

Innovation and performance improvement among exporters in the Uganda floriculture industry

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This paper analyzes the relevance of innovation in customer value creation and financial performance improvement among flower exporters in Uganda. It presents results from a mixed-methodological study carried out using in-depth interviews of technical managers from the exporting firms and experts from the industry, observation and a review of documentary sources to ensure depth, reliability, validity and consistency. The research employed semi-structured interviews followed by content analysis and modeling of financial returns to innovation. Evidence points to the mixed impact of innovation on financial performance. This contributes valuable insights into the debate on the distribution of economic benefits to the different actors along the commodity export value chains and in particular, it adds to the limited body of knowledge on the impact of innovation on financial performance among agri-business export firms in poor countries. In addition, the findings offer a set of important lessons for the managers of companies engaged in agricultural commodity exports whose aim is to improve financial returns to their innovation efforts and policy makers seeking to formulate and implement policies that provide economic incentives to stimulate investments in innovations and the development of export agriculture.

INTRODUCTION

Although there has been a significant increase in the number of research studies exploring the relationship between firm-level innovation and export performance in developing countries Mytelka (2000), the focus has been on manufacturing firms in the relatively superior performers such as the “European LDCs”, most notably Greece, Turkey and Cyprus, and the Newly Industrializing Asian Tigers or the dragons. The average and below average economic performers, particularly the sub-Saharan African (SSA) countries whose exporters rely mainly on agricultural commodities have received little systematic attention from firm innovation and export behavior researchers (Ibeh, 2003).

Previous innovation and export behavior studies in SSA though useful have tended to take a macro or sector wide perspective with the main focus on institutional factors associated with national innovation systems and their impact on aggregate export growth and development (World Bank, 2004). The few exceptions are studies on innovation and upgrading behavior of Ugandan fish exporters Kiggundu (2004), Kenyan vegetable and flower exporters Dolan, Humphrey and Pascal-Harris (2000), South African wine exporters (Wood and Kaplan, 2005). Although these studies identify the characteristics of the innovation patterns adopted by the exporters, they are largely descriptive with a focus on the innovation systems perspective and the linkages with the global commodity value chains. No studies have so far analyzed the firm-level profit impact of innovation in global commodity value chains in SSA. Knowledge of the relationship between innovation and profitability is important because it provides essential insights into the sustainability of innovation activities among these firms, the distribution of economic benefits to the actors within these value chains, and the survival of firms in these commodity export sectors.

The Ugandan study reported in this paper, therefore seeks to add to the limited evidence available on the innovation behavior and export performance of agribusiness firms in poor SSA countries. It analyzes the role of innovation in enabling exporters to access competitive high income international markets, and the extent to which they can exploit the opportunities offered by these markets to successfully grow their

business operations and improve financial performance. The rest of this paper is structured into four parts starting with a brief outline of the literature on firm innovation and export performance, followed by a brief account of the methodology used in the study, the presentation of results and discussion, and finally, the conclusions and implications.

FIRM INNOVATION AND EXPORT PERFORMANCE

Although firm innovation is considered to be central to the determination of competitiveness Porter (1985), more so for firms operating in international arenas where competition is much stronger and more diverse than in the localized markets Dickson and Hadjimanolis (1998), it still has no universally acceptable definition. Earlier attempts at defining innovation distinguished between product innovation and process innovation (Utterback, 1994). Product innovation refers to the development and introduction of new or improved products and/or services that are successful in the market. Process innovation involves the adoption of new or improved methods of manufacture, distribution or delivery of service. Further distinctions have identified management (administrative) innovation Hargrave and Van de Ven (2006) and marketing innovation Kotler (1991) as separate dimensions. Management innovation involves the introduction of changes in management, work organization, and the working conditions and skills of the workforce that can result in more effective use of human and physical resources. Marketing innovation is the implementation of a new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing (OECD, 2005).

The four types of innovation are not mutually exclusive making the potential scope for its definition to vary from a narrow focus on a limited set of changes to a wide range of innovative outputs. In the narrow sense innovation involves the implementation of one or more types of innovation, for instance product and process innovations Utterback (1994) that may require radical changes and may be within a sector (Dosi, 1988). In contrast, the broader interpretation of innovation includes changes which go far beyond radical and technology-based product and process innovations North and Smallbone (2000), and hence, includes all changes that are incremental and new to an individual firm, even though other firms have already adopted such changes (Sternberg, 2000). Such changes may include new or improved products, processes, management methods and marketing techniques that may involve a single significant change, or a series of smaller incremental changes that together constitute a significant change. This broader perspective to innovation seems to be relevant to the study of firms in poor countries such as Uganda where there is lack of competence in undertaking scientific research, and where innovation tends to be dominated by the adoption of established generic technologies from the developed economies than on the development of new products or technologies from within (Oyelaran-Oyeyinka, 1997). Hence, this study adopted the broad perspective to innovation.

