



SME's of Agribusiness in UAE

Strategic sustainable development for better world.



Triple P business development and its applications among small and medium scale economies dealing in agribusiness industry in United Arab Emirates.

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Preface

Over the years the concepts of sustainability and strategic innovation had been existed in the literature but, yet its practice seems to be very limited. The courses on sustainability and supply chain management during the minor had inspired me to find a way to make the theories a reality. This research paper would not have been possible without the efforts and continuous support of my teachers in the Aeres University of Applied Science, my coach Patrick Burgess and lastly my internship company Abdullah Bin Khater Foodstuff LLC, Dubai, UAE where I worked during the placement period.

I hope this paper inspires the reader to take steps towards sustainability models and earn huge profits, thereby making the world a better place for everyone.

DK Dugar

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Summary

Pollution, food security, social welfare all are at risk at the global level. With an ever-increasing population so does the demand for food and job increases. With the increase of requirement for food, poverty on one hand the food wastages continue to increase over the years. The main reason can be tracked back to the major stake holders in the supply chain, the traders. The traders form the link between farmers and the end consumer therefore any poor operation or wrong doings directs the produce straight into the bins. When looked further it was found that out of these traders the SMEs hold the biggest share in any industry. These small and medium scales are tiny for an impact at singular level but the most impactful when assessed collectively. The organizations often tend to neglect this society due to lower buying power and lack of knowledge. The thesis to the contrary is focused towards the small and medium scale economies and hopes to bring sustainable practices in the wider section of society.

The theories for sustainable models and supply chain optimization are numerous however, the lack of clarity on how to adapt them at the micro level has often left the stakeholders to distance itself from its practise. Modelling is highly necessary for any organization as it lays out a pathway for the companies to follow. Similarly, to achieve sustainability the business needs to incorporate the sustainability principles of people, planet and profit in its business model which also leads to the development of the company. With the combination of the literary models like triple layered business model canvas and emulation strategies could help the company to reach the sustainability goals.

Thus, the main research question was **How to implement sustainable business models in agri-food business SMEs in the UAE?**

The empirical form of study along combined with multiple interviews and surveys with the stakeholders of the company has brought out the results of the main question that, the awareness for the sustainability and the profit it may bring is low among the companies. The company's framework and models do not fulfill the aspects of sustainability. The most impactful areas being the inventory were major food waste generated due to poor management and demand fluctuations. Also, the models for the companies to adapt needs to be simple and easy to process as the major challenge of unskilled labour force affects the sector. Therefore, it is conclusive that the literary models of triple layered bottom line could be uses as an assessing parameter for the company combined with the five-step business development model and emulation strategy which are easy to adapt and needs less changes to the existing method of business. Other recommendation include that the companies act towards the most affected areas and create a development model based on it.

1. Introduction

This chapter brings out the theoretical background to the topic and the current trends in the agribusiness sector in United Arab Emirates. It will also bring out the knowledge gap and the urgent need for the application of theory to the practice. At last the main question and sub questions are formed around which the further research will be focused upon.

Context, Trends and Developments

Small and Medium Scale Economies (SMEs) have major impact on the country's economies. It is said to have the key impacts on environmental, economic and social factors (Keskin et al, 2010). Approximately 65 percent of the pollution is caused by the SMEs worldwide. In United Arab Emirates (UAE) alone more than 94 percent of companies are categorized as SMEs which account for more than 68 percent of private sector employment and 60 per cent of the country's current GDP (Department of Economic Development Dubai, 2018). The market share of the SMEs is expected to grow 70 per cent by 2021 In UAE. Therefore, SMEs can be said to have formed the backbone of the economy and any certain changes among them can have lasting effects on the complete economy. However, sustainability concepts are less practised among these groups due to certain factors. An efficient system focussed towards the development of SMEs would solve all the major problems that a country faces (Department of Economic Development Dubai, 2018).

The SMEs can be further categorized based on the turnover into three categories they are micro which have turnover of about \$2.5 Million USD or less than 9 employees. Small which have turnover of about \$13.5 Million USD or less than 35 employees and Medium with turnover of less than \$65 Million USD and employees less than 75 as set by the Dubai Economic Organization. Certain initiatives have been made by the UAE government to boost the economics of the SMEs and focus on its development. However, there is a huge gap seen between the formation of the initiatives and the access of the SMEs to it (Department of Economic Development Dubai, 2018).

	Employees	Turnover
Micro	<=9	& <=AED 9mn
Small	<=35	& <=AED 50mn
Medium	<=75	& <=AED 250mn

Figure 1: Categories of company based on turnover.

Source: (Department of Economic Development, 2018)

A study by the DUBAI SME organization which is focussed towards the development of SMEs showed that over 57 per cent of the SMEs are involved in the trading sector and the rest 43 per cent accounts for manufacturing and services sector. Majority of the SMEs in trading sector are involved in the trading of food products at various levels such as retail, grocery, catering, hotel and restaurants, wholesale trading and re- export business to the other GCC countries which includes Saudi Arabia, Oman, Qatar, Kuwait and Bahrain. Dubai, UAE being one of the largest hubs of trade of agricultural products, it imports and re-exports agricultural products worldwide. Over 90 percent of the land in GCC countries is unfit for Agriculture and therefore the population needs to highly depend upon the imported food. It imports foods of value over \$ 100 Billion USD in 2014 annually expected to rise to \$400 Billion USD by 2014. Government initiative to regulate a steady food supply has been made and more and more investments are made to protect the country from food shortages it should not be neglected that controlling food wastages is equally necessary (Sameena Ahmed, 2015).

The major trading of agricultural products takes place at the AL Aweer Fruit and Vegetable market located at Ras Al Khor with 15 KM from the heart of the city, also acts as the storage and distribution centre for the consumers and retailers. Huge number of multinational companies involved in processing and packaging are also located here. The market has been divided based on the scale of

business. The area is also equipped with all the necessary authorities required for export and import goods in the area itself. Thus, making it easier and convenient for the company to manage its imports and exports with lower time expense. On the other hand, efficient systems are established in the custom authorities at the airport and sea port to enable easy and faster clearance. In general, it does not take more than 12 hours for a container from sea and 4 hours from the air cargo to be passed through the formalities of the custom authorities. Despite such fast and efficient systems by the government quantities of over 55 to 60 percent of food waste could be said to be lost in the complete supply chain process (Lemma, Kitaw, & Gatew, 2014).

The United Arab Emirates imports produce from every part of world to satisfy its multi-national community. Other reasons involve the re-export business followed by the trading companies as the government facilitates easy import and export. Therefore, controlling the waste through efficient methods at the basic level as of the farm could reduce the wastages in the complete supply chain. This would require the trading companies to be more closely integrated with its suppliers and re-structure the business model accordingly (Hearth, 2014). The need for the sustainable supply chain management, a business model built upon the fundamentals of people, planet and profit is needed to be made. A lot of research had already been done and efficient models have been invented however its practical application have not yet reached the bigger society of business which is the SMEs (Ludeke-Freund & Dembek, 2017) (Nerurkar, 2017) (Schaltegger, Hansen, & Lüdeke-Freund, 2016). This research paper tries to bring out the practice followed by the SMEs and re-defines the business model based on sustainability which could readily be accepted by the SMEs.

The research is focused towards the Small and Medium scale enterprises in relation to fruit and vegetable trading in UAE. The business models of these businesses are studied, and the complete supply chain model is drawn out. The businesses are involved mostly in trading globally and therefore have less control over the ends of supply chain. The effort of the companies and government to be more sustainable can be seen through the initiatives by the government programs and the new reforms in the sector. The primary area of concern being reduction in the food waste. Other areas of concern include providing its employees higher standard of living and reducing the environmental impacts caused due to wastages and multiple un-necessary transportation thereby increasing the profits. The companies have been highly involved in vertical integration and had set up various farms to obtain supply according to the market condition. Further tie up with the farmers have also improved the company's regular supply throughout the year.

In attempt to create a sustainable future for the company among the ever-growing market competition it needs to re-design its business model based on sustainability principles. Therefore, arising the basic concern on **How sustainability could be incorporated within existing models and what strategies does the companies need to incorporate to move towards a steady growth?**

The question of the agri-business trading sector can be addressed based on certain factors of sustainability and business models however for the sake of this thesis major emphasis is done on supply chain as it forms the back bone of the trading businesses and new strategic innovation model baseline which could be used in future to tackle and innovate on its problems. Most of the companies found in this sector in UAE are known to have similar business model among themselves and are often outdated regarding today's changing world. The models thus need an upgrade.

The target audience for the research paper include Small and Medium Scale economies in Agribusiness trading sector which are especially international oriented. To further classify the company based on turnover and employees the thesis would hold true for companies with turnover of 15 Million USD and employee over 10 people. Secondly it should be involved in the trading of raw fresh produced.

The target group are untouched from the ideals of sustainability, environmental impacts that they produce from their actions. As per survey regarding the orientation of innovation in SMEs towards sustainable economy the percentages lie as low as 13 per cent whereas the micro economies are the least involved towards research and new methodology to improve efficiency and reduce wastages (Department of Economic Development, 2018). Thus, the topic of the thesis to bring the triple p business in practice among SMEs for sustainable future highly relevant to the target group.

In the theoretical framework the concepts of triple p business are further explained, the supply chain relevance to the business is studied and different innovation which can be adopted in this sector is also studied. Thus, bringing to the knowledge gap of how it can be re modified to the target group. The knowledge gap is used to frame the main and sub question for the thesis topic.

Theoretical Framework

To address the topic the topic is broken down into different elements which correspond to the target group and then the connection to each other is made. Starting on the key topic of triple p business – people, planet and profit and then moving towards the business models and supply chain optimization to achieve zero waste.

Triple Ps – People, Planet and Profit, Pillars of Sustainability

Three Ps or also regarded as the triple bottom line is based on balance between the three most essential dimensions -economics, ecology and ethics. To understand the concept clearly the origin of the concept needs to be studied. The concept of triple bottom line was first used in 1994 by the Author John Elkington where the author argues that the companies in the future must be preparing three different bottom lines to measure success. First being the traditional method of profit, second being the people's account which measure the wellbeing of the company's employees or how socially responsible the company has been and the last being planet measuring the environmental impacts that the company creates by its actions (Zak, 2015).

Other definitions include “the creation of goods and services using processes and systems that are non-polluting, conserving energy and natural resources, economically viable, safe and healthful for employees, communities and consumers, socially and creatively rewarding for all working people.” By Krajnc and Glavič [2005]. In Andrew Savitz words the triple bottom line is also explained as the essence of sustainability which “measure the organization impact on the world including the profitability and shareholder values, and its human and environmental capital”.

The common objective of the above three definitions is that all of these addresses the goals of sustainability. Other than the economic aspects, the 3P creates the notion to add environment and social aspects as a parameter to measure the company's success. As shown in the figure the three notions combine and needs to be addressed at the same time to achieve sustainability (Dixon & Clifford, 2007).

A lot of literature study has proven the needs and benefits of the triple p and its incorporation into business models providing huge success to the company. Some of the benefits of business model built with sustainability notions include,

- increase revenue,
- reduce energy expenses,
- reduce waste expenses,
- reduce materials and water expenses,
- increase employee productivity,
- reduce hiring and attrition expenses,

- reduce strategic and operational risks (Willard, 2012).

These benefits provide the right motivation for the companies to move towards sustainability models and invest more time and financial resources towards its application. As explained by B. Willard [2012], the author of *The Sustainability Advantage: Seven Business Case Benefits of a Triple Bottom Line*.



Figure 2: Three spheres of sustainability.

Source: (Zak, 2015)

Despite the benefits of 3Ps becomes a difficult concept for the organizations to practise as it widens the firm's responsibility. The companies involved in the agribusiness are usually narrow focussed towards producing and supplying customers with the most competitive rates while sustaining profits (Cofino, 2014). And the turnover thereby deciding the company's success in the trading industry. On the other hand, the TBL requires to measure the performance in relation to stakeholders (people) with whom the company has direct and indirect relations such as the consumers, customers, suppliers, governments (Hindle, 2008).

