168737.2012.659276

Bogataj, M., Bogataj, L., & Vodopivec, R. (2005). Stability of perishable goods in cold logistic chains. *International Journal of Production Economics*, 93(1), 345-356. doi:10.1016/j.ijpe.2004.06.032

Borensztein, E., De Gregorio, J., & Lee, J. -. (1998). How does foreign direct investment affect economic growth? *Journal of International Economics*, 45(1), 115-135. doi:10.1016/S0022-1996(97)00033-0

Boselie, D., Henson, S., & Weatherspoon, D. (2003). Supermarket procurement practices in developing countries: Redefining the roles of the public and private sectors. *American Journal of Agricultural Economics*, *85*(5), 1155-1161. doi:10.1111/j.0092-5853.2003.00522.x

Boslaugh, S. (2007). *Secondary data sources for public health: A practical guide*. Cambridge University Press.

Bosona, T., & Gebresenbet, G. (2013). Food traceability as an integral part of logistics management in food and agricultural supply chain. *Food Control*, 33(1), 32-48.

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. doi:10.1191/1478088706qp063oa

Bruton, H. J. (1998). A reconsideration of import substitution. *Journal of Economic Literature*, 903-936.

Bryman, A. (2012). *Social research methods* (4th ed.). New York: Oxford University Press.

Bryman, A. (2016). *Social research methods* (Fifth ed.). Oxford: Oxford University Press.

Burgess, R. G. (1982). *Field research: A sourcebook and field manual*. London: Allen & Unwin.

Byrne, D. S. (2011). *Applying social science: The role of social research in politics, policy and practice.* Bristol: Policy.

Cavallo, E. A., & Frankel, J. A. (2008). Does openness to trade make countries more vulnerable to sudden stops, or less? Using gravity to establish causality. *Journal of International Money and Finance*, 27(8), 1430-1452. doi:10.1016/j.jimonfin.2007.10.004

CBI Ministry of Foreign Affairs. (2014). *On the trail of change: CBI Annual Report*. Retrieved from https://www.cbi.eu/sites/default/files/cbi-annual-report-2014.pdf.

Central Bank of Nigeria, CBN (2016). *Crude Oil Price*. Retrieved from https://www.cbn.gov.ng/rates/crudeoil.asp?year=2016

Central Intelligence Agency, CIA. (2017). *The World Factbook.* Retrieved from https://www.cia.gov/library/publications/the-world-factbook/

Central Intelligence Agency, CIA. (2017a). *The World Factbook: Africa: Nigeria.* Retrieved from https://www.cia.gov/library/publications/the-world-factbook/geos/ni.html

Central Intelligence Agency, CIA. (2017b). The World Factbook: Africa: Egypt. Retrieved from https://www.cia.gov/library/publications/the-world-factbook/geos/eg.html

Central Intelligence Agency, CIA. (2017c). *The World Factbook: Africa: Kenya.* Retrieved from https://www.cia.gov/library/publications/the-world-factbook/geos/ke.html

Chande, A., Dhekane, S., Hemachandra, N., & Rangaraj, N. (2005). Perishable inventory management and dynamic pricing using RFID technology. *Sadhana*, 30(2), 445-462. doi:10.1007/BF02706255

Chandra, V. (Ed.). (2006). *Technology, adaptation, and exports : How some developing countries got it right*. Washington: The World Bank. doi:10.1596/978-0-8213-6507-6

Chandrasekaran, N., & Raghuram, G. (2014). *Agribusiness Supply Chain Management*. CRC Press.

Chansarn, S. (2010). Labor productivity growth, education, health and technological progress: A cross-country analysis. *Economic Analysis and Policy*, 40(2), 249-261. doi:10.1016/S0313-5926(10)50027-4

Chemnitz, C., & des Landbaus, S. (2011). The compliance process of food quality standards on primary producer level: a case study of the EurepGap standard in the Moroccan Tomato sector. *FÜR MEINE GROßMUTTER*, 116.

Citi. (2011) *Global Economics View: Global Growth Generators: Moving beyond 'Emerging Markets' and 'BRIC'*. Retrieved from https://web.archive.org/web/20111203042742/http://www.nber.org/~wbuiter/3G.pdf

Clarke, V. & Braun, V. (2013). *Successful qualitative research: A practical guide for beginners*. London ; Los Angeles: SAGE.

Clerides, S. K., Lach, S., & Tybout, J. R. (1998). Is learning by exporting important? micro-dynamic evidence from Colombia, Mexico, and Morocco. *The Quarterly Journal of Economics*, 113(3), 903-947. doi:10.1162/003355398555784

Colen, L., Maertens, M., & Swinnen, J. (2012). Private standards, trade and poverty: GlobalGAP and horticultural employment in Senegal. *The World Economy*, 35(8), 1073-1088. doi:10.1111/j.1467-9701.2012.01463.x

Collins, K.M.T. (2010). *Advanced Sampling Designs in Mixed Research: Current Practices and Emerging Trends in the Social and Behavioural Sciences. I*n A. Tashakkori & C. Teddlie (Eds), Sage handbook of mixed methods in social & behavioral research (2nd ed.). (pp.353-377). London; Los Angeles; SAGE.

Colombatto, E. (1990). An analysis of exports and growth in LDCs. *Kyklos, 43*(4), 579-597.

Cook, T. A., Alston, R., & Raia, K. (2012). *Mastering import & export management* (2nd ed.). New York, NY: American Management Association.

Coyle, J.J., Langley Jr, C.J., Novack, R.A., & Gibson, B.J. (2013). *Managing supply chains: A logistics approach* (9th, International ed.). Australia;United Kingdom;: South-Western Cengage Learning.

Cuaresma, J. C., & Wörz, J. (2005). On export composition and growth. *Review of World Economics*, 141(1), 33-49. doi:10.1007/s10290-005-0014-z

Cunningham, B. M. (2003). The distributional heterogeneity of growth effects: Some evidence. *The Manchester School*, 71(4), 417-447. doi:10.1111/1467-9957.00354.

Curtis, B., & Curtis, C. (2011). *Social research: A practical introduction*. Los Angeles, [Calif.]; London;: SAGE.

Damoense-Azevedo, M. Y. (2013). Modeling long-run determinants of economic growth for the Mauritian economy. *The Journal of Developing Areas*, 47(1), 1-21.

Das, S., Roberts, M. J., & Tybout, J. R. (2007). Market entry costs, producer heterogeneity, and export dynamics. *Econometrica*, 75(3), 837-873. doi:10.1111/j.1468-0262.2007.00769.x

Debaere, P., & Mostashari, S. (2010). Do tariffs matter for the extensive margin of international trade? an empirical analysis. *Journal of International Economics*, 81(2), 163-169. doi:10.1016/j.jinteco.2010.03.005

Dennis, A., & Shepherd, B. (2011). Trade facilitation and export diversification. *The World Economy*, 34(1), 101-122. doi:10.1111/j.1467-9701.2010.01303.x

Denton & Swarup, V. (1983). Tomato cultivation and its potential in Nigeria. Acta Hort. International Society for Horticultural Science, ISHS) 123. (pp. 257-272). doi: 10.17660/ActaHortic.1983.123.23

Desai, B. B., & Salunkhe, D. K. (1991). Fruits and vegetables. *In Foods of plant origin* (pp. 301-412). Springer US.

Devlin, J., & Yee, P. (2005). Trade logistics in developing countries: The case of the Middle East and North Africa. *World Economy, 28*(3), 435-456. doi:10.1111/j.1467-9701.2005.00620.x

Diao, X., Hazell, P. B., Resnick, D., & Thurlow, J. (2007). *The role of agriculture in development: Implications for Sub-Saharan Africa* (Vol. 153). Intl Food Policy Res Inst.

Diop, N., & Jaffee, S. (2005). Fruits and vegetables: global trade and competition in fresh and processed product markets. *Global agricultural trade and developing countries*, 237-57.

Djankov, S., Freund, C., & Pham, C. S. (2010). Trading on time. *The Review of Economics and Statistics*, *92*(1), 166-173.

Doganis, R. (2005). *The airport business*, Routledge.

Dolan, C., & Humphrey, J. (2000). Governance and trade in fresh vegetables: The impact of UK supermarkets on the African horticulture industry. *The Journal of Development Studies*, 37(2), 147-176. doi:10.1080/713600072

Dolan, C., & Humphrey, J. (2004). Changing governance patterns in the trade in fresh vegetables between Africa and the United kingdom. *Environment and Planning* A, 36(3), 491-509. doi:10.1068/a35281

Dollar, D. (1992). Outward-oriented developing economies really do grow more rapidly: Evidence from 95 LDCs, 1976-1985. *Economic Development and Cultural Change*, 40(3), 523-544. doi:10.1086/451959

Dollar, D., & Kraay, A. (2003). Institutions, trade, and growth. *Journal of Monetary Economics*, 50(1), 133-162. doi:10.1016/S0304-3932(02)00206-4

Duan, Y., Xu, X., Liu, X., Zografos, K., & Bemeleit, B. (2007). Accelerating internet adoption in china's fresh produce supply chain: A VEGNET approach. *New Zealand Journal of Agricultural Research*, 50(5), 1299-1305. doi:10.1080/00288230709510416

Dutta, N., & Roy, S. (2009). What attracts foreign direct investment: A closer look. *Economic Affairs*, 29(3), 81-86. doi:10.1111/j.1468-0270.2009.01925.x

Easterby-Smith, M., Thorpe, R., & Jackson, P. (2012). *Management research* (4th ed.). Los Angeles, [Calif.]; London; SAGE.