Irrespective of the scope of innovation undertaken or adopted by a firm, it is usually aimed at the improvement of competitiveness and the achievement of higher economic performance in terms of market share growth and financial returns Porter (1985). To this end innovation should lead to the creation of value for the customers Grant (1991) and the capturing of part of the value created (Barney, 1991). A component of innovation activities should be aimed at increasing the demand for the products or services and the willingness of the buyers to pay more. Such activities focus on introducing new, modified or improved quality products and making sure that they are delivered to the buyers in cost effective ways as and when required to meet their changing requirements (Womack et al., 1990). They may also involve moving to the higher value and higher price market segments with more superior or “value added products” (Porter, 1990). The other component of activities focus on improving the efficiency of the production and operational system in order to reduce the costs of production and doing business and by so doing increase profits (Porter, 1998).

The two components of value creating innovative activities should therefore improve the competitive advantage of the firm in order to attain superior export performance. Where a firm is not able to improve

its competitive advantage relative to competitors, it should at least reduce its competitive disadvantages to be able to sustain its position in the market (Barney, 1991). Besides the competitive advantage enhancing role of innovation, its success in improving export performance also depends on the nature of governance and power relations between the exporters and the lead firms along the value chain. Earlier studies such as Kaplinsky and Fitter (2004) and Dolan et al. (2000), have highlighted the profit reducing impact of the excessive powers exercised by the downstream retailers through downward price control.

Empirical studies partly show that remarkable improvements in the performance outcomes from innovation can be obtained by integrating technological and organizational innovation DeToni et al. (1992) and in particular there is a body of empirical evidence which shows a positive relationship between export value and R&D investments. These include studies Galende and Fuente (2002) that show a positive relationship between innovation and export performance. On the other hand there are other studies which show a weak or no relationship at all between firm innovation and export performance Kaplinsky and Fitter (2004) and Giuliani et al. (2005) particularly among commodity exporters. Although these conflicting pieces of empirical evidence may point towards differences in the conceptualization and measurements of both innovation and export performance, they also indicate that there is need for additional studies to test for the relationship between innovation and financial performance in export business operations more so in the under researched commodity export sectors in poor countries.

METHODOLOGY

This study adopted a mixed-methods cross-sectional study design. This involved using a combination of both the quantitative and qualitative research approaches in order to achieve a more balanced view of firm innovation and its impact on financial performance. This is consistent with the epistemological view that different methodological approaches not only address different aspects and dimensions of the phenomena under study, but also complement each other (Miles and Huberman, 1994). This is more so for a phenomena as diverse and complex as firm innovation.

In this respect, the study population was defined as comprising of Ugandan flower exporters with the following characteristics:

- engaged in the production and direct export of flowers to the high income markets;
- listed in the directory of the Uganda Flower Exporters Association (UFEA);
- have undertaken some innovations in the period 2001-2004.

The total number of firms which met the above pre-specified criteria was 15. Given this very small number of firms and the need to undertake an in-depth study, the decision was taken to target all the identified firms with semi-structured and properly formulated interview questions.

Data was collected through in-depth qualitative interviews, observation and the review of documents. This involved an average of two visits to each of the identified firms. Each interview was conducted in line with the conventional interview protocols and lasted on average 45-80 minutes. The key informants were identified upon first contact with the firm and the researcher in particular sought senior staff with responsibility for the innovative activities of the firm, for example, the production, quality control and export marketing managers. This generated altogether (10) production managers, (12) quality controllers, (6) marketing managers and (4) farm managers.

Additional data was drawn from experts in other institutions with strong linkages to the flower exporters. These included experts from research centres, training institutions and government/donor support agencies that were knowledgeable and familiar with the innovation activities undertaken by the flower exporters. The interviews were conducted with the help of an interview guide and where necessary the same informant was interviewed twice to further discuss certain issues in-depth and also ensure validity of the data earlier captured. In all cases a tape recorder was used to capture the proceedings of the

interviews and discussions, supplementary notes were also taken during the course of the interview together with the collection of any relevant documentary evidence. These were later transcribed, word processed according to different aspects covered in the interviews and analyzed using NVivo computer software package. The financial models were created using revenue data and cost estimates and analysis undertaken in MS Excel computer software package.