Measuring the parameter such social and environmental are often subjective to the firm and cannot be easily quantified in numbers or be measured in terms of cash. Therefore, every firm needs to set of rules or parameters to measure the impacts. For example, the environmental impact in the agribusiness industry can be measured in terms of the produce wasted, or the miles travelled before the produce reaches the end consumer. The social aspects can be measured based upon the fair pricing provided to farmers or profit-sharing basis where both the suppliers and the traders are benefitted (Krajnc & Glavic., 2005). These rules and parameters can be further assessed using the sustainability reporting tools (STR) which comprises of various framework, standards, rating and indices derived from the international organizations to achieve sustainability. The tools provide principles and models that can be used by the organizations to evaluate their progress, test the model against the sustainability terms (Siew, 2015). The goal of this thesis is to establish a sustainable working business model for the SMEs which can be further followed by the SRTs as the second step to test the model. Therefore, the parameters of assessment for the company are not focussed in this thesis.

The implementation of the term sustainability in current times is usually practiced by the big multinationals and is often misunderstood as a tool only for the big companies. The sustainability connects the human made and the natural worlds. It is much bigger and important part for the wellbeing of the future generation and the planet. It has been proved that the TBL is not limited to the corporate and can be widely accepted by organization at various levels, business or different sector and even the society. The key to success of TBL or 3Ps is the awareness of the concept top to bottom, the changes for better would most likely take time to be implemented fully (Romaniuk, 2011).

3Ps as capital

The elements of 3Ps can also be viewed in terms of capital. Each capital determining the abundance or the shortage from the perspective of development in global to local scale (Slaper & Hall, 2011). The irregular use in the past times and current times generates more and more negative impact for the future. Therefore, the issue is to preserve the capitals to a certain level so that it could be renewed faster for the future business to come (Dixon & Clifford, 2007).

People: refers to the fair conduct of business towards employees, the community and the region it supplies. The company should keep in mind about the people's health, needs and requirements. Employees should be treated on the basics of fair and honest grounds, should be independent. Regular check is required to be done by the company on its suppliers and customers to prevent the company from being indirectly involved in any in-humane practices as that of child labour, unfair pricing. Among the agribusiness trading sector keeping a track of the works of suppliers could be difficult as the suppliers are based on different countries. This could be facilitated by dealing with the suppliers who hold the certifications or forcing the suppliers to engage and obtain such certification such as the Global Reporting Initiative (GRI) (Reinke, 2017).

Some examples include the fair pricing strategy adopted by Starbucks to support the farmers have had huge impact towards altering the lives of the suppliers and brought more loyalty towards the company. On the other hand, by the end of 2005, Walmart was accused of being indirectly involved in child labour at two factories in Bangladesh. 89 Children aged 10-14 years old were found to be working in the factories for less than \$50 a month making products of the Walmart brand for export to Canada. This finally resulted in reduced reputation of its customers on the company and it also had to change its suppliers.

Planet: The responsibility to provide the customers with the best produce lies in the hands of the traders. They need to ensure that the quality of the produce is as per the customer requirements. However, this should not come at the cost of damage to the environment. The wastage should be managed in such a way that it either is recycled or sold at lower prices. Proper forecasting could help the companies to prevent wastage occurred from over inventory and stock obsolesces. Also reducing the miles travelled could help in reducing the footprint this can be done by locally sourcing of produce or sourcing from the nearer countries and retain the use of transport which effects the environment more (Hosseini & Ramezani, 2016).

A case study by the company that showed the efforts engaged by the software company to reduce its greenhouse gas emission by 75 per cent with the use of renewable energy sources. Apart from these the company is also focussed on improving the cooling efficiency of its data centres and virtualising many of its systems and devices. Such responsible initiative not only reduce the company's impact on the environment but also promote other companies to take up such initiatives (Cofino, 2014).

To the contrary the energy companies such as Alpha Natural Resources which provide electricity to the household in United States of America was accused of \$27.5 million fine for spewing pollutants into the waterways of Kentucky, Pennsylvania and West Virginia in USA. The company's efforts to get

rid of the unwanted wastes in easiest way possible, often have the damaging effects to the environment (Pearson, 2014).

Profit: For the sake of sustainable business the company need to generate regular profits. These profits however should not be only limited to the company as in the traditional method but also be perceived as the economic benefit it does to the complete society. Therefore, the TBL shows that the company does not only works for its own profits but also cares about the community it is surrounded with, which leads to co-creation. It a balance between the social and environmental impact (Haanaes, Michael et al, 2013).

A research paper published in the Harvard Business Review shows the economic benefits that over thousand companies have gained by the application of sustainability principles in the company. One such company is Philippine's, the Manila Water Company which focused initially on water loss to leaks or illegal taps of its pipes. From 1997 to 2010, the company recovered an amount of water equal to the supply from a medium-sized dam, which would have cost an estimated \$750 million to build (Haanaes et al, 2013).

The triple P business or TBL is therefore a very old concept that has been existed in the literature for years. Certain tools to measure the socio and economic has also been formed for the companies to measure their success. It is high time for the companies at every scale to get involved in the sustainable business development to address the current problems of environmental imbalance, social inequalities, food shortages and poverty (Hosseininia & Ramezani, 2016).

For the companies to engage in triple P business could require certain reforms in the field of operation, sourcing and marketing strategy. Supply chain however forms the most essential part of the Agribusiness trading industry and can be considered as the starting point for the implementation of 3p to reduce the food wastage obtained before the food even reaches the shelves of grocery stores (Zak, 2015).

Supply Chain Optimization

Food loss along the food chain has become a major cause for food insecurity. More than 50 percent of food grown is wasted during the supply chain from field to fork worldwide. Different developed and developing nations have food loss at different stages. UAE being a developed nation 40 percent of food loss occurs at the retail and consumer level whereas only 10 percent is at pre-consumer level. This does not account for the production losses that is occurred due to grading and sorting when goods are imported. In total losses over 65 percent from farm to fork have been experienced by the companies (Abiad & Meho, 2017). The major reason being mis handing, wrong time management of produce and sometimes due the process of first-in and last-out. As it is evidently pointed out that by wasting food while millions stay hungry could lead to future food crisis. The economic aspects which affects all individuals and organization in supply chain is often neglected as the people are more net profit oriented (Hearth, 2014).

Food loss can occur at different stages throughout the food supply chain with varying causes such as poor information technology (IT) managements systems, communication gap, irregular inventory check and many others dependent on the geographical area and organization. To conquer these literatures have provided numerous strategies and opportunities to reduce the loss. Some of the techniques include consumer education, post-harvest technology, packaging advancements, partnerships to jointly reduce food waste. In addition to this several strategies such as stock management, scheduling and distribution strategies, customer specific demand supply chain optimization modelling has been proposed. However, in the agribusiness these supply chain modelling sometimes fails due to the rapid demand and supply uncertainties and therefore requires the company to have a tailor-made optimized solution for itself (Morvai, 2014).

Food supply chain (FSC) modelling and optimization must be in close co-ordination with traceability and the ability to capture the most essential elements. Mathematical Optimization is often used when the matrix and progress is measured in numbers, this type is often used in the production areas. The agri-food supply chain logistics should be carefully considered as it is highly time bound, other factors that are needed to be take care involve distribution centres, its location, capacity. Over the years of research on modelling and optimization the major loss occurs at high rate in the production, transportation and inventory activities throughout the supply chain. These three operational issues cause major food wastages and based on the reviewed paper the best models are hence described below (Morvai, 2014),

1. Production Losses:

Several methods to reduce food losses at production level have been proposed by the research scholars which include farm location, crop plantation and harvesting analysis, demand and production planning (Shukla & Kharkaria, 2013). One such modelling include operation research tools or mathematical model has been efficiently practised. These models can be added with huge number of production factors such as the plant growing process which includes the growing and flowering stage; harvest and delivery stage through plant maturity curve and loss function to express the growing process and decaying process of fresh products. Simulation techniques of climate change and logistic supply chain of fresh products with the help of mathematical models are done to optimize the system to gain maximum productivity and quality. Operational decisions are thus made with the vision of long-term profit. It is highly evident from the research that these methods focus primarily on increasing revenue objective rather than the loss reduction objective (Morvai, 2014).

2. Transportation Losses:

Transportation forms the link between all the economic activities in supply chain. The FSC needs to carefully be managed to prevent loss of quality of fresh produce as it is highly time bound. Hence, optimization of transportation in FSC is essential for preventing loss of quality and wastages. Most popular optimization tool used for transportation is linear programming which includes variety of decision regarding the scheduling, capacity, selection of location. The linear programming is simple to use and help in solving the most complex problems. Different variable can be used in the program which uses binary function to reach the optimal point. However, In the real-life scenario these optimization tools need to be more flexible to the sudden changes which often occurs.

Many scholars use different optimization tools both traditional and modern to get the best of transportation, however these models focus more on reducing the transportation time and generating more revenue rather than focusing on the elements for food loss such as handling and atmospheric requirements. According to Murthy et al., 2009, "loss or waste in transportation is one of the highest in the food supply chain management". Hence transportation planning needs to be done in mind with the time interval, distance travelled and the type of transport. In general, loss should be focussed while optimizing as the prevented loss end up generating more revenue. The objective function that needs to be applied in the transportation model would be minimizing waste even if it results in reduced profit margins. (Lemma, Kitaw, & Gatew, 2014).

3. Inventory Losses:

Several models in inventory systems usually do not take in account of the shelf life. Perishable products are sensitive to temperature conditions and time relative in which they are handled and

require special storage conditions in to preserve their freshness. Once an item lost its freshness it cannot move forward in the supply chain and therefore is converted into food waste. Different models such as Economic ordering quantity, ABC analysis, inventory turnover ratio, economic production model, quantity discount model, single period model for perishables are widely accepted by the corporates for inventory management. These have been designed based on the type of inventory which include inventory with fixed lifetime; inventory with random lifetime and inventory with decays proportionally in terms of utility and quantity. The last type of inventory fits best for the fresh produce trading sector. Little literature review is available to assess the loss reduction methods in inventory for fresh produce (Kouki, Sahin et al., 2013).

The supply chain modelling and optimization is rather complex and needs the companies have dedicated efforts made to make a model that is tailored fit for the company's problems. With regards to the above three areas of losses of prime importance it gives the companies further area of research and improvement. This thesis on the other focuses more on the step one of business modelling and gives a basic insight on the other connected areas.

To overcome the losses and to innovate the companies would require concrete models and plans that would provide guideline for the companies. The next section deals on the business models and the strategic innovation strategy that a company can use to achieve success.

Sustainable Business model by Strategic Innovation.

Triple P Business Model Canvas

Sustainability concepts exceeds the scope of business activities and the reason is that Triple P has relevance for any activity such as sourcing, the entire value chain, products till the end of life and further value creation. The current industrial revolution focuses on the concepts of sustainability and its integration with the businesses. This therefore creates the need for the companies to be more sustainable. On the other hand, these challenges can also be opportunities for companies to engage in sustainable oriented innovations. This section builds upon the model the triple layered business model canvas (TLBMC) proposed by Alexandre Joyce and Raymond Paquin which is used as a tool to design sustainable business model. The model is a practical tool to connect the dots between economic, environmental and social concerns into holistic view of the business model of the company. the TLBMC builds upon the famous business model canvas proposed by Osterwalder and Pigneur (Joyce & Paquin, 2016).