Easterby-Smith, M., Thorpe, R., & Jackson, P. (2015). *Management and business research* (Fifth ed.). Los Angeles: SAGE.

Easterly, W., & Kraay, A. (2000). Small states, small problems? Income, growth, and volatility in small states. *World Development,* 28(11), 2013-2027. doi:10.1016/S0305-750X(00)00068-1

Economic and Social Research Council, ESRC. (2016). *Our core principles*. Retrieved from http://www.esrc.ac.uk/funding/guidance-for-applicants/research-ethics/our-core-principles/

EgyptAir Cargo (2015). *EgyptAir Cargo Provides Handling Services via Its huge Cargo facilities for the Perishables.* Retrieved from http://www.egyptair-cargo.com/cargo/Services1.htm

Ehlert, C., Waibel, H., & Mithöfer, D. (2011). Food Safety Standards, Farm Size and Farm Worker Welfare in Kenya. *Vegetable Production & Marketing in Africa: Socio-economic Research. UK: CABI.*

Eicher, T. S., Schubert, S. F., & Turnovsky, S. J. (2008). Dynamic effects of terms of trade shocks: The impact on debt and growth. *Journal of International Money and Finance*, *27*(6), 876-896. doi:10.1016/j.jimonfin.2007.04.015

Eisenhardt, K. M. (1989). Building theories from case study research. *The Academy of Management Review*, 14(4), 532-550. doi:10.5465/AMR.1989.4308385

El-Nahrawy, M. A. (2011). *Country pasture/forage resource profiles: Egypt.* Food and Agriculture Organization of the United Nations (FAO). Retrieved from http://www.fao.org/ag/AGP/AGPC/doc/Counprof/PDF%20files/Egypt.pdf

Emlinger, C., Chevassus-Lozza, E., & Jacquet, F. (2010). Fruit and vegetable access to EU markets: Dissecting tariffs faced by Mediterranean countries. *Food Policy*, *35*(6), 599-611. doi:10.1016/j.foodpol.2010.07.002

Emlinger, C., Jacquet, F., & Lozza, E. C. (2008). Tariffs and other trade costs: assessing obstacles to Mediterranean countries' access to EU-15 fruit and vegetable markets. *European Review of Agricultural Economics*, *35*(4), 409-438. doi:10.1093/erae/jbn031

Emmett, S. and Crocker, B. (2010) *Excellence in global supply chain management Understanding and improving global supply chains*. Cambridge: Cambridge Academic.

Esfahani, H. S. (1991). Exports, imports, and economic growth in semi-industrialized countries. *Journal of Development Economics*, *35*(1), 93-116.

Euromonitor International. (2016). *Nigeria: Country Profile*. Retrieved from http://www.portal.euromonitor.com.libaccess.hud.ac.uk/portal/analysis/tab.

European Commission (2013) *Final Report of an Audit carried out in Kenya from 12 to 22 November 2013:* European Commission: Health and Consumers Directorate-General. DG(SANCO) 2013-6817 - MR FINAL. Retrieved from ec.europa.eu/food/fvo/act_getPDF.cfm?PDF_ID=10858

European Commission (2014) *Response of the Competent Authorities of Kenya to the recommendations of Report ref. DG(SANCO)/2013-6817 -MR of an audit carried out from 12 November 2013 to 22 November 2013 in order to evaluate the system of official controls for the export of plants and plant products to the European Union* Retrieved from ec.europa.eu/food/fvo/act_getPDFannx.cfm?ANX_ID=7505

European Commission (2015). *Trade: Countries and Regions.* Retrieved from http://ec.europa.eu/trade/policy/countries-and-regions/regions/west-africa/

European Commission (2016). *Maximum Residue Levels.* Retrieved from http://ec.europa.eu/food/plant/pesticides/max_residue_levels/index_en.htm

European Union Notification System for Plant Health Interceptions, EUROPHYT (2014). *Annual Report 2014*. European Commission Retrieved from http://ec.europa.eu/food/plant/docs/ph_biosec_europhyt_annual-report_2014.pdf

Fagerberg, J. (2000). Technological progress, structural change and productivity growth: A comparative study. *Structural Change and Economic Dynamics*, 11(4), 393-411. doi:10.1016/S0954-349X(00)00025-4

FAO. (2013). *The 2013 FAO Statistical Yearbook.* Retrieved from http://www.fao.org/docrep/018/i3107e/i3107e.PDF

FAO. (2014). *The State of Food and Agriculture 2014: Innovation in family farming.* Retrieved from http://www.fao.org/publications/sofa/2014/en/

FAO. (2015, p133). *FAO Statistical Pocketbook: Coffee 2015*. Retrieved from http://www.fao.org/3/a-i4985e.pdf

FAO. (2016a). *List of Codex members.* Retrieved from http://www.fao.org/fao-who-codexalimentarius/members-observers/members/en/?no_cache=1

FAO. (2016b). *Codex Alimentarius: International Food Standards.* Retrieved from http://www.fao.org/fao-who-codexalimentarius/en/ and http://www.fao.org/fao-who-codexalimentarius/about-codex/en/

FAO. (2016c). *Nigeria at a glance*. Retrieved from http://www.fao.org/nigeria/fao-in-nigeria/nigeria-at-a-glance/en/

FAO. (2016d). *Fruit and vegetable processing*. Retrieved from http://www.fao.org/docrep/v5030e/v5030e0u.htm

FAO. (2016e). *Guidelines for phytosanitary certificates*. Retrieved from http://www.fao.org/docrep/004/y3241e/y3241e06.htm

FAOSTAT (2016a) *Commodities by countries* Retrieved from http://fenix.fao.org/faostat/beta/en/#rankings/commodities_by_country_exports

FAOSTAT. (2013). http://faostat.fao.org/desktopdefault.aspx?pageid=342&lang=en&country=59

FAOSTAT. (2016b). *Countries by commodity: Mangoes.* Retrieved from http://www.fao.org/faostat/en/#rankings/countries_by_commodity

Fatás, A., & Mihov, I. (2013). Policy volatility, institutions, and economic growth. *Review of Economics and Statistics*, *95*(2), 362-376. doi:10.1162/REST_a_00265

Fatokun, O. (2005). *African Air Transport in the 21st Century: A Case Study of the contrasting experience of Nigeria and Kenya.* Bedford: Cranfield University.

Fearne, A., & Hughes, D. (2000). Success factors in the fresh produce supply chain: insights from the UK. *British Food Journal*, *102*(10), 760-772. doi:10.1108/00070700010362194

Federal Ministry of Agriculture and Rural Development, FMARD. (2016). *Home*. Retrieved from https://fmard.gov.ng/

Feenstra, R. C. (1996). Trade and uneven growth. *Journal of Development Economics*, *49*(1), 229-256. doi:10.1016/0304-3878(95)00059-3

Feenstra, R. C., & Kee, H. L. (2007). Trade liberalisation and export variety: a comparison of Mexico and China. *The World Economy*, *30*(1), 5-21. doi:10.1111/j.1467-9701.2007.00869.x

Feenstra, R., & Kee, H. L. (2008). Export variety and country productivity: Estimating the monopolistic competition model with endogenous productivity. *Journal of International Economics*, *74*(2), 500-518. doi:10.1016/j.jinteco.2006.11.006

Fernandez-Stark, K., Bamber, P., & Gereffi, G. (2011). Workforce development in the fruit and vegetable global value chain. *Center on Globalization Governance & Competitiveness and RTI International*.

Findlay, R. (1978). Relative backwardness, direct foreign investment, and the transfer of technology: a simple dynamic model. *The Quarterly Journal of Economics*, *92*(1), 1-16.

Fischer, S. (1993). The role of macroeconomic factors in growth. *Journal of Monetary Economics*, 32(3), 485-512. doi:10.1016/0304-3932(93)90027-D

Foster, N. (2008). The impact of trade liberalisation on economic growth: Evidence from a quantile regression analysis. *Kyklos*, *61*(4), 543-567. doi:10.1111/j.1467-6435.2008.00417.x

Foster, V., & Briceño-Garmendia, C. (Eds.). (2010). Africa's Infrastructure: A Time for Transformation. *The World Bank, Washington, DC*. Retrieved from http://issuu.com/world.bank.publications/docs/9780821380413.