PRESENTATION OF RESULTS AND DISCUSSION

The analysis presented below is based on the findings from the qualitative interviews conducted in 15 flower farms in Uganda in the period January-May 2006, and through observations and an extensive review of different documentary sources. The results presented here focus mainly on profiling the innovations adopted by the flower exporters and on estimating the financial returns associated with such innovations.

Innovations adopted by the flower exporters in Uganda

Evidence on the innovations adopted by the flower exporters in Uganda in the period under study have been categorized into product innovation, process innovation and marketing innovation OECD (2005). Management innovation has been deliberately excluded as some of its features are covered under process and marketing innovations. The role of innovation in creating value and improving financial performance is hence discussed below.

Product Innovation and Export Performance

Ugandan flower exporters have undertaken significant product innovations in the relatively short period since the inception of the industry in 1993. Given the high cost associated with abandoning existing healthy plants and planting new ones, product innovation is not a financially trivial undertaking. This research set out to examine the financial viability of producing and exporting different varieties in Uganda. The purpose was to gain insight into the economic viability and financial sustainability of producing and exporting different flower varieties in Uganda. Financial models of profit margins were created using a combination of secondary and primary data. Separate models were created for T-Hybrid, sweetheart and intermediate rose varieties, the main varieties that have been produced for export from Uganda. The models relate to two separate points in time, namely 2001 and 2004, in order to provide estimates of the changing financial performance of Ugandan flower producers overtime. An attempt was made to incorporate all of the costs associated with producing and exporting flowers from purchase of the plant stock through to delivery of flower buds to overseas customers. Table I does not report all the individual cost items, but instead shows a summary of the different costs and estimated financial returns to producing and exporting the different flower varieties in 2001 and 2004.

The first major variety to be produced in Uganda was the T-Hybrid, introduced in 1993. At the time, it was believed that the T-Hybrid was well-suited to Ugandan growing conditions (Asea and Kaija, 2000). However, the yields which were achieved for T-hybrids were far below expectations. Estimates shown in Table I indicate that given the low yields achieved on T-Hybrid, their production ran at a loss of 11.2% in 2001. This estimate is consistent with the fact that by 2003, most if not all Ugandan cut flower producers had discontinued with the production of T-Hybrids.

Five leading flower exporters reported that by 2000, they had started to produce sweet heart rose varieties because experimental trials conducted in Nsimbe Estates (A field trial farm supported through the USAID IDEA project) had indicated that they were more suitable for the conditions in Uganda than was the case with T-Hybrid. The financial model in Table I estimates that sweet heart rose varieties generate a profit margin of 27.5%, an excellent margin by the standards of agricultural crops. The success with sweet heart rose varieties stimulated farmers to adopt other new varieties. In 2002/2003, three leading flower farmers acting on reports regarding changes in consumer variety and color preferences as well as results of other experimental trials conducted by USAID IDEA and APEP projects UFEA (2004) introduced intermediate

rose varieties. Intermediate roses fetch higher prices than sweet heart because they yield longer stems and larger bud sizes. Although intermediate rose varieties were not actually produced in Uganda in 2001, an estimate was nevertheless made for their profitability for 2001 to provide a basis for comparing them with T-Hybrid and sweet heart roses. Although Table I shows that the profitability of intermediates was (10.3%), and while it is within the positive territory, it was well below that of sweet heart roses indicated above.

In 2004 however, because of reduction in international prices for flowers against an increasing cost of production, marketing and overheads, the estimated profit margin was 12.2% for sweet heart and 2.4% for the intermediate. Though the exporters were motivated to introduce intermediate rose varieties because of the changing consumer preferences their lower yield per unit area compared to the sweet heart roses, the former are less profitable than the latter under the Ugandan conditions.

Table I: Estimates of financial returns to farming and exporting the different flower varieties in 2001 and 2004.