The model uses triple P approach to organizational sustainability, integrating all the three elements as core to the organization's business model. The TLBMC can be used to overcome barriers to sustainability-oriented change within organizations (Lozano, 2013) by creatively re-conceptualizing their current business models. The business model canvas (BMC) commonly used to evaluate the firm's business model consists of nine interconnected elements which include value proposition, segments, customer relationships, channels, key resources, key activities, partners, costs and revenues. These concepts have been discussed by the authors over the years and are therefore not discussed here. These models are further used to assess the company and new model are thus made. The three models are shown below

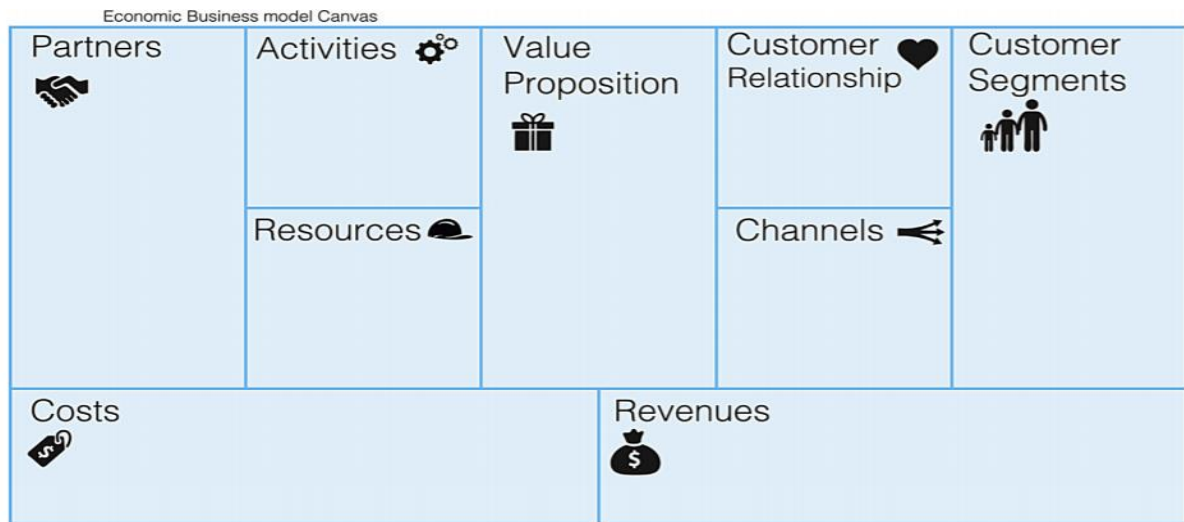


Figure 3: Business Model Canvas Economic Layer. Source: (Osterwalder, 2013)

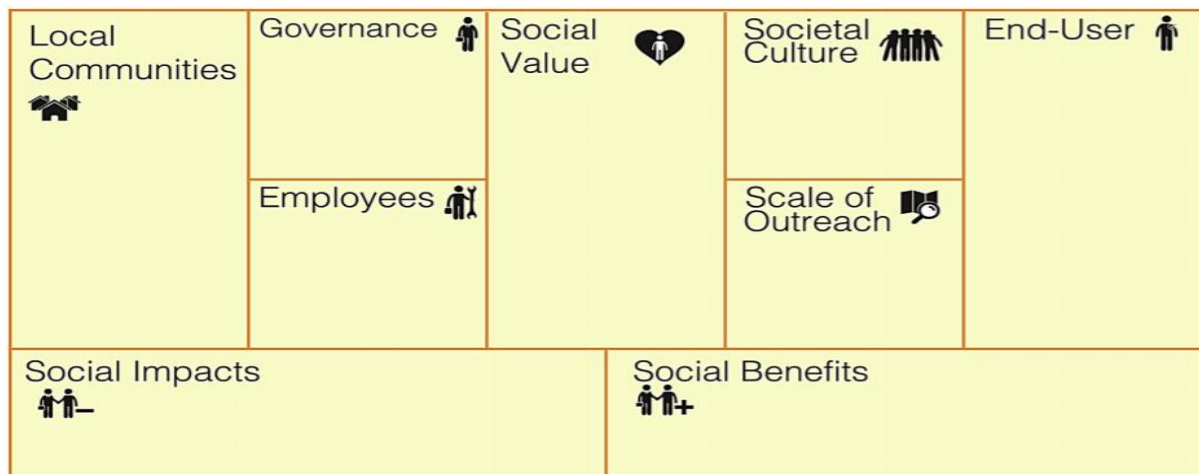


Figure 4: Business Model Canvas: Social Layer. Source: (Joyce & Paquin, 2016)

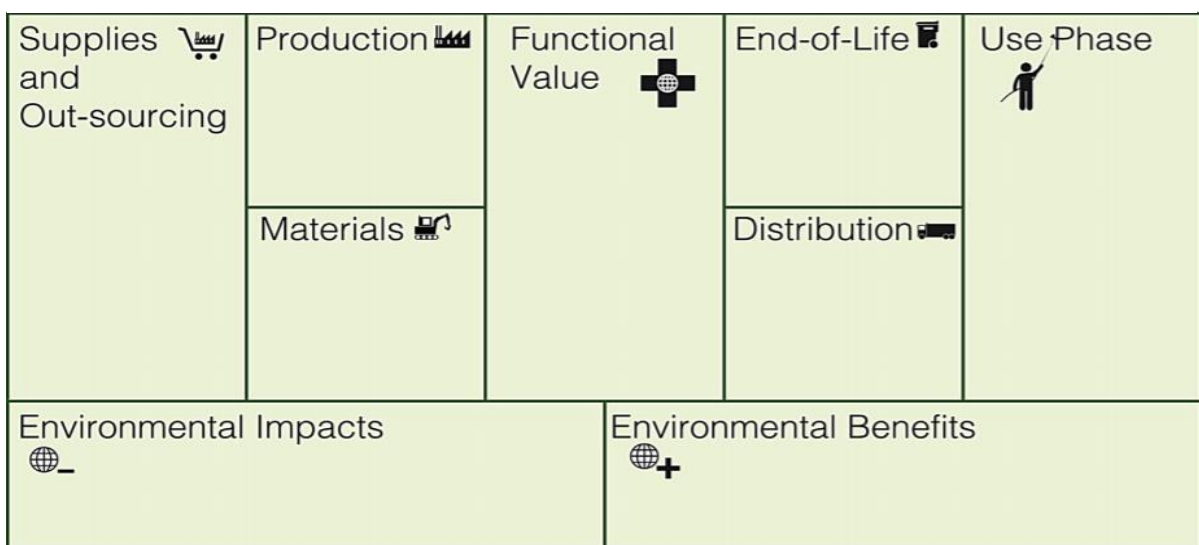


Figure 5: Business Model Canvas Environmental Layer. Source: (Joyce & Paquin, 2016)

These three are then placed all together to assess the effect of key action on all the elements. The model therefore provides the organization with the basic framework to assess their action and make further decision. The TLBMC is explored beyond the general business model canvas. The integration of the environmental and the social canvas layers provides a holistic view on sustainability model. It therefore can transform the existing business towards sustainability. (Joyce & Paquin, 2016).

The models have been used by companies like Nespresso to further investigate the above environmental and social layers. The integrated approach had helped the company to focus on the key impact areas and new improvement areas where the company can create more value with the existing systems (Savitz, 2013). Making explicit connection between the business models can support the business by innovation and providing new unseen opportunities. While the model is extensively criticized for simplifying the complexity of sustainability many organizations have taken up to integrate the business in the TPL concepts (Norman & MacDonald, 2004). After all innovation towards sustainable business model requires developing the existing business models which go beyond the economic focus and to one which integrates the environmental and social values to the company (Savitz, 2013).

Business Model

For a sustainable society the companies need to update their business model based on the Triple P guidelines. In today's world the range of technologies and theories are numerous however the long-term effects of the Triple P ideas are limited. Therefore, to avoid from suffering losses from an innovation going wrong a concrete business model based on different strategic innovation element which are further discussed. The level of success of the companies can be easily determined based on the triple P conversion but these thoughts are extremely limited to new models and in predicting the fate of the model. Therefore, this requires a strategic innovation and continuous improvement strategy (Somerén & Nijhof, 2010). Research have shown the various elements required that combine into business model, is shown in the figure below,

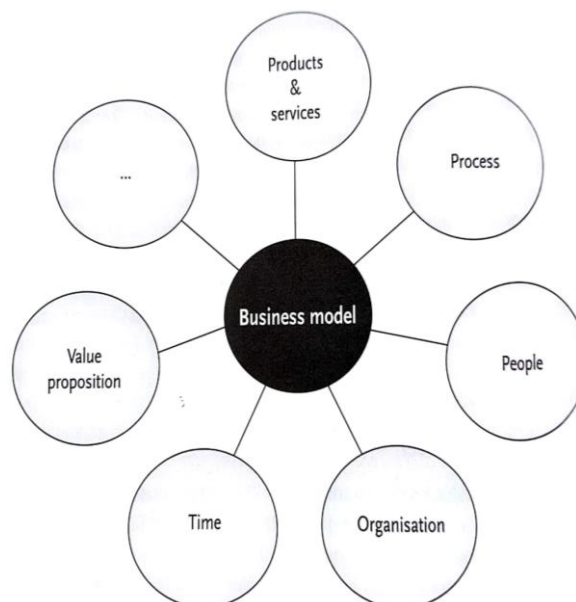


Figure 6: Elements of Business Model. Source: (Somerén, 2005)

The business model helps the companies to find the bottlenecks in the value chain and form the foundation for the integration of the triple P idea. The research paper uses these elements to evaluate

the current business model of the researched company and further propose a newer model based on the concepts of sustainability and strategic innovation. Therefore, here lies relation with the business development (Somerén & Nijhof, 2010).

Business development

The business development often starts with the idea or necessity which is often impossible to apply to the current running business without affecting the financial boundaries of the companies. The Idea at first usually implemented in very minimal scale with just short discussion without any detailed plan or calculation, However, once the trust and the need of idea is made and it requires some financial resources. the companies then tend to dig further into discussion with the stakeholders of the companies, draw calculations for the benefits of the idea and formulate the business plan and the business development path (Somerén & Nijhof, 2010).

The business model elements as discussed earlier form the central part of the development along with other elements. A pathway through which the development can be achieved is shown in the image below,

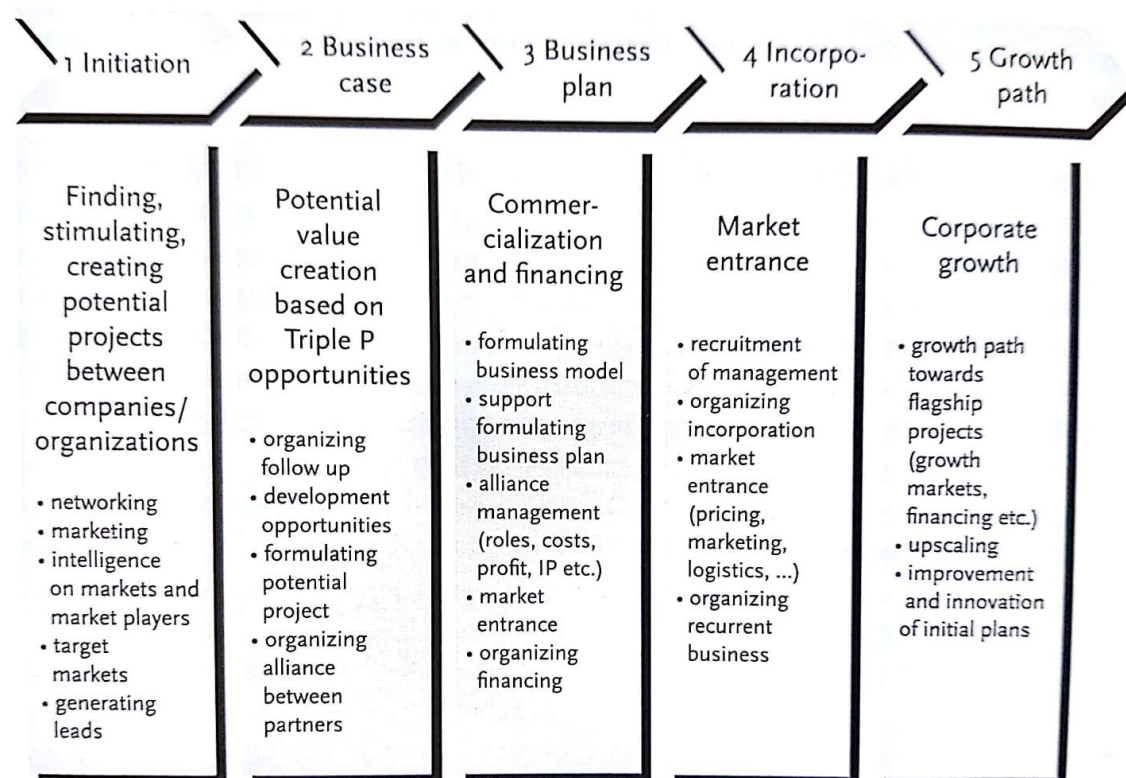


Figure 7: Business Development Pathway, Source: (Ynnovate/ Province Limburg, 2008)

In the above image the first step is the Initiation part, which involves the companies and the shareholders in the food supply chain in come together under one umbrella. This is sometimes not possible when the company deals on global scale and in other cases company tend to move towards vertical integration by sourcing the important parts of the supply chain internally. However, in the era of sustainable development, it can also be seen that for the companies to survive and improve it needs to co-create with the other stakeholders. The concept of co-creation leads the companies to develop new channels, products and services by combining the strengths of all the participants in the supply chain. This also enables the company to develop competitive advantage over the competitors. Once a

new idea is initiated and agreed by all the stakeholders the company or the multiple organization need to design a business plan which coincides with the business model. This can be later followed by the entering the market and following the development path again. Thus, making a cyclic process and ensuring the companies to be better on everyday basics. The development plan is not limited to group of size of company and thus can be used at personal, group of companies, corporate and sector level. It can also be used within the groups of the company.