Fosu, A. K. (1990). Export composition and the impact of exports on economic growth of developing economies. *Economics Letters*, 34(1), 67-71.

Frankel, J., & Rose, A. (2002). An estimate of the effect of common currencies on trade and income. The *Quarterly Journal of Economics*, 117(2), 437-466. doi:10.1162/003355302753650292

Freidberg, S. (2009). *Fresh: A perishable history*. Harvard University Press.

Freund, C., & Rocha, N. (2011). What constrains Africa's exports? *The World Bank Economic Review*, *25*(3), 361-386. doi:10.1093/wber/lhr016

Fuchs, D., Kalfagianni, A., & Havinga, T. (2011). Actors in private food governance: The legitimacy of retail standards and multistakeholder initiatives with civil society participation. *Agriculture and Human Values*, 28(3), 353-367. doi:10.1007/s10460-009-9236-3

Garcia Martinez, M., & Poole, N. (2004). The development of private fresh produce safety standards: implications for developing Mediterranean exporting countries. *Food Policy*, *29*(3), 229-255. doi:10.1016/j.foodpol.2004.04.002

Garcia Martinez, M., Fearne, A., Caswell, J. A., & Henson, S. (2007). Co-regulation as a possible model for food safety governance: Opportunities for public–private partnerships. *Food Policy*, *32*(3), 299-314. doi:10.1016/j.foodpol.2006.07.005

García, F., Jin, B., & Salomon, R. (2013). Does inward foreign direct investment improve the innovative performance of local firms? *Research Policy, 42*(1), 231-244. doi:10.1016/j.respol.2012.06.005

Gebreeyesus, M. (2015). Firm adoption of international standards: evidence from the Ethiopian floriculture sector. *Agricultural Economics, 46*(S1), 139-155.

Gebreeyesus, M., & Iizuka, M. (2012). Discovery of Flower Industry in Ethiopia: Experimentation and Coordination. *Journal of Globalization and Development, 2*(2), 1-27.

Gemmell, N. (1996). Evaluating the impacts of human capital stocks and accumulation on economic growth: some new evidence. *Oxford bulletin of Economics and Statistics* 58(1), 9-28.

Gereffi, G. (1994). The organization of buyer-driven global commodity chains: How US retailers shape overseas production networks. In G. Gereffi, & M. Korzeniewicz (Eds.), *Commodity chains and global capitalism* (pp. 95–123). Westport, CT: Praeger.

Gereffi, G. (1995). Global Production Systems and Third World Development. *Global change, regional response: The new international context of development*.

Gereffi, G. (2005). The global economy: organization, governance, and development. *The handbook of economic sociology, 2*, 160-182.

Gereffi, G., & Fernandez-Stark, K. (2011). Global value chain analysis: a primer. *Center on Globalization, Governance & Competitiveness (CGGC), Duke University, North Carolina, USA.*

Gereffi, G., & Lee, J. (2012). Why the world suddenly cares about Global supply chains. *Journal of Supply Chain Management*, 48(3), 24-32. doi:10.1111/j.1745-493X.2012.03271.x

Gerson, K.., and Horowitz, R. (2002). 'Observation and Interviewing: Options and Choices', in T. May (ed.), *Qualitative Research in Action*. London: Sage.

Giovanni, J. D., & Levchenko, A. A. (2009). Trade openness and volatility. *The Review of Economics and Statistics, 91*(3), 558-585. doi:10.1162/rest.91.3.558

Goetz, L., & Grethe, H. (2009). The EU entry price system for fresh fruits and vegetables–Paper tiger or powerful market barrier? *Food Policy, 34*(1), 81-93. doi:10.1016/j.foodpol.2008.06.005

Goger, A., Hull, A., Barrientos, S., Gereffi, G., & Godfrey, S. (2014). Capturing the Gains in Africa: Making the most of global value chain participation. *Duke Center on Globalization, Governance & Competitiveness at the Social Science Research Institute*.

Gould, D. M., Tan, C., & Emamgholi, A. S. S. (2014). Attracting foreign direct investment: What can south Asia's lack of success teach other developing countries? *South Asia Economic Journal*, 15(2), 133-174. doi:10.1177/1391561414548939

Goyal, M., & Sharma, S. K. (2009). Traditional wisdom and value addition prospects of arid foods of desert region of North West India. *Indian J Tradit Knowl, 8*, 381-385.

Gray, D. E. (2014). *Doing research in the real world* (Third ed.). London: Sage Publications.

Greenaway, D., Morgan, W., & Wright, P. (1999). Exports, export composition and growth. *The Journal of International Trade & Economic Development, 8*(1), 41-51. doi:10.1080/09638199900000004

Groom, B., & MacGregor, J. (2007). Trade, development and poverty: the role of air freighted horticultural products. *Fresh Insights*, (11).

Grossman, G. M., & Helpman, E. (1990). Comparative advantage and long-run growth. *The American Economic Review, 80*(4), 796-815.

Grossman, G. M., & Helpman, E. (1991). Trade, knowledge spillovers, and growth. *European Economic Review, 35*(2), 517-526.

Grant, H. & Wheeler, J. (2015, November 19). UK pressures Nigeria to help Home Office increase deportations. *Immigration and asylum.* Retrieved from https://www.theguardian.com/uk-news/2015/nov/19/uk-pressures-nigeria-help-home-office-deportations-embassy-immigration-crackdown

Growth Commission. (2008). The Growth Report: Strategies for Sustained Growth and Inclusive Development. *World Bank. Washington, DC*.

Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods, 18*(1), 59-82. doi:10.1177/1525822X05279903

Haddad, M., Lim, J. J., Pancaro, C., & Saborowski, C. (2013). Trade openness reduces growth volatility when countries are well diversified: Trade openness can reduce growth volatility. *Canadian Journal of Economics/Revue Canadienne d'Économique, 46*(2), 765-790. doi:10.1111/caje.12031

Haldar, S. K., & Mallik, G. (2010). Does human capital cause economic growth? A case study of India. *International Journal of Economic Sciences and Applied Research*, (1), 7-25.

Hanushek, E. A. (2013). Economic growth in developing countries: The role of human capital. *Economics of Education Review, 37*, 204-212. doi:10.1016/j.econedurev.2013.04.005

Harberger, A. C. (1950). Currency depreciation, income, and the balance of trade. *Journal of Political Economy, 58*(1), 47-60. doi:10.1086/256897

Harris, R., & Cher Li, Q. (2012). Export-market dynamics and firm-level productivity: Evidence for UK tradable sectors. *Industrial and Corporate Change, 21*(3), 649-670. doi:10.1093/icc/dtr054

Harrison, A. (1996). Openness and growth: A time-series, cross-country analysis for developing countries. *Journal of Development Economics, 48*(2), 419-447. doi:10.1016/0304-3878(95)00042-9

Haskel, J. E., Pereira, S. C., & Slaughter, M. J. (2007). Does inward foreign direct investment boost the productivity of domestic firms? *The Review of Economics and Statistics, 89*(3), 482-496. doi:10.1162/rest.89.3.482

Hatanaka, M. (2011). Susanne Freidberg: Fresh: a perishable history. *Agriculture and Human Values* 28(1): 139-140.

Hausmann, R., Hwang, J., & Rodrik, D. (2007). What you export matters. *Journal of Economic Growth*, 12(1), 1-25. doi:10.1007/s10887-006-9009-4

Helpman, E., Melitz, M., & Rubinstein, Y. (2008). Estimating Trade Flows: Trading Partners and Trading Volumes. *The Quarterly Journal of Economics, 123*(2), 441-487. Retrieved from http://www.jstor.org/stable/25098907

Henson, S., & Humphrey, J. (2010). Understanding the complexities of private standards in global agri-food chains as they impact developing countries. *The Journal of Development Studies, 46*(9), 1628-1646. doi:10.1080/00220381003706494

Henson, S., & Jaffee, S. (2008). Understanding developing country strategic responses to the enhancement of food safety standards. *The World Economy*, *31*(4), 548-568. doi:10.1111/j.1467-9701.2007.01034.x

Henson, S., & Loader, R. (2001). Barriers to agricultural exports from developing countries: The role of sanitary and phytosanitary requirements. *World Development, 29*(1), 85-102. doi:10.1016/S0305-750X(00)00085-1

Henson, S., & Reardon, T. (2005). Private agri-food standards: Implications for food policy and the agri-food system. *Food Policy, 30*(3), 241-253. doi:10.1016/j.foodpol.2005.05.002

Henson, S., & Wilson, J. S. (2005). *The WTO and technical barriers to trade*. Edward Elgar Publishing.