Particulars	Soil Based Farm to Auction Markets Chain 2001			Soil Based Farm to Auction Markets Chain 2004	
	T-Hybrid (Per Stem)	Sweet Heart (Per Stem)	Intermediate (Per Stem)	Sweet Heart (Per Stem)	Intermediate (Per Stem)
Production Costs	0.04	0.0226	0.0375	0.0262	0.0406
Freight & Marketing	0.08	0.0468	0.0609	0.0473	0.0647
Overhead Costs	0.02	0.009	0.013	0.0086	0.0117
Investments Costs	0.03	0.0159	0.0233	0.0144	0.0197
Total Costs	0.18	0.0943	0.1345	0.0966	0.1367
Revenue	0.16	0.13	0.15	0.11	0.14
Profit Before Tax	(0.02)	0.0357	0.0155	0.0134	0.0033
Profit Margin	(11.2%)	27.5%	10.3%	12.2%	2.4%

Source: Computed by author using data from interviews with flower exporters and UFEA

It can be seen, therefore, that the decisions regarding which flower varieties to produce for export were driven by a combination of considerations including producer expectations about production determinants, such as, suitability to local soil and climate, as well as export market buyer needs. However, the optimal outcome was not obtained immediately, but rather through trial and error. It can also be seen, that while careful experimentation was done on certain varieties, notably sweet heart and intermediate, there was a tendency for producers to rush into large scale production of the varieties largely because other farmers were producing them and because of changing export market needs.

The importance of continuous monitoring of changes in market preferences for particular colors and flower categories was emphasized by the flower exporters. This underlined their focus on improved flower quality as well as continuous innovations and product development. It was also revealed that the adoption of these new varieties of flower cultivars was achieved through closely working with technical consultants, plant breeders and propagators. This clearly indicates that relational competences are also vital in the management of innovation and in particular product development.

These findings seem to be consistent with results from previous studies in floriculture such as Wijnands (2005) that pointed towards continuous improvement in product offers to sustain competition in the dynamic flower export markets. To improve the earning capacity of the flower exporters, there is a suggestion for upgrading operations to prepare value added flowers in form of bouquets. Table II below gives estimates of financial returns to such an undertaking.

Table II: Estimates of financial returns to exporting value added flowers (bouquets) in 2004.

Particulars	Hydroponics Based Production Farm to Direct Retail Markets for Bouquets 2004	
	Sweet Heart Per Bouquet	Sweet Heart Per Stem
Costs/Revenue Sub-Totals		
Production Costs	0.66	0.0263
Freight & Marketing	2.81	0.1122
Overhead Costs	0.237	0.0095
Investments Costs	0.36	0.0143
Total Costs	4.06	0.1624
Revenue	5	0.2
Profit Before Tax	0.9	0.0376
Profit Margin	20%	20%

Source: Computed by author using data from interviews with flower exporters and UFEA

Value addition basically involves packaging and preparing the flowers in a form that is ready for use, for example bouquets. Value addition if carefully and skillfully done, can serve to differentiate the flowers that are targeted at the premium export market segments especially through the retail chains such as the supermarkets and specialists florists shops. By 2004, at least four flower exporters were packaging flowers ready for distribution to retail outlets. An estimate of the profitability of adding value to the flowers by preparing bouquets indicates that this labor intensive process can yield higher returns at the level of 20% profit margin for the sweet heart roses produced using hydroponics technology as indicated in Table II above. This compares favorably with the estimated return of 12.2 % of sweet heart roses produced under hydroponics and destined to auction markets for sale as individual stems. The additional value adding processes therefore generate returns estimated at 7.8 %. However, they require proper care and entail higher risks associated with difficulties in handling because of the underdeveloped infrastructure and low level of competences among the employees. This finding is consistent with results from previous studies such as the World Bank (2004) that advocated for adding value to the primary commodities to improve earnings for the exporters.

Process (Production) Innovation and Export Performance

Ugandan flower exporters have also undertaken strategic improvements in their production (process) technologies to improve export performance. Interviews with the flower exporters revealed that production and process improvements initially focused on efficiency and effectiveness in order to increase yield and decrease the production costs but later the focus was extended to developing sustainable production techniques that conform to international process standards such as the ones specified by the Milieu Project Sierteelt (MPS). In particular process improvements were undertaken by all farms in the production, harvesting, and post-harvest handling and shipment of the flowers to the export markets. Notable changes were made in production infrastructure, production technology using hydroponics, use of on-site breeding and plant propagation technologies, improved agronomic crop management practices, modern post-harvest flower handling and cool chain management technologies, as well as waste and environment risk management technologies. An important innovation has been the adoption of more sophisticated methods of flower production using artificial media or substrates instead of soil and regulated by computerized systems, the so called hydroponics technology. The switch to the use of the hydroponics technology also necessitated changing from the use of ordinary drip irrigation, to the modern greenhouse irrigation and fertigation systems controlled using computerized processes. In ten (10) out of the seventeen (15) farms under study, some existing greenhouses were being switched to hydroponics, and all new greenhouse investments appeared to include hydroponics systems in varying degrees.