With this growth perspective the company can also find solutions to tackle the short-term financial strains. The best pathway is to continue traditional business with slowly integrating the triple p business idea. This helps the company to gain time and internal cash flow. The development does not happen overnight and needs to be incorporated as a part of continuous improvement plan for the company (Somerén & Nijhof, 2010).

Strategic Innovation Theory

The core of strategic innovation is the renewal of business practices bottom-up. Among the certain elements such as new designs, new models, new performance criteria, value proposition the concept builds upon the view of Schumpeter which involve innovation as the introduction of new goods in new markets along with better production methods and restructuring the raw material sourcing and supply of goods. It involves formation of new organizational structure. The renewal can also include new business model with the unique combinations of the strategic innovation elements. The central research of the paper is focussed on application aspects of the theory in the SMEs not in evaluating

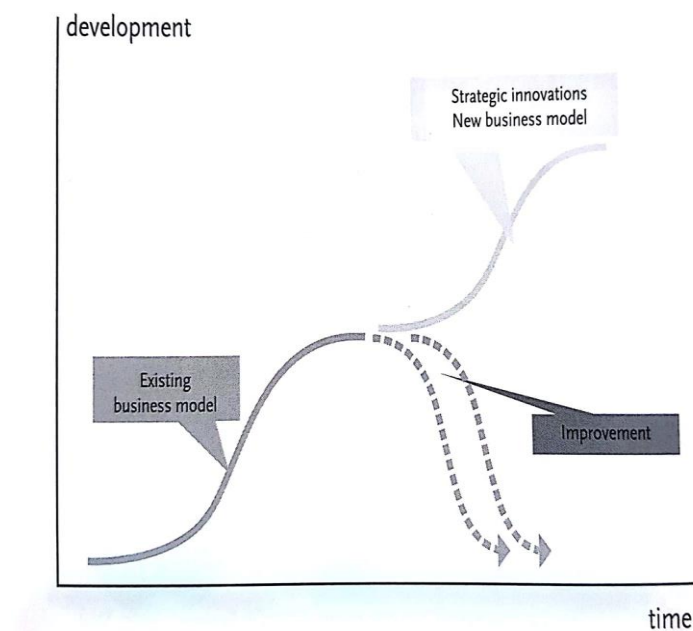


Figure 8: Strategic Innovation and Business development curve. Source: (Somerén, 2005)

the theories and models, therefore only important elements are further discussed which are said to be the underlying foundation of triple P business development (Ansari, 2014).

Value conversion by Triple E

The innovations only survive if value is created all along the chain. In the context of triple P business value conversion would mean economic, social and ecological value. Value creation is the most necessary aspect of the businesses and as the companies tend to restructure their business based on the sustainability principles it requires to keep focus towards the value creation. The business plan depends upon it. The core of the shared value creation is that the value is created not only for individual members but also to that of all the members involved in the value chain. The necessity of shared value creation has grown these days as the companies tend to build stronger relations and move towards vertical and horizontal integration. Shared value creation is based on the three-stage

model which includes – value proposition, value creation and third value capturing. The first one involves structuring the business model and forms the centre of the business model. The second stage involves in realization of the planned model and the later involves practicing the model in the long run. However, the above concept of value creation needs to be replaced by the idea of value conversion because it fits the manifold of parallel business action categorizing the strategic innovation and secondly it allows to integrate the triple P business idea (Someren & Nijhof, 2010).

In the creation of a sustainable business model through strategic innovation one would require abiding by the *modus operandi* of strategic innovation that is the Triple E, economies of scale (EOS), economies of scope (EOS') and economies of time (EOT) closely combined with sustainability fundamentals (Someren & Nijhof, Triple P business development in Dutch agro-food sector : 9 cases of strategic innovation., 2010). For example, economies of scale would include increase in the quantity of products sold while the lowering the input costs per unit. Economies of scope would include the number of varieties of the products provided by the company and the economies of time would include shorter lead times and processing times to reduce wastages in the agribusiness food industry. Each of the economies are closely linked to each other. In sustainability perspective the economies of scope include the social and ecological aspects and the economies of time can be related to the environmental aspects. On such example of EOT would include just in time (JIT) approach where the companies aim to deliver higher number of products by reduced lead times and lower number of defects, which when linked to the environmental aspect would mean lower amount of wastage. All the three economies directly contribute to profitability to the company. In agri-food sector the company needs to be highly careful in choosing the right combination of Triple E as to achieve success by this method.

Triple E is the *modus operandi* of strategic innovation for value conversion and can be applied to the business development area of sustainable business model. Some examples where triple can be applied in the trading sector of agricultural products among SMEs include,

Economies of Scale – The amount of good traded per year can be increased by trading in new markets, supplying to customers of different segments (Economical benefit due to higher revenues).

Economies of Scope – The scope relates to the variety of products required or the number of suppliers/customers involved with the business with fair pricing (Social and ecological impact as the company serves more people).

Economies of Time – The companies could reduce the time of storage and logistics which could reduce the wastages and provide the customers with more time frame (Environmental benefit by reducing the post-harvest losses) (Someren & Nijhof, 2010).

Emulation

Emulation refers to the process of imitating and innovating from the ideas of the competitors or the companies in the same market or at different areas of the world. Emulation often bring higher return than invention of new models as this is always going to be better than what had been invented or innovated by further innovation. This is therefore a cyclic process because once an innovation is successful in the market it will be imitated and further innovated by others. It also reduces the costs and risks of incorporating new innovations in the existing systems of the company. In other words, it also means to outperform others by innovation in small steps either technical or non-technical thereby creating new business model (Someren & Nijhof, 2010).

The emulation enables the entrepreneurs, organizations and multinationals to create more value however in the method of creation of values it also leads to destruction of some value creation

activities due to the competitive actions over time. This therefore requires the companies to keep emulating on innovation and thus leaving the company vulnerable to changes every time the innovation team comes with the idea. This also requires the company to have highly flexible labour force, skilled labourers can be harder to find to incorporate the new ideas, it also needs the company to have high influx of cash flow as all innovation requires some financial inputs. All in all, as interesting the strategy sounds it is not very easy for the companies to follow it on practical grounds. For being successful in the given strategy one needs to be well experienced in the market and must have a concrete business model which could adapt these innovations while achieving the goals and visions of the company (Li & Kozhikode, 2008).

The agribusiness sector experience huge number of innovation and new models every year worldwide. To be more flexible and to adapt the changes of the market a company also needs to be more innovative and be able to adapt the changes. One such way to do this is by emulation, this would help the company to be updated to the recent developments and be more reactive to the changing trends thus ensuring higher profits. One such example where the company had gained success through emulation is the Chinese phone industry where once an unrecognised company in the world markets now have become the leading companies providing the customers with the features ahead of the trends (Morvai, 2014).

The strategy can be further supported by the failure rate of the companies with the first movers versus the improvers also known as emulators. The study showed that the first movers had a failure rate of 47 percent compared to the emulators with failure rates of just 8 percent. Other examples where company have succeeded with the above strategy include Google. The multinational giant emulated on the ideas of AltaVista and yahoo which later took over them. Facebook was released after the release of Myspace and Friendster. Thus, proving the advantages of emulation in the success of the companies (Strang & Macy, 2001).

The kind of emulation that can be practiced in the agribusiness firms would include new methods of packaging and transportation of products to increase the self-life and reduce wastages. Other areas would include new strategies to reach the customer in multiple ways by being more agile in the supply chain. Companies have now started offering their customers various ways through which they could meet their services. For example, the grocery stores offer their customer to order online, pick up their grocery at their convenient times, buy the grocery at stores. In the agribusiness sector one would require focus on the multinationals and imitate their ideas with innovation. Some recent innovation in the trading sector of food include smaller and convenient packaging, marketing of fruits and vegetables which do not look good but is safe to consume, lower transportation and storage times, purchase of produce based on the forecasted demands. Closer integration with the farmers to plan the crops to prevent overproduction of produces thus providing higher profits for the farmers (Someren & Nijhof, 2010).

Knowledge Gap

Research by different scholars and organizations have been done which provides various frameworks and guidelines for the businesses to incorporate sustainability. However, these frameworks are individual parts and cannot support the company single headedly. Some guidelines such as the global reporting initiative provide the company to improvise on the social aspects whereas other model of Global compact by United Nations provide the assessment for the environmental impact (Siew, 2015). There is therefore no existing model that is focused towards the trading agro-food sector that can apply sustainability to the current business model. The companies also need to follow certain improvement strategy integrated in the business model to be updated always regarding the new policies and needs. The need for sustainable model and triple p business concepts has become a necessity now to ensure the wellbeing of the future generations to come. With this thought and to use this awareness among people to gain profits the company needs to widely adapt sustainability principles in every action. The concern for the companies is in choosing the models which can be easily adopted by them without hindering the everyday business and fits the best for them. Among the certain theories and different models described above the company does not know on how to adapt those for greater good. As all companies have their own defined structure of supply chain, mission/vision and unique selling propositions, a model along with improvement strategy needs to be designed especially for the company.

The researcher therefore uses the above models to study the company and come out with the stress points and areas to improve. All in all, the final goal is to provide the company with a truly sustainable complete business model and a path to grow the business.

Demarcation

The demarcation of the thesis topic is that the researcher aims to develop a model that suits the company best regarding the current methodology of management and the style of actions. This thesis is also intended for the university Aeres University of Applied Sciences as a part of the bachelor program and for further research areas for the scholar. It does not aim to provide a fixed plan of action to implement the produced model and therefore requires further assessment for planning, requirement of financial resources and risk management.

Main and Sub questions

The combination of the theoretical framework and the knowledge gap can be used to form the main and sub-questions around which the whole thesis would further revolve on.

Questions: The main question of the thesis is as follows,

How to implement sustainable business models in agri-food business SMEs in the UAE?

To answer the above main question, it is further broken down in sub questions and then addressed,

- What framework for analysis of sustainable development in the SMEs in agribusiness trading sector exist already, can it be applied to create a sustainable business model?
- What are the key areas of impacts of the existing business model with regards to the sustainability?
- What models should be used by the companies to address the new goals of sustainability?

The combination of the above sub question would provide the clearer view on current situation and new models to adapt.

Goals and Objectives

The answer of the thesis must be clear and applicable to the target audience easily. The solution could reduce the overall environmental impacts and create a better business environment while improving profits. Sustainability in one's action has become a necessity today, with the help of the research paper the researcher aims to bring the attention of the target audience towards sustainability and make them realise its importance and benefits it brings. The successful application of sustainability in the trading sector would be able to reduce the overall food waste in the country and thereby move towards a better world and society.

The companies in the sector face similar problems and have similar models, therefore the thesis can be applied to a wide range of target audience. The target audience can use the methodology adopted in the thesis to assess and remodify the model according to them. The major objective of the thesis is to show that these concepts can be applied to the companies irrespective of their scale and it gives a development strategy through which the companies can grow their businesses. Secondly, bringing a reform in the company without affecting the company's operations, financial resources and making the company more sustainable in its actions is also one of the major objectives of the thesis.

2. Material and methods

In this chapter the methodology for each sub question is described. The empirical study in the form of the information gathered from the company is the fundamental aspect of the research. The research is more of a qualitative in nature. The personal experience and the in-depth unstructured interviews with the stakeholders of the supply chain would provide the specific input required for the answers to the sub questions. Additionally, the theoretical framework and the researches from the past literature will be used to support the cause of the thesis. Major of the analysis of the company is done by making a visual of the processes and steps in the company. The potential impacts and cause are discussed with the stakeholders in the interviews. Each sub question is closely related to each other. The former one is the continuing link to the previous one and therefore the inputs from the trusted sources and multiple interviews thus compared will be used to find the best answer to the main question. The methods for each sub question are further mentioned,

Sub Question One: What framework for analysis of sustainable development in the SMEs in agribusiness trading sector exist already, can it be applied to create a sustainable business model?