Henson, S., Masakure, O., & Cranfield, J. (2011). Do fresh produce exporters in sub-Saharan Africa benefit from GlobalGAP certification? *World Development, 39*(3), 375-386. doi:10.1016/j.worlddev.2010.06.012

Herzer, D. (2012). How does foreign direct investment really affect developing countries' growth? *Review of International Economics, 20*(2), 396-414. doi:10.1111/j.1467-9396.2012.01029.x

Herzer, D., Nowak-Lehmann D, F., & Siliverstovs, B. (2006). Export-led growth In Chile: Assessing the role of export composition in productivity growth. *The Developing Economies*, 44(3), 306-328. doi:10.1111/j.1746-1049.2006.00019.x

Herzfeld, T., Drescher, L. S., & Grebitus, C. (2011). Cross-national adoption of private food quality standards. *Food Policy*, *36*(3), 401-411. doi:10.1016/j.foodpol.2011.03.006

Hnatkovska, V., & Loayza, N. (2004). *Volatility and growth* (Vol. 3184). World Bank. Retrieved from http://documents.worldbank.org/curated/en/154121468765320854/pdf/WPS3184.pdf

Horticultural Crops Development Authority, HCDA. (2013). *Role of Horticultural Crops Development Authority and Horticulture Sector Performance Report.* Retrieved from http://hortcrsp.ucdavis.edu/2013/other/hcda%20horticulture%20subsector%20brief.pdf

Horticulture Collaborative Research Support Program, HortCRSP (2011) *Annual Report* 2010-2011. Retrieved from http://hortcrsp.ucdavis.edu/main/media%20page/2010Annual_Report_smaller.pdf

Hossain, S., & Mitra, R. (2013). The determinants of economic growth in Africa: a dynamic causality and panel cointegration analysis. *Economic Analysis and Policy*, *43*(2), 217-226.

Hummels, D. L., & Schaur, G. (2013). Time as a trade barrier. *The American Economic Review, 103*(7), 2935-2959. doi:10.1257/aer.103.7.2935

Hummels, D., & Klenow, P. J. (2005). The variety and quality of a nation's exports. *The American Economic Review, 95*(3), 704-723. doi:10.1257/0002828054201396

Humphrey, J. (July, 2008). Private Standards, small farmers and donor policy: EUREPGAP in Kenya. IDS Working Paper 308. *Institute of Development Studies at the University of Sussex*, Brighton.

Ibeawuchi, I. I., Okoli, N. A., Alagba, R. A., Ofor, M. O., Emma-Okafor, L. C., Peter-Onoh, C. A., & Obiefuna, J. C. (2015). Fruit and Vegetable Crop Production in Nigeria: The gains, challenges and the way forward. *Journal of Biology, Agriculture and Healthcare, 5*(2), 194-208.

Imam, P. A., Granziera, E., & Norbert, F. (2008). *Terms of trade shocks and economic recovery* (No. 8-36). International Monetary Fund.

International Fund for Agricultural Development, IFAD. (2008). *Egypt: Smallholder contract farming for high-value and organic. Retrieved from* www.ifad.org/pub/pn/egypt.pdf

International Society for Horticultural Science, ISHS. (2016). *Defining Horticulture*. Retrieved from http://www.ishs.org/defining-horticulture

International Trade Centre, ITC. (2011). *GlobalG.A.P*. Retrieved from www.intracen.org/WorkArea/DownloadAsset.aspx?id=58628

Ismaila, D. A., Warnock-Smith, D., & Hubbard, N. (2014). The impact of air service agreement liberalisation: the case of Nigeria. *Journal of Air Transport Management*, 37, 69-75.

Jääskelä, J. P., & Smith, P. (2013). Terms of trade shocks: What are they and what do they do? *Economic Record*, *89*(285), 145-159. doi:10.1111/1475-4932.12039

Jaeger, P. (2008). Ghana Export Horticulture Cluster Strategic Profile Study. Part I-Scoping review. *Report prepared for World Bank Sustainable Development Network (WB-SDN), Africa Region, Agriculture and Rural Development (AFTAR), The Republic of Ghana Ministry of Food and Agriculture and European Union All ACP Agricultural Commodities Programme (EU-AAACP).*

Jaffee, S. M., & Henson, S. (2005). Agro-food exports from developing countries: the challenges posed by standards. *Global agricultural trade and developing countries*, 91-114.

Jarach, D. (2001). The evolution of airport management practices: towards a multi-point, multi-service, marketing-driven firm. *Journal of Air Transport Management*, 7(2): 119-125.

Jarreau, J., & Poncet, S. (2012). Export sophistication and economic growth: Evidence from China. *Journal of development Economics*, *97*(2), 281-292. doi:10.1016/j.jdeveco.2011.04.001

Jawaid, S. T. (2014). Trade openness and economic growth: A lesson from Pakistan. *Foreign Trade Review*, 49(2), 193-212. doi:10.1177/0015732514525223

Jraisat, L. E. (2010). *Information sharing in an export supply chain relationship: The case of the Jordanian fresh fruit and vegetable export industry* (Doctoral dissertation, Brunel University Brunel Business School PhD Theses).

Jung, W. S., & Marshall, P. J. (1985). Exports, growth and causality in developing countries. *Journal of development economics*, *18*(1), 1-12.

Kainga, P. E., & Johnson, O. G. (2012). Economic Analysis of Horticultural Enterprises in Yenagoa Metropolis of Bayelsa State, Nigeria. *Journal of Agriculture and Social Research (JASR)*, *12*(1), 156-161.

Kalafsky, R. V. (2009). Export challenges and potential strategies: Canadian manufacturers in the Chinese market. *Journal of Small Business and Enterprise Development*, 16(1), 47-59. doi:10.1108/14626000910932872

Kaplinsky, R. (2000). Globalisation and unequalisation: What can be learned from value chain analysis? *Journal of development studies*, *37*(2), 117-146. doi:10.1080/713600071

Kasarda, J.D. and Green, J.D. (2005). Air cargo as an economic development engine: A note on opportunities and constraints. *Journal of Air Transport Management*, 11 (2005), pp. 459–462

Kavoussi, R. M. (1984). Export expansion and economic growth: Further empirical evidence. *Journal of Development Economics*, *14*(1), 241-250.

Keller, W., & Yeaple, S. R. (2009). Multinational enterprises, international trade, and productivity growth: Firm level evidence from the United States. *The Review of Economics and Statistics*, 91(4), 821-831. doi:10.1162/rest.91.4.821

Kenya Airways Cargo (2017) *Products: KQ Fresh.* Retrieved from http://www.kqcargo.com/products-and-services/products/kq-fresh/

Kenya Flower Council, KFC. (2013) *Floriculture in Kenya*. Retrieved from http://kenyaflowercouncil.org/?page_id=92

Kim, Y. (2011). The pilot study in qualitative inquiry: Identifying issues and learning lessons for culturally competent research. *Qualitative Social Work*, 10(2), 190-206. doi:10.1177/1473325010362001

Kitzinger, J., & Barbour, R. (Eds.). (1999). *Developing focus group research: politics, theory and practice*. Sage.

Konings, J. (2001). The effects of foreign direct investment on domestic firms: Evidence from firm-level panel data in emerging economies. *Economics of Transition*, 9(3), 619-633. doi:10.1111/1468-0351.00091

Kormendi, R. C., & Meguire, P. G. (1985). Macroeconomic determinants of growth: Cross-country evidence. *Journal of Monetary Economics, 16*(2), 141-163. doi:10.1016/0304-3932(85)90027-3

Koyenikan, M. J. (2008). Issues for agricultural extension policy in Nigeria. *Journal of Agricultural Extension, 12*(2), 52-62.

Kremer, S., Bick, A., & Nautz, D. (2013). Inflation and growth: New evidence from a dynamic panel threshold analysis. *Empirical Economics, 44*(2), 861-878. doi:10.1007/s00181-012-0553-9

Krueger, R. A., & Casey, M. A. (2014). *Focus groups: A practical guide for applied research*. Sage publications.

Kumar, S., & Pacheco, G. (2012). What determines the long run growth rate in Kenya? *Journal of Policy Modeling,* 34(5), 705-718. doi:10.1016/j.jpolmod.2012.01.009

Kuo, J. C., & Chen, M. C. (2010). Developing an advanced multi-temperature joint distribution system for the food cold chain. *Food Control, 21*(4), 559-566. doi:10.1016/j.foodcont.2009.08.007

LAForCE, V. C. (2011). EU Preferential Agricultural Trade Agreements with Developing Countries. *EU External Affairs Review*, 1(0), 71-93.

Laursen, S., & Metzler, L. A. (1950). Flexible exchange rates and the theory of employment. *The Review of Economics and Statistics,* 281-299.

Ledyaeva, S., & Linden, M. (2008). Determinants of economic growth: Empirical evidence from Russian regions. *The European Journal of Comparative Economics*, 5(1), 87-105.

Lee, J. (2010). Global commodity chains and global value chains. *The International Studies Encyclopedia, Wiley-Blackwell, Oxford*, 2987-3006.

Lee, J. (2011). Export specialization and economic growth around the world. *Economic Systems*, *35*(1), 45-63.

Leipold, B., & Morgante, F. (2013). The impact of the flower industry on Kenya's sustainable development. *International Public Policy Review*, 7(2), 1-31.