Given the high costs associated with adopting new plant production and agronomic management technologies, process innovations were undertaken in phases after very careful considerations. These process innovations are technologically and financially very involving, and hence represent a very high risk venture undertaken by the flower exporters. An examination of their financial viability and the level of returns is therefore important in indicating their sustainability to the exporters. Hence, financial models of profit margins were created using both secondary and primary data for the soil based farming system as well as the hydroponics based farming system both destined for the auction markets in 2004. Although the models relate to one specific point in time, that is 2004, they provide estimates of the changing financial performance of Ugandan flower exporters in relation to changing the production technologies from soil based to more advanced hydroponics based systems. In both cases an attempt was made to incorporate all the major costs associated with producing flowers using each of the two different production technologies as well as the costs of exporting to overseas customers. This is indicated in Table III below. However, it does not report all the individual cost items, but instead shows a summary of the different costs and estimated financial returns to producing and exporting using soil based and hydroponics based production technologies in 2004.

Table III: Estimates of financial returns to the adoption of innovative flower production technologies (hydroponics) in 2004.

Particulars	Soil Based Production Farm to Auction Markets 2004		Hydroponics Based Production Farm to Auction Markets 2004	
	Sweet Heart (Per Stem)	Intermediate (Per Stem)	Sweet Heart (Per Stem)	Intermediate (Per Stem)
Production Costs	0.0262	0.0406	0.0225	0.0348
Freight & Marketing	0.0473	0.0647	0.0473	0.0647
Overhead Costs	0.0086	0.0117	0.0095	0.0122
Investments Costs	0.0144	0.0197	0.0143	0.0185
Total Costs	0.0966	0.1367	0.0937	0.1302
Revenue	0.11	0.14	0.11	0.14
Profit Before Tax	0.0134	0.0033	0.0163	0.0098
Profit Margin	12.2%	2.4%	14.8%	7.0%

Source: Computed by author using data from interviews with flower exporters and UFEA

Estimates of the economic viability of switching from soil-based production systems to computer controlled hydroponics system using cost and revenue estimates of 2004 indicate that in the case of sweet heart roses profit margins would improve from 12.2% to 14.8% and with intermediate roses from 2.4% to 7.0% as indicated above. This clearly indicates that the adoption of the hydroponics technology for flower production creates value for the flower exporters. However, it also entails high risks because of the technical nature of the operation that requires high levels of skills and careful management of the production process. Though this finding is consistent with the earlier observations by other researchers in that investment in R&D has a positive correlation with export performance DeToni et.al. (1992), the actual improvement in export performance appears to be marginal to meet the high expectations of the flower exporters. It also tends to contradict the pessimistic view held by commodity chain researchers such as Kaplinsky (2002) that commodity exporters from developing countries find it difficult to appropriate higher incomes for their exports because of the high concentration and the power wielding behavior of the retailers in the downstream commodity value chains.

Marketing Innovation and Export Performance

Ugandan flower exporters have also adopted some new and improved marketing practices to sustain competition in the export markets. They undertook improved approaches to marketing as individual

companies and also by collectively working together as members of UFEA. Empirical evidence indicates that the main improvements in marketing include; flower grading and packaging, adoption of e-marketing, supply chain and logistics management; and export market diversification by moving from auctions to the direct market.

Whereas all the flower exporters had indicated improvements in marketing practices in particular, switching from selling to the auction to selling partly to the direct market is considered to be the most important change undertaken in their export marketing operations in the period under review. This is important because direct markets are considered to be more attractive in terms of price. However, it is also more demanding in terms of competence in production and the final grading, color mixing, packaging, handling and transportation to the export markets, along with the development of good relations with the buyers.