In the need to capture detailed and practice related data the case study approach was used in the research. A company based on the turnover, size of operation and type of goods traded is chosen which represents the interests of the agro-food sector. The company's manager for research and development is interviewed with the set of open and closed questions to understand the company's view towards sustainability. Closed interviews from the labourers working for the company at different sections of the company would be used to further assess the reality of the situation. The expenditure towards the sustainable development by the company would be measured against the revenue for last five years and co-relation between it would be tried to be established.

The framework will be studied in detail by the researcher. This would further involve structured interviews with the competitors to check how they differ from the company the case study is based upon. Once the data of the interviews are available the company would then be tested against the triple layer business model canvas, to assess the company's model.

Sub Question Two: What are the key areas of impacts of the existing business model with regards to the sustainability?

Apart from the data available from the sub question one the supply chain which forms the back bone of the trading industry will be studied. For the supply chain mapping the product is followed from the source to the point of sale. Based on the theoretical knowledge of the places where maximum losses occur, production, transportation and inventory, these departments will be given more importance.

The impacts will be assessed based on the quantity of food lost at different stages of food supply chain. The most important product based on the quantity traded and revenue generated will be selected. The statistical data available at the company regarding the quantities forwarded at the stage of supply chain would help to determine the shortages at the final and stage levels. Therefore, the areas of most impacts can be found. The percentages would then be derived by comparing the food loss at stage against the total food loss. Closed structures interviews with the key stakeholders would provide the insights for the cause of the loss. The keywords matching techniques would be used to assess the interview data collected. This involves breaking down the answers into simple keywords and then comparing them with the other answers. The number of times the keywords are used by the people would help provide a clear direction for the research. The surveys from the labourers of the company would also help to find the most stressed area of the company.

Sub Question Three: What models should be used by the companies to address the new goals of sustainability?

The sub question needs to be addressed on two fronts,

- Application of business development model in the company.
- The growth strategy for continuous innovation.

From the theoretical knowledge gained and with the help of interviews from the managing heads of the company the sub question could be answered. A plan based on the development model could be devised to achieve sustainability in the current business model. This would help the company to incorporate the changes in its actions.

Secondly, desk research would be conducted by the researcher to follow the new trends and developments in the trading sector in UAE from the internet to develop the emulation strategy for the company and the industry. The literature study on application of the emulation in practice would be used to provide the company with a definite plan of action.

The interviews combined with the personal work experience and semi-ethnographic research by the researcher will hopefully give a good answer to the main question.

3. Results

This chapter includes the results of this thesis. The results were obtained on two fronts, first an empirical study on a company had given the required insights in the matter of sustainability which was then compared to that of their competitors and second developing the improved business model with development strategy. Six interviews from the managers of different SMEs, 45 surveys from the different stakeholders of the companies and two interviews with the chairman and managing director of Abdullah Bin Khater Foodstuff, LLC an SME in Dubai had helped to solve the main question of the thesis. The results obtained from the above methodology are therefore processed per sub question.

3.1 Sub Question One: What framework for analysis of sustainable development in the SMEs in agribusiness trading sector exist already, can it be applied to create a sustainable business model?

To answer the above question the empirical method was use. A case study built on the medium scale company Abdullah Bin Khater Foodstuff LLC, based in Dubai was used. The company was chosen as it represents similar structure and interests to that of the target audience. First a little background about the company was studied (Appendix 1) and followed by the framework of analysis for the sustainability used by the company. The detailed interview with the company's key decision maker had helped to generate the idea of sustainability in the company's view point.

Interview findings:

The interviews with the research and development manager and the financial manager on the topic of sustainability had helped the researcher to get in sights with the company's point of view on the sustainability. The same interview was done with the competitors and the company labourers to find the correlation between the action and planning. The closed structure interviews based different parameter are summarized below,

Table 1: Sustainability summary key findings of different stake holders.

Key Points			
PARAMETER	Company Managers.	Company workers.	Competitors.
VIEWS	Responsibility towards environment and people, a tool for multinationals.	Reduction in wastages and cleaner environment.	Important to last long in the market and the society. For the greater good.
ACTIONS	Use of recycled packaging materials and entrepreneurial support	Focused handling.	Difficult to take effective action due to lack of awareness.
BENEFITS	Increased customer base.	Not clearly visible.	Reduced packaging costs.
NEED	Yes, to stay in pace with the changing culture.	If there is financial benefit.	Yes, but in future as there is no direct financial benefit.

<i>IMPACTS</i>	Wastage of produce due to sudden fluctuation in price and demand.	Working and living conditions of the people in the sector.	Total loss of produce before even reaching the consumer.
<i>ASSEMENT</i>	At the end of year in terms of entrepreneurs supported and quantity of food loss.	None	None
<i>FOLLOW UPS</i>	Required and should be done by the external agency.	Would help to improve the working conditions.	Government's job to keep companies on check.
<i>DEVELOPMENT</i>	Indulge in environmental aspect to reduce wastage by better management techniques.	Creating Awareness.	Required in full force, possible through unification of companies and the government.
<i>PROMOTION</i>	By the Dubai SME organization.		Expo 2020, through banners and article.

1.Views

The company research and development manager believed that the term sustainability was a collective responsibility to the environment and the people around us. It needs to be prioritized in every way. He also mentioned that they try tackle the problems first which have higher impacts in the environment and make plans. However, the company general manager believed that it is more of a personal responsibility to be active towards the society and environments by indulging in events rather than the company's involvement. The term is a more applicable to the multi-nationals who can afford the risks, for the smaller companies like us the efforts usually tend to outweigh the benefits thus bringing financial losses to the company.

From the point of view of labourer's sustainability is all about reducing wastages by better handling and management practices so that the precious foods do not end up in the dustbins. Having clean and safe environment is always pleasing and sustainability practices can bring it. The company needs to realise the wastages it creates and needs to act on it. On personal level we try reprocessing by removing dirt and sorting, try move the product forward as much as possible. Also, by the implementation of sustainability we may be able to have better standard of life which is now lacking.

On the other, hand the competitors view sustainability as the factor to make money and a tool for longer existence. Since the customers are more aware now towards the environment and good practices involved in the creation of the product, we also try to portray the company on sustainability terms. On personal level as a singular entity we feel we could not bring much of a change; however, efforts are made to create less wastages.

2.Actions

The beliefs alone do not bring the change, the actions we do has major impact on how we adhere to the views and beliefs, the research and development manager of the company said. He also mentioned the initiatives such as the use of recycled boxes and selling of the used boxes to the recycling company. The initiative is also jointly supported by the government of Dubai. Other actions such as providing equal working opportunities to the labourers of the company to form new business and provide them with all the supports required. The company till date had helped over 100 individuals to set up business in the same sector and supported them to have livelihood. A strong focus now is made on how to reduce the total wastages, however the lower data available is posing a real challenge on the sectors that create more wastages.

The labourers on the other hand try to reduce the waste ages by careful handling. However, they have little power in decision making and often feel helpless to do anything in this perspective.

The competitors believed that to incorporate sustainability in full force would require time and perspective which is currently lacking. One of the competitors believed that the awareness among the companies and the suppliers is too low regarding the sustainability therefore taking effective action has become challenging.

3.Benefits

One of the benefits that the initiatives have brought is the reduced cost of the packing material and the wastages of the boxes that used to pilling up in previous times. The overall costs spent on the raw materials for packaging was reduced by 35 percent. Secondly the initiatives to support individuals and entrepreneurs has also helped the company to boost the sales for the company as supporting them is a way to create more customers for the company. The general manager of the company said that "I am more focused in supporting such initiative which bring profits and loyalty to the company in long term".

Some the labourers have been able to set up their business by the people's initiative by the company however other people of the company believe that the benefits to them on personal level is not clearly visible.

One of the competitors said that the benefits were expected to come, as of now the action and initiatives by the company is very limited therefore there is no clear benefits which could be measured in terms of financial. The recycling of the boxes on the other hand has reduced the costs of packing material but increased the damages to the produce due to the poor quality of the recycled material.

4.Need

"Yes, for the company to move forward it is necessary to adhere to the changing business culture. It could be said to be the sustainability revolution in the business. The need for the revolution in our business is clear as it has direct impact. We also aim to come up with such business models in future but as of now we would like to have small initiative that do not cost much and follow the traditional ways believed the R&D manager. The company head CEO added that there has been pressure by their MNC customers to restructure the company's model into sustainability. He also stated that this tool could be a lifeline to sustain in long term.

For the competitors, the purpose was too small to be incorporated in the business model currently as its financial benefits are not yet clear. However, if the sector demands in future we are ready to act more sustainably.

5.Impacts

Both the company stakeholders the competitors believed that the major area where sustainability can be questioned the amount of wastages created. “We have thrown produce over 4 containers in a single day due sudden crash in the demands. Some other cause also includes the government policies which are highly dynamic. Recently the export to some gulf countries like Oman and Qatar was banned therefore piling the stocks up in UAE as the imported produce in transit cannot be returned. Also, the companies have orders drawn for yearly basis. Such reform leads to higher wastages.

From the labourer’s point the major impact is on the working and living conditions, in some areas more than ten people live in a single room of 160 square feet. Making the living conditions extremely challenging, complained the labourers.

6.Assessment

The company currently asses itself against the principles of sustainability based on the food loss, the profits it made against the volume, the number of new intrapreneurs supported by the company said the GM. However, the concept is still not very clear for us the measuring parameters are limited for us to measure in terms of numbers. The R&D manager said that the new actions and plans are made based on the sustainability ideas. He says that a concrete goal and correct planning would eliminate the need for regular assessment as the results would be self-explanatory.

The labourers said that “we are not given anything to measure, however we are advised to report losses on everyday basis”.

No assessments are currently followed by the competing companies, said the competitors.

7.Follow ups

Yes, the need for the follow up is necessary and is currently done in some parts of the company. But for the company to act completely sustainably an external force would be required. This would include a regulatory by the government or the strict pressure from the customers. Believed the manager of R&D.

A certain follow up would help the company to see the reality of our life and maybe force them to act. “Since the topic is more personal and the insecurity of job have kept us scared from complaining. Finding a job and being able to feed my family is more than I could aspire for” said grievingly a labourer of the company involved in logistics of the company.

The competitors believe that the follow up should be exercised by the government, as they have the funds and resources to invest to collect data and support up in such ways. At company level this might be the future step follow. Currently no steps are taken.

8. Development

There is a huge scope of development area for the business in the sustainability area. I would focus more on the environmental perspective of the sustainability and try to reduce the wastages. One such way would involve the demand forecasting and better warehousing of the perishables. An integrated system of inventory management with the ordering and suppling of products could bring

the best results. Much of the development is required in the IT sector of the company and a tailored made application would make the change possible. Strongly opposed the managers.

We can create awareness among the companies near us to bring sustainability in the actions. We can also create pressure in the company to bring new reforms, but this would firstly require educating the true meaning and benefits of sustainability.

The competitors on the other hand believe that development is required in full force. With current growing population and increasing wastages we could bring new reforms in storage, transportation and selling strategies to reduce overall impacts. This however is possible more and more companies unite with government to bring reform.

9. Promotion

Both the managers from the company and the competitors emphasized on the efforts taken up by the MNCs to bring sustainability in their operations. It has started a new trend in the sector. On the other hand, the Dubai SME corporation has focused on sustainability as its core in the coming expo 2020 which could be a turning point for the UAE's economy. Promotion through the banners and the articles in the publications has brought the word on everyone's mind.

The company workers are advised time to time to report the stocked products to the sales managers, who in turn try to push such products in the lower prices.