LeVasseur, J. J. (2003). The problem of bracketing in phenomenology. *Qualitative health research, 13*(3), 408-420.

Lewis, W. A. (2013). *Theory of economic growth* (Vol. 7). Routledge.

Lipsey, R. G., & Chrystal, K. A. (2015). *Economics* (Thirteenth ed.). Oxford: Oxford University Press.

Little, P. D., & Watts, M. (Eds.). (1994). *Living under contract: contract farming and agrarian transformation in sub-Saharan Africa*. Univ of Wisconsin Press.

Ma, T. (2009). Development strategy and export-led growth: Lessons learned from Taiwan's experience. *The Journal of Development Studies*, 45(7), 1150-1164. doi:10.1080/00220380902811041

MacGregor, J., & Vorley, B. (2007). *"Fair Miles": The Concept of" food Miles" Through a Sustainable Development Lens*. International institute for environment and development (IIED).

Maertens, M., & Swinnen, J. F. M. (2009). Trade, standards, and poverty: Evidence from Senegal. *World Development, 37*(1), 161-178. doi:10.1016/j.worlddev.2008.04.006

Maertens, M., Colen, L., & Swinnen, J. (2011). *Export vegetable supply chains and rural households in Senegal*. (pp. 111-126). Wallingford, UK: CABI. doi:10.1079/9781845936495.0111

Mah, J. S. (2010). Foreign direct investment inflows and economic growth: The case of Korea: FDI INFLOWS AND ECONOMIC GROWTH. *Review of Development Economics, 14*(4), 726-735. doi:10.1111/j.1467-9361.2010.00584.x

Mahadevan, R., & Suardi, S. (2008). A dynamic analysis of the impact of uncertainty on import- and/or export-led growth: The experience of Japan and the Asian Tigers. *Japan & the World Economy, 20*(2), 155-174. doi:10.1016/j.japwor.2006.10.001

Makinde, T. (2005). Problems of policy implementation in developing nations: the Nigerian experience. *Journal of Social sciences, 11*(1), 63-69.

Mankiw, N. G., & Taylor, M. P. (2011). *Economics* (2nd ed.). Andover: South-Western Cengage Learning.

Mankiw, N. G., & Taylor, M. P. (2014). *Economics* (Third ed.). Andover: Cengage Learning EMEA.

Mankiw, N. G., Romer, D., & Weil, D. N. (1992). A contribution to the empirics of economic growth. *The Quarterly Journal of Economics, 107*(2), 407-437. doi:10.2307/2118477

Manyong, V. M. (2005). *Agriculture in Nigeria: identifying opportunities for increased commercialization and investment*. IITA.

Manzini, R., & Accorsi, R. (2013). The new conceptual framework for food supply chain assessment. *Journal of Food Engineering, 115*(2), 251-263.

Markelova, H., & Mwangi, E. (2010). Collective action for smallholder market access: Evidence and implications for Africa: Collective action for smallholder market access. *Review of Policy Research, 27*(5), 621-640. doi:10.1111/j.1541-1338.2010.00462.x

Marshall, C., & Rossman, G. B. (2006). *Designing qualitative research*. London: Sage Publications.

Marucheck, A., Greis, N., Mena, C., & Cai, L. (2011). Product safety and security in the global supply chain: Issues, challenges and research opportunities. *Journal of Operations Management, 29*(7), 707-720. doi:10.1016/j.jom.2011.06.007

Mason, M. (2010, August). Sample size and saturation in PhD studies using qualitative interviews. In *Forum qualitative Sozialforschung/Forum: qualitative social research* 11(3).

Matthews, B., & Ross, L. (2010). *Research methods: A practical guide for the social sciences*. Harlow: Longman.

Mayer, F., & Gereffi, G. (2010). Regulation and economic globalization: Prospects and limits of private governance. *Business and Politics, 12*(3) doi:10.2202/1469-3569.1325

McCulloch, N., & Ota, M. (2002). *Export horticulture and poverty in Kenya. Institute of Development Studies, University of Sussex* (No. 174). Brighton. Working Paper.

McGregor, A. M., Shepherd, A. W., & Bammann, H. (2012). Promoting sustainable horticultural value chains in the South Pacific Islands-a review. In *iv international Symposium on Improving the Performance of Supply Chains in the Transitional Economies 1006* (pp. 325-334).

Melitz, M. J. (2003). The impact of trade on intra-industry reallocations and aggregate industry productivity. *Econometrica, 71*(6), 1695-1725. doi:10.1111/1468-0262.00467

Mendoza, E. G. (1995). The terms of trade, the real exchange rate, and economic fluctuations. *International Economic Review, 36*(1), 101-137.

Michaely, M. (1977). Exports and growth: an empirical investigation. *Journal of Development Economics, 4*(1), 49-53.

Mijiyawa, A. G. (2013). Africa's recent economic growth: What are the contributing factors?: Africa's recent economic growth. *African Development Review, 25*(3), 289-302. doi:10.1111/j.1467-8268.2013.12030.x

Mithöfer, D., & Waibel, H. (2011). *Vegetable production and marketing in Africa: Socio-economic research*. Wallingford, UK: CABI. doi:10.1079/9781845936495.0000

Mithofer, D., Waibel, H., & Asfaw, S. (2011). *Vegetable production and marketing in Africa: Socio-economic research.* CABI.

Mody, A., & Yilmaz, K. (2002). Imported machinery for export competitiveness. *The World Bank Economic Review, 16*(1), 23-48. doi:10.1093/wber/16.1.23

Morrell, P. S. (2011). *Moving boxes by air: The economics of international air cargo.* Ashgate.

Morrissey, O., & Udomkerdmongkol, M. (2012). Governance, private investment and foreign direct investment in developing countries. *World Development, 40*(3), 437-445. doi:10.1016/j.worlddev.2011.07.004

Muriithi, B. W., Affognon, H. D., Diiro, G. M., Kingori, S. W., Tanga, C. M., Nderitu, P. W., ... & Ekesi, S. (2016). Impact assessment of Integrated Pest Management (IPM) strategy for suppression of mango-infesting fruit flies in Kenya. *Crop Protection, 81*, 20-29.

Murray-Prior, R., Batt, P., Hualda, L., Concepcion, S., & Rola-Rubzen, M. F. (2014). Increasing the Economic Role for Smallholder Farmers in the World Market for Horticultural

Food. In *Horticulture: Plants for People and Places, Volume 3* (pp. 1139-1169). Springer Netherlands.

Narrod, C., Roy, D., Okello, J., Avendaño, B., Rich, K., & Thorat, A. (2009). Public–private partnerships and collective action in high value fruit and vegetable supply chains. *Food Policy, 34*(1), 8-15. doi:10.1016/j.foodpol.2008.10.005

National Bureau of Statistics, NBS. (2016a, Feb). *The Nigerian Economy; Past, Present and Future.* Retrieved from http://www.nigerianstat.gov.ng/report/357

National Bureau of Statistics, NBS. (2016b, August). *Nigerian Gross Domestic Product Report Q2 2016*. Retrieved from http://www.nigerianstat.gov.ng/report/434

National Bureau of Statistics, NBS. (2016c, Nov). *Nigerian Gross Domestic Product Report: Quarter Three 2016*. Retrieved from http://www.nigerianstat.gov.ng/report/469

National Bureau of Statistics, NBS. (2017) *Nigeria Data Portal: Nigeria Data At-a-Glance*. Retrieved from http://nigeria.opendataforafrica.org/

Naziri, D., Aubert, M., Codron, J., Loc, N. T. T., & Moustier, P. (2014). Estimating the impact of small-scale farmer collective action on food safety: The case of vegetables in Vietnam. *The Journal of Development Studies, 50*(5), 715-730. doi:10.1080/00220388.2013.874555

Nelson, R. R., & Phelps, E. S. (1966). Investment in humans, technological diffusion, and economic growth. *The American Economic Review, 56*(1/2), 69-75.

Neuman, W. L. (2000). *Social research methods: Qualitative and quantitative approaches* (4th ed.). Boston [Mass.]; London: Allyn and Bacon.

Newbery, D. M., & Stiglitz, J. E. (1984). Pareto inferior trade. *The Review of Economic Studies, 51*(1), 1-12.

Odularu, G. O. (2008). Crude oil and the Nigerian economic performance. *Oil and Gas business*, 1-29 Retrieved from http://www.ogbus.ru/eng/authors/Odularo/Odularo_1.pdf

Office for National Statistics, ONS. (2015). *2011 Census Analysis: Ethnicity and Religion of the Non-UK Born Population in England and Wales*. Retrieved from http://webarchive.nationalarchives.gov.uk/20160105160709/http://www.ons.gov.uk/ons/dcp171776_407038.pdf

Olabiyi, T. I., Okusanya, A. O., & Harris, P. J. C. (2008). Accessing the World Market for Organic Food and Beverages from Nigeria. In: 16th IFOAM Organic World Congress, Modena, Italy. *International Society of Organic Agricultural Research (ISOFAR).*

Omotor, D. G. (2008). The role of exports in the economic growth of Nigeria: the bounds test analysis. *International Journal of Economic Perspectives, 2*(4), 222.