A number of managers interviewed testified that the improvements in quality, grading, certification and accreditation resulted in increased consumer confidence in the flowers from Uganda as demonstrated by increased orders and orders sometimes beyond the capacity of the growers to supply. The flower exporters have also reported that increasingly they are getting fewer quality remarks an indication that buyers are satisfied and are more confident with their flower quality. The move to the direct markets should therefore give higher returns to the exporters. Thus, an examination of the financial viability and the level of returns associated with movement to the direct flower markets is undertaken to determine its sustainability to the exporters. Financial models of profit margins were created using both secondary and primary data for the flower sales to auctions as well as the direct markets, using hydroponics based farming systems and self-propagated cultivars in 2004. Although the two models relate to the same point in time, that is 2004, they can still provide estimates of the changing financial performance of Ugandan flower exporters in relation to changing the export market focus from auctions to the direct markets. In the two models an attempt has been made to incorporate all the major costs associated with production and selling to each of the two market destinations. This is indicated in Table IV below. The table does not report all the individual cost items, but instead shows a summary of the different costs and estimated financial returns to producing and selling to the auctions and the direct markets in 2004.

Table IV: Estimates of financial returns to switching from farm-auction chains to the farm-direct market chains in 2004

Particulars	Hydroponics Based Farm (Self-Propagated Cultivars) to Auction Markets Chain 2004		Hydroponics Based Farm (Self-Propagated Cultivars) to Direct Markets Chain 2004	
	Sweet Heart (Per Stem)	Intermediate (Per Stem)	Sweet Heart (Per Stem)	Intermediate (Per Stem)
Production Costs	0.0183	0.0183	0.0184	0.0283
Freight & Marketing	0.0473	0.0647	0.0473	0.0647
Overhead Costs	0.0095	0.0122	0.0095	0.0122
Investments Costs	0.0144	0.0185	0.0144	0.0185
Total Costs	0.0895	0.1236	0.0896	0.1236
Revenue	0.11	0.14	0.12	0.15
Profit Before Tax	0.0205	0.0164	0.0304	0.0264
Profit Margin	18.6%	11.7%	25.4%	17.6%

Source: Computed by author using data from interviews with flower exporters and UFEA.

As indicated above, marketing innovations culminated in the change from supplying exclusively to the auctions, to part supply to the direct markets. In Table IV above, an estimate of the profitability of the market switch indicates that profit margin on sweet heart roses self-propagated and produced using hydroponics technology would improve from 18.6% to 24.4% and for intermediate roses also self-

propagated and produced using hydroponics technology would improve from 11.7% to 17.6%. Thus, the switch in target market creates value for the exporters as they are able to get higher prices for the flowers. This finding supports earlier observations such as Giuliani et al. (2005) that commodity exporters can appropriate higher returns by upgrading to higher value market segments with differentiated or value added products. However, it also contradicts other earlier studies such as Kaplinsky and Fitter (2004) who express the pessimistic view that there is no significant difference in financial performance that can be attributed to a movement to supplying flowers to the direct markets.

CONCLUSIONS AND IMPLICATIONS

This study has explored the state of innovation and the relevance of its different dimensions towards value creation and appropriation among flower exporters in Uganda. Evidence points to the mixed effects of innovation on export performance improvement. In particular, product innovations show a strong difference in financial returns to farming different flower varieties with losses for T-Hybrid and profits for the sweet heart and intermediate roses in 2001. However, in 2004 profitability reduces for the sweet heart and intermediate roses owing to the price reduction and the increase in production, overhead and marketing costs. Product innovations were therefore not as successful as earlier expected by the flower exporters. Process innovation also produced very marginal returns to the investments. Marketing innovations, particularly the shift from selling in the auctions to selling to the direct markets yielded some higher returns to the investment compared to the product and process innovations. These results point towards the difficulties associated with getting innovations right in terms improvements in financial performance of the firm. The summary conclusions add to the limited body of knowledge on the role of innovation in improving export performance among agribusiness exporters in poor sub-Saharan African countries consistent with the earlier observations by (Wood and Kaplan, 2005). They also offer a set of important lessons for other exporters of high value agricultural commodities from poor countries seeking to improve their performance in competitive and demanding international commodity markets. Some of the main implications of the outlined summary findings are presented below.

First, growth-seeking agricultural commodity exporters and flower exporters in particular, would do better by carefully analyzing the innovation options before adoption as well as having a long-term and strategic perspective on innovation. Second, flower exporters aiming to grow successfully in foreign markets must give priority attention to developing appropriate advantage-generating capabilities in the critical areas of product development, production processes, and marketing practices. They should also strive towards improving the overall quality of technical skills through continuous learning so as to develop systems to facilitate the adoption and successful implementation of the new technologies. These exporters should also consider focusing on specific flower market niches, and seek to differentiate affordably based on product origin, production method, attached services, value added processing and other customer valued quality features. This competitive approach should be backed by a well planned marketing strategy.

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