Based on the above interview a general idea of sustainability in the company's view was obtained. The framework used by the company obtained from the R&D department of the company is shown below,

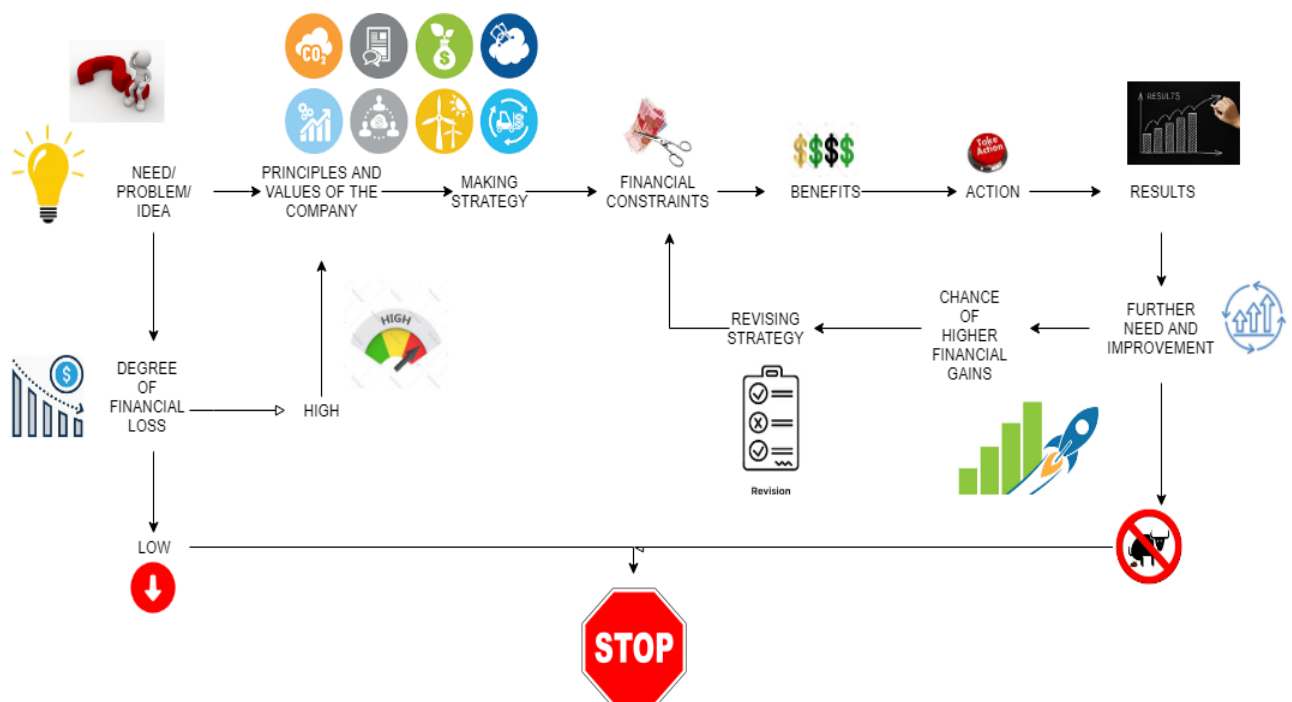


Figure 9: Sustainability framework of ABK Foodstuff LLC, Dubai UAE

The above framework shows the methodology adapted by the company for creating new decisions or reflecting upon the problems that may arise considering the different dimensions of the sustainability. The model is also a kind of algorithm that is followed by the company when it needs to incorporate or

bring in new ideas in the operations. The model is exercised at the management level. Upon breaking down the model, the R&D manager said that the major focus is usually made on the financial aspects in the company. An idea with higher direct or indirect financial gain is always preferable over other ideas. For the company to act upon any social or environment issue it needs to have some financial gain in it which would motivate the company to act towards it. For the company of such size doing anything out of the line of benefit could bring unbearable losses and disrupt the whole cash flow. Being a trading company, it cannot risk disrupting the cash flow.

Out of the different parameters above the company only considers the concepts of sustainability in the second and the third phase of decision making. According to the model anything which would bring profit to the company even disobeying the sustainability principle would be followed by the company. The major measuring parameter for the above model is profit.

Furthermore, the above company is now tested against the triple layered business model canvass (TLBMC) discussed in the theoretical framework to discuss the current standing of the company in every individual aspect of sustainability,

The TLBMC assessment of the company above have brought the insights of the company from the social and environmental perspective. The economic layer brings out the company's traditional model and shows that the major source of revenue is by the sales of the vegetables and fruits. In attempt to provide the customers with the regular supply throughout the year the company has partnered with the farmers and the transportation agency. In case of imports the custom relation have proved the company an easy way of doing business. The major share of the costs involved include the handling and the storage costs. Another initiative by the company to fulfil the supermarkets it had to set up its own farms to fill the demand gaps.

With social perspective the company has a different structure from the basic model. The societal culture of team work and collectivism is followed in the company whereas to the contrary the decisions are limited to the heads, having its employees no say in it. The cultural diversity of the company was found to be low as there are only few nationalities in the company. This is due to chairman who wants to help the fellow people that share similar nationalities. The company is also often found in the situations where it had to push the losses due to reduced prices of goods to the farmers while retaining its own profits. Valuing the relationships with suppliers the company has its way to safeguard and support them in times of stress. Operating in the global level with wide group as its end consumer, the impacts were found to be higher than the benefits at the social level.

The environment layer had brought out the key impact which shows that food losses due to fluctuating demands, longer storage time and improper handling ends up as waste in landfills. The transportation of goods from long distances have also shown to increase the footprint. On the other hand, the improved packaging technology in the sector had helped to prolong the shelf life of the products but these come at the cost of non-biodegradable packaging materials and new kinds of wastages. On the environmental front the company's total footprint is higher than its savings. Most of the saving coming from the self-production centres which reduce the transportation losses, time and production losses.

Triple Layer Business Model Canvas assessment of the company.

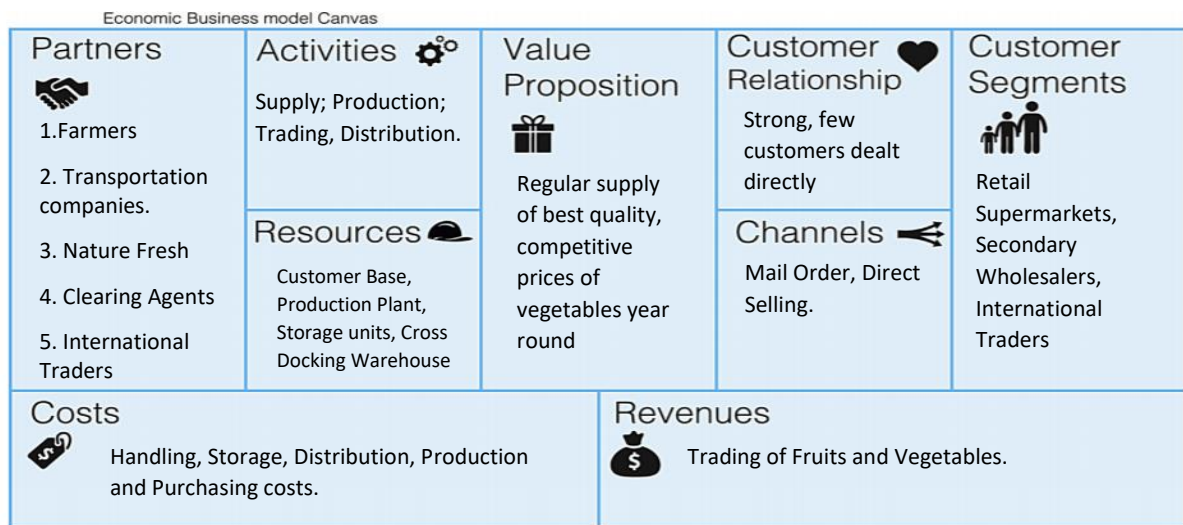


Figure 10: Business Model Canvas: Economic Layer of ABK Foodstuff.

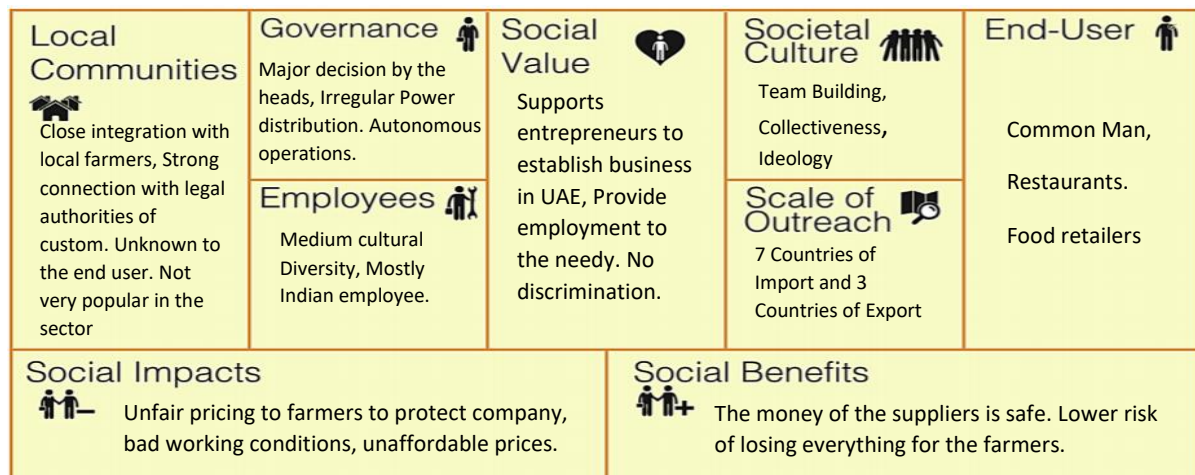


Figure 11: Business Model Canvas: Social Layer of ABK Foodstuff.

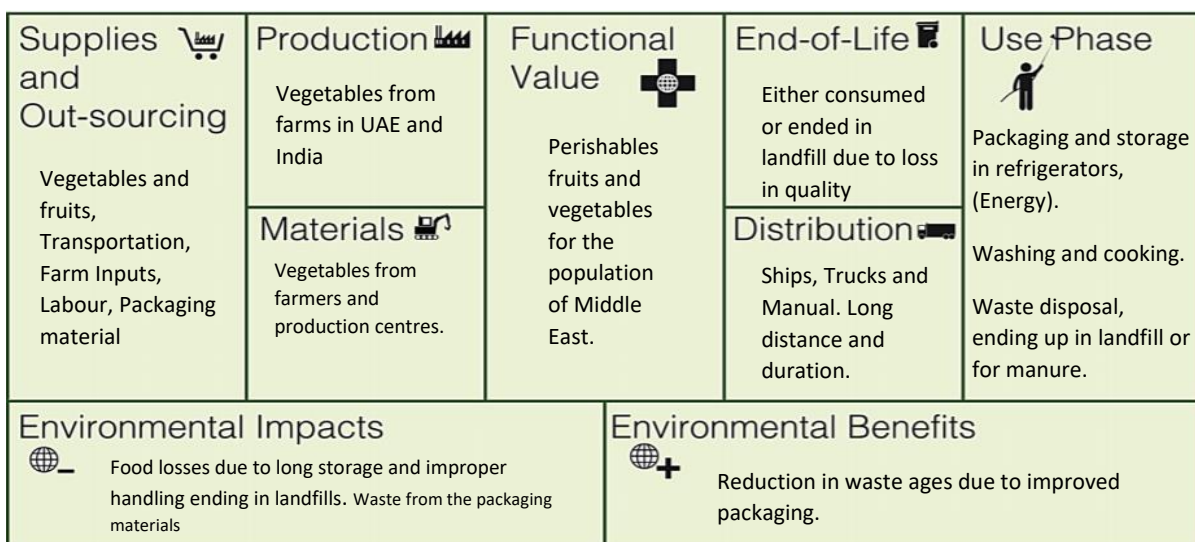


Figure 12: Business Model Canvas: Environmental Layer of ABK Foodstuff.

Sub Question Two: What are the key areas of impacts of the existing business model with regards to the sustainability?

From the above interviews and the company's assessment of TLBMC the losses were proved to be a major concern for the company where it creates environmental impact while losing economical value. This question focuses further on the losses incurred at the stages during the supply chain. The supply chain of the company attached in the appendix 2 shows the complete process of the company. It also shows the information flow between the different stakeholders of the company. The total wastages of products at different level attained from the company is used to define the major area of loss. The survey's results conducted among the 40 labourers and the managers is shown below,

The results of the respondents showed that the major area was the company incurred losses was the Inventory, followed by the losses at the production and the transportation level. The product loss at different stages of inventory was 9 percent of the total product traded or 55 percent of the total wastages in the supply chain. The products traded at high volumes such as tomatoes, broccoli and paprika was traced along the supply chain. Out of the total quantity of 40 metric tons traced by the researcher only 33.6 MT made it to the consumer and the rest was lost during the supply chain. The averages of past 5 years however showed that the wastage incurred during the complete year was 8 to 10 percent of the total product traded. The amount of wastage was higher during higher fluctuation and lower when the demand and the prices were relatively stable.