Omri, A., & Kahouli, B. (2014). Causal relationships between energy consumption, foreign direct investment and economic growth: Fresh evidence from dynamic simultaneous-equations models. *Energy Policy, 67*, 913-922.

Onusi, A. (2016a, May). *Nigeria to Partner with Spain to Develop the Nation's Agric. Sector.* Retrieved from http://fmard.gov.ng/nigeria-to-partner-with-spain-to-develop-the-nations-agric-sector/

Onusi, A. (2016b, July). *Nigeria-China Agricultural Mechanization Implementation Committees Inaugurated.* Retrieved from http://fmard.gov.ng/nigeria-china-agricultural-mechanization-implementation-committees-inaugurated/

Onwuegbuzie, A. J., & Collins, K. M. (2007). A typology of mixed methods sampling designs in social science research. *The qualitative report, 12*(2), 281-316.

Orton, C. W. (2000). Changes in shipping perishables. *World*, *13*(9), 56-58.

Ouma, S., & Whitfield, L. (2012). The making and remaking of agro-industries in Africa. *Journal of Development Studies*, *48*(3), 301-307.

Ouma, S., Boeckler, M., & Lindner, P. (2013). Extending the margins of marketization: Frontier regions and the making of agro-export markets in northern Ghana. *Geoforum, 48*, 225-235.

Oxford Living Dictionaries (2016) *Definition of infrastructure in English.* Oxford: Oxford University Press. Retrieved from http://www.oxforddictionaries.com/definition/english/infrastructure

Oya, C. (2012). Contract Farming in sub-Saharan Africa: A Survey of Approaches, Debates and Issues. *Journal of Agrarian Change, 12*(1), 1-33.

Paalhaar, J., & Jansen, K. (2011). *Group culture and smallholder participation in value chains: French beans in Kenya*. (pp. 97-110). Wallingford, UK: CABI. doi:10.1079/9781845936495.0097

Panozzo, G., & Cortella, G. (2008). Standards for transport of perishable goods are still adequate? Connections between standards and technologies in perishable foodstuffs transport. *Trends in food science & technology*, *19*(8), 432-440. doi:10.1016/j.tifs.2008.03.007

Paull, R. (1999). Effect of temperature and relative humidity on fresh commodity quality. *Postharvest Biology and Technology, 15*(3), 263-277. doi:10.1016/S0925-5214(98)00090-8

Polkinghorne, D. E. (1989). Phenomenological research methods. In *Existential-phenomenological perspectives in psychology* (pp. 41-60). Springer US.

Porter, M. (2003). The economic performance of regions. *Regional Studies, 37*(6-7), 545-546. doi:10.1080/0034340032000108688

Portugal-Perez, A., & Wilson, J. S. (2009). Why trade facilitation matters to Africa. *World Trade Review, 8*(03), 379-416. doi:10.1017/S147474560900439X

Prisco, J. (2016, May 25). *'Tomato crisis' spreads panic in Nigeria.* CNN. Retrieved from http://edition.cnn.com/2016/05/25/africa/nigerian-tomato-crisis/

Pritchett, L. (2000). Understanding patterns of economic growth: Searching for hills among plateaus, mountains, and plains. *The World Bank Economic Review*, *14*(2), 221-250.

Pritchett, L. (2001). Where has all the education gone? *The World Bank Economic Review, 15*(3), 367-391. doi:10.1093/wber/15.3.367

Punch, K. F. (2014). *Introduction to social research: Quantitative and qualitative approaches* (Third ed.). Los Angeles, California: SAGE.

Qadri, F. S., & Waheed, A. (2013). Human capital and economic growth: Cross-country evidence from low-, middle- and high-income countries. *Progress in Development Studies, 13*(2), 89-104. doi:10.1177/1464993412466503

Rabach, E., & Kim, E. M. (1994). Where is the chain in commodity chains? The service sector nexus. *Contributions in economics and economic history*, 123-123.

Raddatz, C. (2007). Are external shocks responsible for the instability of output in low-income countries? *Journal of Development Economics, 84*(1), 155-187. doi:10.1016/j.jdeveco.2006.11.001

Rahman, M. M., & Salahuddin, M. (2010). The determinants of economic growth in Pakistan: Does stock market development play a major role? *Economic Issues*, 15(2), 69-86.

Rajkumar, P. (2010). Food mileage: An indicator of evolution of agricultural outsourcing. *Journal of Technology Management & Innovation, 5*(2), 37-46. doi:10.4067/S0718-27242010000200004

Ram, R. (1985). Exports and economic growth: Some additional evidence. *Economic Development and Cultural Change, 33*(2), 415-425. doi:10.1086/451468

Ram, R. (1987). Exports and economic growth in developing countries: Evidence from time-series and cross-section data. *Economic Development and Cultural Change, 36*(1), 51-72.

Ranis, G., Stewart, F., & Ramirez, A. (2000). Economic growth and human development. *World development, 28*(2), 197-219.

Rapetti, M., Skott, P., & Razmi, A. (2012). The real exchange rate and economic growth: are developing countries different? *International Review of Applied Economics, 26*(6), 735-753.

Reardon, T., & Flores, L. (2006). Viewpoint: "Customized competitiveness" strategies for horticultural exporters – Central America focus with lessons from and for other regions. *Food Policy, 31*(6), 483-503. doi:10.1016/j.foodpol.2006.05.001

Rediers, H., Claes, M., Peeters, L., & Willems, K. A. (2009). Evaluation of the cold chain of fresh-cut endive from farmer to plate. *Postharvest Biology and Technology, 51*(2), 257-262. doi:10.1016/j.postharvbio.2008.07.017

Reyes, S., & Jiménez, S. (2012). Export composition and economic growth in the Andean Community of Nations. *Lecturas de Economía,* (77), 53-90.

Riker, D. (2010). Do Jobs In Export Industries Still Pay More? And Why? *Manufacturing and Services Economics Brief,* (2). Retrieved from http://trade.gov/mas/ian/build/groups/public/@tg_ian/documents/webcontent/tg_ian_003208.pdf

Riker, D., & Thurner, B. (2011). Weekly Earnings in Export-Intensive US Services Industries. *Manufacturing and Services Economics Brief*, (4). Retrieved from http://www.trade.gov/mas/ian/build/groups/public/@tg_ian/documents/webcontent/tg_ian_003217.pdf

Rivera-Batiz, L. A., & Romer, P. M. (1991). International trade with endogenous technological change. *European economic review*, *35*(4), 971-1001.

Roa, M. J., Vazquez, F. J., & Saura, D. (2008). Unemployment and economic growth cycles. *Studies in Nonlinear Dynamics & Econometrics*, 12(2), 6-19. doi:10.2202/1558-3708.1559

Rodrik, D. (2008). The real exchange rate and economic growth. *Brookings papers on economic activity*, *2008*(2), 365-412.

Rogers, R. T., & Sexton, R. J. (1994). Assessing the importance of oligopsony power in agricultural markets. *American Journal of Agricultural Economics*, *76*(5), 1143-1150.

Romer, P. M. (1990). Endogenous technological change. *Journal of Political Economy*, *98*(5), S71-S102. doi:10.1086/261725

Ross, D. F. (2013). *Competing through supply chain management: creating market-winning strategies through supply chain partnerships*. Springer Science & Business Media.

Roy, D., & Thorat, A. (2008). Success in high value horticultural export markets for the small farmers: The case of Mahagrapes in India. *World Development*, *36*(10), 1874-1890. doi:10.1016/j.worlddev.2007.09.009

Ruiz García, L. (2008). *Development of monitoring applications for refrigerated perishable goods transportation* (Doctoral dissertation, Agronomos).

Sachs, J. D., & Warner, A. M. (1997). Sources of slow growth in African economies. *Journal of African economies*, *6*(3), 335-376.

Sachs, J. D., Warner, A., Åslund, A., & Fischer, S. (1995). Economic reform and the process of global integration. *Brookings papers on economic activity*, 1-118.

Sala-I-Martin, X. X. (1997). I just ran two million regressions. *The American Economic Review*, *87*(2), 178-183.

Sales, M. (2013). *The air logistics handbook: Air freight and the global supply chain*. London: Routledge. doi:10.4324/9780203080078.

Samen, S. (2010). *A Primer on Export Diversification: Key Concepts, Theoretical Underpinnings and Empirical Evidence*, Growth and Crisis Unit Publications of the World Bank, 2-9. Retrieved from https://blogs.worldbank.org/growth/files/growth/EXPORT_DIVERSIFICATION_A_PRIMER_May2010(1).pdf

Santeramo, F. G., & Cioffi, A. (2012). The entry price threshold in EU agriculture: Deterrent or barrier? *Journal of Policy Modeling*, *34*(5), 691-704. doi:10.1016/j.jpolmod.2012.02.001

Sarkar, D. (2007). The role of human capital in economic growth revisited. *Applied Economics Letters, 14*(6), 419-423. doi:10.1080/13504850500447323

Saunders, M., Lewis, P., & Thornhill, A. (2012). *Research methods for business students* (6th ed.). Harlow: Pearson.

Saunders, M., Lewis, P., & Thornhill, A. (2016). *Research methods for business students* (Seventh ed.). Harlow: Pearson Education.

Saunders, M., Lewis, P., and Thornhill, A. (2009) *Research methods for business students.* 5th ed. Harlow: Financial Times Prentice Hall.

Scott, W. R. (2004). Institutional theory. *Encyclopedia of social theory, 11*, 408-14.

Shepherd, B., & Shingal, P. A. (2016). *Value of Air Cargo: Air Transport and Global Value Chains.* Retrieved from http://www.iata.org/publications/economic-briefings/value-of-air-cargo-2016-report.pdf

Shewfelt, R. L. (1999). What is quality?. *Postharvest Biology and Technology*, 15(3), 197-200. doi:10.1016/S0925-5214(98)00084-2

Shiferaw, B., Hellin, J., & Muricho, G. (2011). Improving market access and agricultural productivity growth in Africa: What role for producer organizations and collective action institutions? *Food Security,* 3(4), 475-489. doi:10.1007/s12571-011-0153-0

Shukla, M., & Jharkharia, S. (2013). Agri-fresh produce supply chain management: a state-of-the-art literature review. *International Journal of Operations & Production Management, 33*(2), 114-158. doi:10.1108/01443571311295608

Sloman, J. and Wride, A. (2009). *Economics*. (7th ed.). Harlow: Financial Times Prentice Hall.

Smith, J. N. (2005). Specialised logistics for a longer perishable supply chain. *World Trade*, *18*(11), 46.

Solow, R. M. (1956). A contribution to the theory of economic growth. *The Quarterly Journal of Economics*, 65-94.

Sotunde, O. (2013, May 28) DHL boss sees potential in Nigeria's agricultural exports. *VENTURES AFRICA.* Retrieved from http://venturesafrica.com/dhl-boss-sees-potential-in-nigerias-agricultural-exports/

Spencer, J. W. (2008). The impact of multinational enterprise strategy on indigenous enterprises: Horizontal spillovers and crowding out in developing countries. *Academy of Management Review*, *33*(2), 341-361. doi:10.5465/AMR.2008.31193230

Staatz, J. M., & Dembele, N. N. (2008). *Agriculture for development in sub-Saharan Africa*. World Bank.

Sulaiman, M., & Saad, N. M. (2009). An Analysis of Export Performance and Economic Growth of Malaysia Using Co-Integraton and Error Correction Models. *The Journal of Developing Areas*, *43*(1), 217-231. doi:10.1353/jda.0.0031

Suri, T., Boozer, M. A., Ranis, G., & Stewart, F. (2011). Paths to success: The relationship between human development and economic growth. *World Development*, 39(4), 506-522. doi:10.1016/j.worlddev.2010.08.020

Tallontire, A., Opondo, M., Nelson, V., & Martin, A. (2011). Beyond the vertical? Using value chains and governance as a framework to analyse private standards initiatives in agri-food chains. *Agriculture and Human Values, 28*(3), 427-441. doi:10.1007/s10460-009-9237-2

Teddlie, C., & Yu, F. (2007). Mixed methods sampling a typology with examples. *Journal of mixed methods research, 1*(1), 77-100. doi:10.1177/2345678906292430

Terry, L. (2014). Perishable logistics: cold chain on a plane: careful planning for perishable air cargo helps shippers keep their cool. *Inbound Logistics, 34*(1).

The Economist. (2016a, Sept). *Nigeria: Economy slips into recession.* Retrieved from http://country.eiu.com/article.aspx?articleid=54571789&Country=Nigeria&topic=Economy&subtopic=Forecast&subsubtopic=Economic+growth&u=1&pid=1734593957&oid=1734593957&uid=1

The Economist. (2016b). *Nigeria Summit 2017: Paving the way.* Retrieved from http://www.economist.com/sites/default/files/nigeria_summit_2017_draft_agenda_ext.pdf

The Economist. (2017). *Nigeria.* Retrieved from http://country.eiu.com/nigeria

The Environmental Association of Universities and Colleges, Eauc (2014) *Vegetables.* Retrieved from www.eauc.org.uk/file_uploads/vegetables_02.pdf

The Migration Observatory (2017, Feb). *Migrants in the UK: An Overview.* Retrieved from http://www.migrationobservatory.ox.ac.uk/resources/briefings/migrants-in-the-uk-an-overview/

The Organisation for Economic Co-operation and Development, OECD. (2013a). *Perspectives on Global Development 2013: Industrial Policies in a Changing World.* OECD Publishing, Paris. Retrieved from http://dx.doi.org/10.1787/persp_glob_dev-2013-en

The Organisation for Economic Co-operation and Development, OECD. (2013b). *Foreign Direct Investment.* Retrieved from http://www.oecd-ilibrary.org/economics/oecd-factbook-2013_factbook-2013-en

The Organisation of the Petroleum Exporting Countries, OPEC. (2017a). *Member Countries.* Retrieved from http://www.opec.org/opec_web/en/about_us/25.htm

The Organization of the Petroleum Exporting Countries, OPEC. (2016). *OPEC Annual Statistical Bulletin 2016.* Retrieved from http://www.opec.org/opec_web/static_files_project/media/downloads/publications/ASB2016.pdf

The Organization of the Petroleum Exporting Countries, OPEC. (2017b). *Our Mission.* Retrieved from http://www.opec.org/opec_web/en/about_us/23.htm

The United Nations Conference on Trade and Development, UNCTAD. (2012) *Non-tariff measures to trade: Economic and policy issues for developing countries: Developing countries*

in international trade studies. Retrieved from unctad.org/en/PublicationsLibrary/ditctab20121_en.pdf

Thoburn, J.T. (2000). Developing African exports: the case of Nigeria. In: H. Jalilian, M. Tribe & J. Weiss (Eds.), *Industrial Development and Policy in Africa: Issues of De-industrialisation and Development Strategy*. Edward Elgar, Cheltenham, UK.

Thomas, G. (2012). (Ed.).*Growing greener cities in Africa: first status report on urban and peri-urban horticulture in Africa*. Food and Agriculture Organization of the United Nations (FAO). Retrieved from http://www.fao.org/docrep/016/i3002e/i3002e.pdf

Todaro, M. P. & Smith, S. C. (2015). *Economic development* (Twelfth ed.). Harlow: Pearson Education.

Torayeh, N. M. (2013). The competitiveness of the Egyptian agricultural Export in the EU market; should Egypt diversify its trade pattern? *Applied Econometrics and International Development, 13*(2), 129-148.

Trienekens, J. H., Wognum, P. M., Beulens, A. J. M., & Vorst, v. d., J.G.A.J. (2012). Transparency in complex dynamic food supply chains. *Advanced Engineering Informatics, 26*(1), 55-65. doi:10.1016/j.aei.2011.07.007

Trienekens, J., & Zuurbier, P. (2008). Quality and safety standards in the food industry, developments and challenges. *International Journal of Production Economics*, 113(1), 107-122. doi:10.1016/j.ijpe.2007.02.050

Turnovsky, S. J., & Chattopadhyay, P. (2003). Volatility and growth in developing economies: Some numerical results and empirical evidence. *Journal of International Economics, 59*(2), 267-295. doi:10.1016/S0022-1996(02)00016-8

Tyler, W. G. (1981). Growth and export expansion in developing countries: Some empirical evidence. *Journal of development Economics, 9*(1), 121-130.

U.S. Department of Commerce. (2014). *The Role of Exports in the United States Economy: An economic report.* Retrieved from http://trade.gov/neinext/role-of-exports-in-us-economy.pdf
Udude Celina, C., & Enyim, O. B. (2012). Exports and Nigerians Economic Growth: A co-integration analysis. *Asian Economic and Financial Review, 2*(2), 429-444.

Ugonna, C. U., Jolaoso, M. A., & Onwualu, A. P. (2015). Tomato value chain in Nigeria: Issues, challenges and strategies. *J. Sci. Res. Rep, 7*(7), 501-515.

Ukpolo, V. (1994). Export composition and growth of selected low-income African countries: Evidence from time-series data. *Applied Economics*, 26(5), 445-449. doi:10.1080/00036849400000012

UNCTAD (2016) *Mango: An Infocomm Commodity Profile.* Retrieved from http://unctad.org/en/PublicationsLibrary/INFOCOMM_cp07_Mango_en.pdf

United Nations Development Programme, UNDP. (2015). *Human Development Data (1980-2015).* Retrieved from http://hdr.undp.org/en/data

United States Agency for International Development – Agriculture, Fisheries and Food Authority, USAID-AFFA. (2014). *Horticulture Validated report 2014.* Retrieved from http://www.agricultureauthority.go.ke/wp-content/uploads/2016/05/Horticulture-Validated-Report-2014-Final-copy.pdf.