Further surveys and interviews carried out to bring out the factors responsible for the wastages at different stages showed that Inventory losses were evenly shared between various factors such as time, price and demand fluctuation, wrong inventory methods involving, unknown stock, lack of management practices. Handling also had a significant effect on the product wastages.

The production sector stands second in terms of product loss. The major reasons for which was found out to be the crop loss due to pest and diseases. Other reasons involved, uncontrollable climatic factors, lower quality of fruits in terms of shape and colour and handling. The sector also had smaller

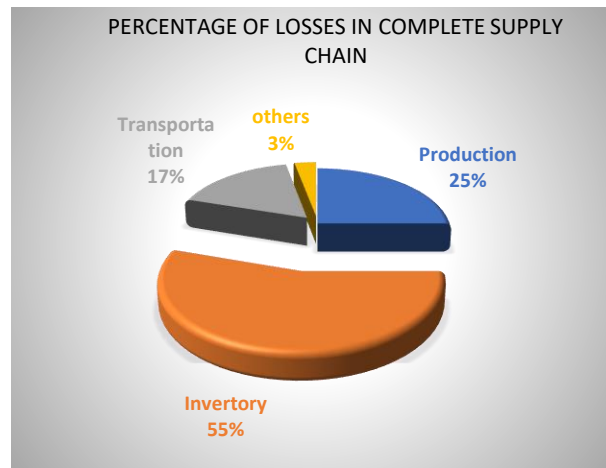


Figure 13: Percentage of Losses in Complete supply chain.



Figure 14: Major Inventory Losses.

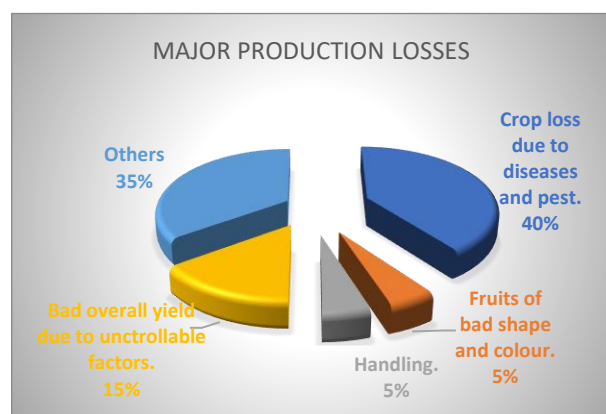


Figure 15: Major production losses.

factors categorized under others that involve wrong type of variety planted, irregular irrigation due to water shortages and other factors at farm level which reduced the expected yields or gave fruits of bad quality. One major factor found during the interview with the manager was that “the unavailability of skilled labourers also caused damage to the fruits as they did not know the techniques of intercultural operations in the crop.”

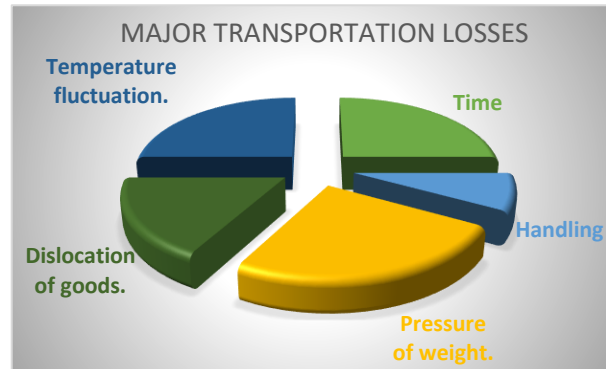


Figure 16: Major transportation losses.

The transportation losses accounts for the total of 17 percent of the total wastages. This involved the transportation from the customers to the company were factors such as long time, temperature fluctuations and the dislocation of goods to be major concerns. The handling also caused damage to the product while transporting within the company.

Sub Question Three: What models should be used by the companies to address the new goals of sustainability?

The theoretical knowledge of five step business development model and emulation strategies on the key areas of concern obtained from the above question can be used to frame a development path for the company. TLBMC had been proved to be a suitable model of assessment for the company in sub question 1.

Interview Findings

The interview carried with the company heads – Chairman T.V. Vijjayan and CEO Aditya Neelkant of ABK Foodstuff LLC has brought some insights on the following,

Goals: The company primary goal when it started was to provide regular supply of fruits and vegetables to the consumers in middle east with UAE thereby, increasing the food security of the country. However, “we have now modified our goal to provide fruits and vegetables sustainably, with higher benefits and lower impacts to the people and planet”

Constraints: ‘The biggest problem for the company to reach the peak of sustainability is that the risks are high, in an event if some process goes wrong the whole cycle within the company would be disrupted’. Moreover, the expertise is lacking who could show us the right way towards it, said the chairman.

Growth: The company growth is decreasing over the years. To the contrary the profits are high as the company turnover remains constant we have been exploring new markets where we could get higher margins. Also, over the years the wastage rates have gone high caused due to the fluctuation in price and demand due to increased competition.

New Innovations: Some of the innovation in our sector are,

- Demand for the organic produce. The organic food consumption is expected to rise further in the coming years though the major part of the population, the low earning groups is untouched as organic food is always related to high prices.
- Use of mechanised transportation system such as the motorised fork lift to replace the human transportation within the market. A huge volume is shifted among the companies in the

market by human pulled carts. These are now being replaced by the forklift by the competitors.

- A huge number of companies have now started engaging in food processing industries, creating new product lines such as fresh juices, ready to eat salads, frozen packed fruits, canning. The use of new preservation techniques such as freeze drying also enables the company to store their products for longer times.

Models for sustainability: The company uses traditional methods of operation which are one of the simplest forms. The principles and the values of sustainability are used in the decision-making process and it is made sure that the steps create both ecological and environmental benefits. "The best model would be the one which could help the company develop while making it sustainable. Also involving changes that require higher financial input can be dangerous for the company's cash flow. As the buyers look for the companies that can provide with higher time for payments." said Mr Neelkant.

The sector also lacks skilled labourers therefore a model which can easily be adopted in the current system would be easy to follow in the complete supply chain.

4. Discussion of the results.

The chapter below explains outcomes gained per sub question. It further explains the process of the data collection and the limitations of the research paper. The results along with the theoretical framework is used to highlight the key findings and evaluate the same in accordance to the theory.

The objective of the thesis was to find a way to implement the models of sustainability in the existing business model for the small and medium scale economies in agribusiness trading sector. The companies dealing in the trading of the perishables have direct impact to the environment as their decision decides the fate of the food. The traders maintain the link between the end consumer and the producer making their actions highly responsible for the wastages within the supply chain. Therefore, it is highly important to have careful management among the trading SMEs to prevent the food loss which has today become a global issue. The sustainable model if incorporated in the companies would not only bring environmental benefits but also benefits to the farmers and labourers working along the supply chain.

The Results,

The sub question one is focused towards the current framework of analysis used by the company for sustainability and to find out if it could be used further while creating a sustainable business model for the company. The empirical form of study had helped the researcher to get the insights on the sustainability from the company's point of view.

The results of the sub question one can be seen in the figures 9,11 and 12. The figure 9 pictures the framework for the sustainability by the company. The framework shows that the sustainability principles and values is only focused on the two most important decision-making areas that asses if an idea passes through the values and principles. However, the other areas within the framework is measured based on the profitability terms. To obtain the understanding from the company's point of view the interviews were conducted. The interviews showed that the company stakeholders lacked awareness about the sustainability and were unaware about the benefits it could bring. The idea of sustainability was limited to the idea of saving environment by reducing food waste. Other areas where impacts are made knowingly and unknowingly is often neglected. On the other hand, the company believes that the scale of the company is not big enough to incorporate the ideology of sustainability and is just a multinational company's tool.

The triple layered business model canvas was used to assess the company based on the social and environmental grounds. The social canvas shows the company from a different point of view from which the company seems to equalize the benefits with its impacts. The company on one front wants to support new people to come in the sector and help them starting up their own business. The company helps the entrepreneurs by funding and guiding them. Whereas on the other hand, due to strict policies the company needs to push the losses to its suppliers while sustaining its own practices which can be devastating for the farmers as they do not get the break even for their produce. The sector hard to trust however the company guarantees the payments to its suppliers which has helped it to gain trust of the suppliers.

On the environmental front the company has higher carbon footprints most of which is caused due to the food loss due to improper management and inventory systems. The improvement in the packaging materials to improve shelf life and use of recycled packaging materials had helped the company to save carbon footprints however it has also created a new line of wastage of non-biodegradable packaging materials.

Sub question two was focused on finding on the areas of concern which needs to be focussed on further while framing the sustainable business model and the development plan. The major area of concern was found to be the inventory, it was the highest sector where the most wastages were created. Though the company is mostly involved in rigorous trading and faster moving of product, the fluctuating price and demand functions leaves the company with deadstock or over inventories. Also, a major area of concern was found to be the lack of management techniques towards managing the inventories.

Other areas where the maximum losses occurred were the production centres of the company and the suppliers. The major reasons being the uncontrollable factors such as climate, rainfall which has direct impact on the pest on diseases which destroys the crop. Some produce which are of bad quality often do not see the face of the transportation and is discarded. The transportation losses were also found to be of considerable amounts. Major factors for the transportation losses involved handling inside and outside the company, pressure of weight on the bottom boxes leading the produce to be destroyed.

The sub question three focussed on the type of model that can be applied in the companies which can be easily applied in the existing model making the company easier to adapt. However, from the question one it was found that the existing type of model was not performing well with respect to sustainability and therefore factors for selecting the model that would be perfect for the company was searched for. It was found that the model which had less financial investment, which brought a development strategy for the company and more importantly one which would be easy to follow. A simple model would be the best type for the sector. The result therefore to this sub question would be the use of the five-step development model, with triple layered business model canvas as assessment to the model would best suit for the company.

The main question of the thesis on how to implement sustainable business model in agribusiness SMEs could be thus said to be answered with the combination of the sub question. The sub question three shows the kind of model which needs to be used along with focusing the key areas found in sub question two and the assessment criteria used in the sub question one. All in all, the model from the theoretical framework needs to be used by the company with few focus areas and addition. Also, the emulation strategy could be used as starting point for the creation of business development pathway for the company. This would involve minor changes and rapid growth for the company.

[The Process,](#)

In general, the complete research went according to the plan. The research was aimed at conducting an empirical study to have critical insight in the sector from the company's point of view was made possible by the company. The openness of the company to share detailed aspects of the business had made the research possible and truthful to very extent. At start as per the plan the interviews were set, and surveys were supposed to be conducted. However, the surveys had to be combined with few questions to get the desired results. The complete perspective of the thesis was new for the company and the interviewee had to have deep thoughts before they could answer the questions. The surveys were also not easy for the people to answer as there were more than one answer to the questions. Collecting the right people for the data was a challenge. The sector is filled with people with lower academic background therefore have lower understanding about the academic terms and language barriers. Therefore, these people who practise the everyday operations within the company cannot be interviewed.

The part of conducting the interviews went well. As the people are always eager to share their experiences and advice, gathering critical information was easy. The openness of the company also

enabled to understand the problem from the company's point of view. While conducting the research next time multiple companies needs to be considered. As the companies differ largely it is hard to focus the research towards the sector. The data collection technique could also be improved, creating a simpler survey and interviews in the local languages can also help to gain more insights.

While redoing the research it should focus on aspect of sustainability differently based on quantitative methods and then brought together. These should be then connected to the financial benefits and impacts as it would help the company to better understand the need of the company. The target group for the interview could also be widened towards the customers and the suppliers to get their perspective towards sustainability as the supply chain is incomplete without them.

The data collected was reliable but not repeatable. As the company in the sector vary highly from one another and the company itself is highly dynamic towards its operations. A product may be stopped by the next research and the company would have diverged into a different product. The sector is also experiencing major development in packaging industries which could prove to save a significant amount food loss. The changing policies of the government has direct impact on the way of business. The government is known to stop import/exports to neighbouring countries due to political tensions which could have direct effect in the supplier and the customer base. The product undergoes high fluctuations and increased competition in the sector could force the company to change the model completely if required. This report therefore depicts the current situation. However, the changes are not very instant and may take years to happen.

The amount of data was limited to a single company therefore concluding to the whole sector would be difficult. More data could be collected from other companies but finding a company ready to share the internal information is always difficult. The objective of the thesis to find how to apply the sustainability models in the current model, could however be justified with the available results.