United States Agency for International Development – Kenya Horticulture Competitiveness project, USAID-KHCP. *(2013) Kenya horticulture competitiveness project annual report #3, 2012-2013* Retrieved from http://pdf.usaid.gov/pdf_docs/PA00KC7S.pdf

Unnevehr, L. J. (2000). Food safety issues and fresh food product exports from LDCs. *Agricultural Economics, 23*(3), 231-240. doi:10.1016/S0169-5150(00)00095-5

Unnevehr, L., & Ronchi, L. (2014). Food safety and developing markets: Research findings and research gaps (No. 1376). *International Food Policy Research Institute (IFPRI)*. Retrieved from http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/128359

USDA Foreign Agricultural Service (2013) *Egypt: Citrus Annual Report 2013/2014* Retrieved from http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Citrus%20Annual_Cairo_Egypt_12-12-2013.pdf

Van Biesebroeck, J. (2005). Exporting raises productivity in sub-Saharan African manufacturing firms. *Journal of International Economics*, 67(2), 373-391. doi:10.1016/j.jinteco.2004.12.002

van Donselaar, K., van Woensel, T., Broekmeulen, R. A. C. M., & Fransoo, J. (2006). Inventory control of perishables in supermarkets. *International Journal of Production Economics*, 104(2), 462-472. doi:10.1016/j.ijpe.2004.10.019

Vega, H. (2008). Air cargo, trade and transportation costs of perishables and exotics from South America. *Journal of Air Transport Management*, *14*(6), 324-328.

Vinod, H. D., & Kaushik, S. K. (2007). Human capital and economic growth: Evidence from developing countries. *The American Economist*, 51(1), 29-39.

Viviers, W., & Van Eldik, S. (2005). The measurement of export readiness of companies in south Africa : Research article. *Southern African Business Review*, 9(2), 1-11.

Walkenhorst, P. (2007). *Distortions to Agricultural Incentives in Nigeria*. World Bank, Washington, D.C.: *Munich Personal RePEc Archive.* Retrieved from https://mpra.ub.uni-muenchen.de/10055/2/MPRA_paper_10055.pdf

Wang, J. Y. (1990). Growth, technology transfer, and the long-run theory of international capital movements. *Journal of International Economics*, *29*(3), 255-271.

Wang, M., Fang, C., & Huang, L. (2012). The coexistence of high unemployment and good economic performance in large open developing countries. *Review of International Economics*, 20(4), 767-780. doi:10.1111/j.1467-9396.2012.01053.x.

Warren, C.A.B. (2002). 'Qualitative Interviewing'. In J.F. Gubrium and J.A. Holstein (eds), Handbook of Interview Research: Context and Method. Thousand Oaks, CA: Sage.

Weinstein, D. E. (2011). Product Variety and the Gains from International Trade. *Journal of Economic Literature, 49*(3), 743-746.

Whalley, J., & Zhao, X. (2013). The contribution of human capital to china's economic growth. *China Economic Policy Review,* 2(1) doi:10.1142/S1793969013500015

Wijnands, J. (2005). *Sustainable international networks in the flower industry: bridging empirical findings and theoretical approaches.* International Society for Horticultural Science (ISHS).

Wilson, N. (1996). The supply chains of perishable products in northern Europe. *British Food Journal*, 98(6), 9-15. doi:10.1108/00070709610131320

Winters, L. A., & Masters, A. (2013). openness and growth: Still an open question? *Journal of International Development, 25*(8), 1061-1070. doi:10.1002/jid.2973

Wong, H. T. (2010). Terms of trade and economic growth in japan and korea: An empirical analysis. *Empirical Economics*, 38(1), 139-158. doi:10.1007/s00181-009-0259-9
World Bank (2016i) *Economy & Growth.* Retrieved from http://data.worldbank.org/topic/economy-and-growth

World Bank. (2013a). *Kenya Economic Update: Time to shift gears.* Retrieved from http://www.worldbank.org/content/dam/Worldbank/document/Africa/Kenya/kenya-economic-update-june-2013.pdf

World Bank. (2013b). *World Bank Finances Senegal's Agribusiness Plans to Boost its Food Production and Jobs; Will Also Help the Wider Sahel Region.* Retrieved from http://www.worldbank.org/en/news/press-release/2013/12/19/world-bank-senegal-agribusiness-sahel

World Bank. (2013c). *Fighting Drought, Building Resilience in the Sahel one Community at a Time.* Retrieved from http://www.worldbank.org/en/news/feature/2013/12/05/fighting-drought-building-resilience-in-the-sahel-one-community-at-a-time

World Bank. (2015a). *Nigeria: Fuel exports (% of merchandise exports).* Retrieved from http://data.worldbank.org/indicator/TX.VAL.FUEL.ZS.UN?locations=NG&start=2013

World Bank. (2015b). *Kenya: Devolution and Infrastructure Boost Growth and Shared Prosperity. Retrieved from* http://www.worldbank.org/en/news/press-release/2015/02/04/kenya-devolution-and-infrastructure-boost-growth-and-shared-prosperity

World Bank. (2016). *GDP per capita (current US$)* Retrieved from http://data.worldbank.org/indicator/NY.GDP.PCAP.CD

World Bank. (2016a). *Global Economic Prospects: Divergences and Risks* Retrieved from http://www.worldbank.org/en/publication/global-economic-prospects#data

World Bank. (2016b). *Foreign direct investment, net inflows (% of GDP).* Retrieved from http://data.worldbank.org/indicator/BX.KLT.DINV.WD.GD.ZS

World Bank. (2016c). *Unemployment, total (% of total labor force) (modeled ILO estimate)* Retrieved from http://data.worldbank.org/indicator/SL.UEM.TOTL.ZS?locations=NG&view=chart

World Bank. (2016d). *Net barter terms of trade index (2000 = 100)* Retrieved from http://data.worldbank.org/indicator/TT.PRI.MRCH.XD.WD?locations

World Bank. (2016e). *Egypt: country at a glance.* Retrieved from http://www.worldbank.org/en/country/egypt

World Bank. (2016f). *Kenya: country at a glance.* Retrieved from http://www.worldbank.org/en/country/kenya

World Bank. (2016g). *Nigeria*: *country at a glance.* Retrieved from http://www.worldbank.org/en/country/nigeria

World Bank. (2016h). *Nigeria: Agriculture, value added (% of GDP).* http://data.worldbank.org/indicator/NV.AGR.TOTL.ZS?locations=IN-NG

World Bank. (2017). *Nigeria: GDP growth (annual %)* Retrieved from http://databank.worldbank.org/data/reports.aspx?source=2&series=NY.GDP.MKTP.KD.ZG&country=NGA#

World Bank; CIAT. (2015). *Climate-Smart Agriculture in Kenya. CSA Country Profiles for Africa, Asia, and Latin America and the Caribbean Series.* Washington D.C.: The World Bank Group. Retrieved from http://sdwebx.worldbank.org/climateportal/doc/agricultureProfiles/CSA%20KENYA%20NOV%2018%202015.pdf

World Health Organisation, WHO. (2003). *Diet, nutrition and the prevention of chronic diseases: Report of a joint WHO/FAO expert consultation. WHO Technical Report Series, 916. Geneva, Switzerland.* Retrieved from http://www.fao.org/3/a-ac911e.pdf

World Trade Organisation, WTO. (2015) *Tariffs.* Retrieved from http://www.wto.org/english/tratop_e/tariffs_e/tariffs_e.htm

World Trade Organisation, WTO. (2017). *Sanitary and phytosanitary measures*. Retrieved from www.wto.org/sps

Yavari, K., & Mohseni, R. (2012). Trade liberalization and economic growth: A case study of Iran. *Journal of Economic Policy Reform, 15*(1), 13. doi:10.1080/17487870.2011.642579

Yin, R. K. (2003). *Case study research: Design and methods* (3rd ed.). Thousand Oaks, Calif; London: Sage Publications

Yin, R. K. (2009). *Case study research: Design and methods* (4th ed.). London: SAGE.

Yin, R. K. (2014). *Case study research: Design and methods* (5th ed.). Los Angeles, California: Sage.

Yohanna, P. (2013). Macroeconomic determinants of foreign direct investment and economic transformation in Nigeria, 1981–2010: An empirical evidence. *Insight on Africa*, *5*(1), 55-82.

Yu, M., & Nagurney, A. (2013). Competitive food supply chain networks with application to fresh produce. *European Journal of Operational Research*, 224(2), 273-282.

Yuan, X. M., Low, J. M., & Tang, L. C. (2010). Roles of the airport and logistics services on the economic outcomes of an air cargo supply chain. *International journal of production economics*, 127(2), 215-225.