[The Methodology,](#)

The research was small scale with only one empirical case study. The focus was on the SMEs in UAE. Although the researched company shares the values and the interest of the target group it does not represent the whole SMEs in UAE and not the complete supply chain. The business models practiced by the different SMEs and the product groups are similar, also they share the similar views towards sustainability therefore this could prove to be a guide for other companies to analyse and design their own model.

During the research it came forward that most of the people interviewed and surveyed were from the inventory sector of the company and had deeper knowledge in the respective sector, however the logistics and the production labourers were limited therefore may do injustice to the other stakeholders in the supply chain. The sustainability needs to be assessed from production and the transportation angle too. The company that was studied here was operating on a global scale but to the companies that were operating on a national scale and involved in the supply business to local communities would be a part of the target group, but the research might not hold true for them. Thus, causing the major limitation of the research to its adaption. However, if treated as a base line it can be applied on any agribusiness trading SMEs that struggles in incorporating sustainability.

The close structured type of interviews had helped to get the desired information however it may also had led the interviewee to share some information which may be indirectly related. The close structure made them to focus on a smaller portion of a bigger picture. A close interview along with some informal open interview could have proved to be more informative.

A non-influential factor that influenced the research was time. The time frame being too short it was difficult to get insights from every stakeholder of the company. The research was carried during a season which had low influx of product, if they were carried out six months later the results would have differed, the food loss may have been lower, and the company might be more environmentally responsible as the products are locally produced, eliminating the need for import. However, it is highly seasonal.

The Reflection,

The final phase of the discussion is to reflect upon the research results and the theories studies. It aims to find the correlation between the two.

In general, it could be said that the research was effective for the company and the creates a base line for the competitors and the stakeholders to follow. The theory of maximum losses that occurs at various stages such as the inventory, production and transportation were found to be in line with results. The company also experiences the losses in the above three areas and need to focus more upon. The triple layered bottom line and the concepts of sustainability had helped as a mirror to reflect the original face of the company and the areas it needs to focus upon.

The research paper was found to be too broad in the different concepts, when following the research, the next time it is advised to follow more focused approach as it would help the researcher and the company to gain deeper insight in the area. These researches combined with other research would help the company to excel in all the three spheres of sustainability.

5. Conclusion and Recommendation.

The research topic was to find out how the principles of sustainability can be incorporated in the SME's business model. SMEs today form the major part of the total business in economic, number of people involved and the GDP share in the country. Individually they create negligible impact but however when combined the sustainability impact exceeds any other. Thus, to bring a real change in society and to address the growing concerns regarding food waste, environmental and ecological impacts that the small and medium scale economies create it is highly important to focus research towards such companies and bring theories in practice at the smallest level. Only then a sustainable future could be created for the company and the generations to come. At the same time the thesis does not only aim to convert the target audience into sustainable but also put them on a continuous developing path through innovation and business development strategies.

First, the major conclusion that can be drawn is about the current situation in the sector towards sustainability. Even though the sustainability concepts are not new to this world and there has been progressed research towards it; the sector at the smaller level is completely unknown to it. The idea of sustainability among the stakeholders is limited to saving the environment, less focus is made upon the financial and long-term benefits that it could bring to company and society. Lower awareness and knowledge are the major factors for the company to have not acted upon it. The business techniques followed by the companies are traditional, and so is their sustainability framework which looks primarily upon the direct financial benefits.

The assessment of the company on the triple layered business model canvas showed that the company was environmentally negative, creating higher impacts than saving. The social aspect of the canvas also revealed the ill effects of the company on its people, the poor working and living conditions questions the humanity of the company. However, the labourers on the other hand are left to suffer as they do not have any choice but to survive. Overall the company might be successful on economic front but has a long way to go in the social and environmental aspect.

Secondly, finding out the key areas in operations that creates higher impacts was necessary as those could be a starting point for acting and incorporating changes. The major impact was seen in the inventory system which was highly affected due to poor management practices and the dynamic market. Forecasting of demand was not practiced and the ordering is also highly random looking at the pace of the market. Thus, leading to gaps between the demand and the supply. The company needs to engage in better inventory optimization technique and move towards the just in time approach to reduce the wastages. Other areas of transportation and production also requires technological enhancements and better management techniques which is now lacking.

Other conclusion that can be drawn is that the type of model that the companies can adopt at ease. The level of acceptance is high, and the stakeholders are willing to take the chances if the models show definite financial benefits and easy to adapt. The only challenge to the adaption is the scarcity of the skilled and qualified labourers thus any model that needs to be adapted in this sector needs to be simple to understand.

The main question was **How to implement sustainable business models in agri-food business SMEs in the UAE?**

The above question can answer accordingly, the sector needs new tailor-made sustainable models per company, this could be made possible by adapting a business development five step pathway which needs to be further integrated with the emulation strategies for further innovation and adding value to the company and its customers. The complete model can be then further assessed using the triple

layered bottom line that sees a single company with three different angles. Periodic assessment of the company would help the company to move towards sustainability. The above model requires better management team focused towards the sustainable development of the company. These stakeholders need to move out of their comfort zone and join hands with the other stakeholders to collaborate and integrate sustainability from farm to fork.

The next section provides the company with the possible recommendations that can be adopted over different time frames to achieve the goal of a sustainable company.

Short Term recommendations:

- The companies and the government need to jointly create more awareness about the principle of sustainability inside and outside the company. This would help the other stakeholders to realize the importance and start action towards it. Emphasis on how sustainability has not only brought the environmental but also financial benefits needs to be portrayed by the company and government, this would be a strong motivating factor.
- From the company's point of view, it needs to adapt the IT solutions which are available for the inventory management systems. Several companies are now engaging in providing tailored IT solutions with the modern tools to ease their management. The software is easy to use and can be used on every point. Therefore, leaving the experts to design and choose the appropriate system would help the companies with the most optimized solutions.
- An organization within the company that focuses both on the business development and the sustainability incorporation in the company needs to be formed, these organization may put the company at test with different models and create an optimized solution. Apart from these it could also bring new innovations to the company. Some of the examples of emulation strategy that could be used by the company include,
 1. Production of inhouse organic produce to reduce the production costs and targeting the produce to the low earning groups. Moderate pricing than the general produce would help the company to upscale and entertain wider end consumers.
 2. Incorporation of completely motorised transporting system within the company to reduce manual handling and labour costs.
 3. Tying up with the food processing companies and giving a second life to the fruits and vegetables which cannot be sold but is fit for consumption due to poor quality. Thereby making money from the waste products.
- The company needs to redesign its model with the help of sustainability experts and R&D manager of the company with the above literary models and plan for the long-term goals and actions. For the short term the company needs to have a structured model and development plan on paper, Further research on operations individually could help the company to create more detailed plan.

Long Term Recommendation:

The long-term recommendation is just the mere follow up of the short-term action. The change that is aspired for in this research cannot be attained in the short duration of time, for the company to be truly sustainable it needs to act further on the models that were created in the early stages. The key recommendations involve,

- The model needs to be implemented in the operations and needs to be followed for a long time with continuous improvement in the model itself.
- Periodical assessment of the company based on the triple layered business model canvas would help the company to compare itself over time.
- Further research with the elements studied individually such as sustainable inventory management systems for the company, the supply chain optimization and steps for the stakeholders to adopt outside the company would help the company to improve further and attain perfection in its actions.
- Data collection needs to be done. This would help the company to better forecast the demands and respond actively. The just in time approach could be adapted here.
- Stronger integration in the supply chain is required and the company needs to push the suppliers and consumers to act more sustainably. Vigorous marketing of products as sustainably sourced products could help the company to gain premium pricing for the products.

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Appendices

Appendix 1

Case Study – Abdullah Bin Khater Foodstuff, LLC Dubai, United Arab Emirates.

ABK Foodstuff, LLC is a renowned trading company which imports produce from over 15 countries and supplies to the various companies in and around UAE. The company is categorized as a medium scale business with turnover of over \$55 Million USD and provides employment to over 50 people in the past year 2018. The company has been existing since past 30 years and is extensively involved in trading of vegetables. The major imports are from Spain, Italy, India and Iran. The company is currently chaired by T.V Vijayan an Indian national residing in Dubai. The company's CEO is Aditya Neelkant, son-in law of the chairman.

Historical Background

The company was started in the 1989 with the only one person in the company trading vegetables between the wholesale and the retail markets. The root business of the company being trading and is what the company had grown on over the few years. However, the company now had further branched into integration with their farmers and started a sister company named Nature fresh which supplies goods directly to the consumers.

Structure of the company

The company has the simple structure. It currently has four operating units designed for different operations in the business.

- The head office of the company handles all the documentation regarding the company. The major part of the head office is to handle the finances, customer and supplier payments. This consists of five accountants headed by the financial manager, one import manager who controls the documentation for import, the general manager and the office of CEO.
- The second and the third operating units are the cross-docking unit where goods are repacked and distributed to the customers of the company. Wholesale trading takes place here. The regular customers come to the company inspect the goods while in the containers and directly transport it to their facility from the container. The third operating unit has cold store facility thus enabling the company to store the goods for few days. Both the units have one sales manager, one accountant, three sales representatives and over five labourers for loading and unloading. Thus, the total workforce of 20 people.
- The last operating unit is the face of the company where the goods are sold based on the display to the people. This acts as point of sale for the company where the major sales are done in cash. However, eighty percent of the goods traded by the company are sold based on credit of two months. Therefore, the unit also acts as a lifeline for the company to move products which have less shelf life left at lower prices. Over 20 people are employed in this unit.
- Other employees of the company include the two-local purchase manager who buys goods from the local market to fulfil their customer needs.

Products Traded

The products groups are highly dominated by vegetables. Some of the most traded products by the company include broccoli, cabbage, squash, cauliflower, paprika, cucumber, tomatoes. Other product groups include seasonal fruits, leafy vegetables like celery, sweet corn. The company also trades

certain products irregularly depending on the demand and price in the market. However, the company focuses much towards the common products consumed by wider population.

Style

The company believes in trading of goods with less margins but in higher quantities which in turn had helped the company to be agile to the market fluctuation in price and demands. With lower shelf life the company needs to attain best supply chain practices and forecasting to avoid the food waste. The company has been highly involved in vertical integration and had set up various farms to obtain supply according to the market condition. Further tie up with the farmers have also improved the company's regular supply throughout the year. In a broader picture the company is focused mainly on the trading aspect and the price of purchase is decided upon the price of sale with a portion of it left to the company. However, this does not hold true for the products that are imported by the company in UAE.

BLACK ARROWS → INFORMATION FLOW



Appendix 3

Table 2: Overview of the questions.

Overview of the questions for sustainability interviews.	
1.	What is your role and how are you connected to the company?
2.	What does sustainability mean to you and the company?
3.	Steps taken towards Sustainability measures.
4.	Has sustainability helped the company in any way?
5.	Is it necessary involve sustainability ideas into every operation of the company?
6.	What are the key areas where sustainability can be questioned?
7.	Do you asses the impacts of the company's actions on different grounds such as social and environmental?
8.	Should there be dedicated department to keep sustainability in check?
9.	What roles can you play to bring sustainability in your company?
10.	Is sustainability promoted in your area?

Appendix 4

Survey Questionnaire:

SUSTAINABILITY SURVEY	
What is it?	
The survey is intended to find factors that create highest impact in the society and fight against it.	
To what degree is sustainability followed in your company?	
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	
Low	High
COMMENT:	
Is sustainability important to you and the sector?	
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	
No	Yes
You are involved in...	
Production	<input type="checkbox"/> Yes <input type="checkbox"/> No
Distribution	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sales	<input type="checkbox"/> Yes <input type="checkbox"/> No
Transportation	<input type="checkbox"/> Yes <input type="checkbox"/> No
Handling and Packaging	<input type="checkbox"/> Yes <input type="checkbox"/> No
Inventory	<input type="checkbox"/> Yes <input type="checkbox"/> No
Please rate the amount of wastage created in your area in proportion to the volume,	
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	
High	Low
Primary Reason:	
To what degree is wastage caused in the production area?	
<input type="checkbox"/> 5% <input type="checkbox"/> 10% <input type="checkbox"/> 15% <input type="checkbox"/> 20% <input type="checkbox"/> 25%	
Primary Reason:	
Special Remark:	
To what degree is wastage caused in the inventory area?	
<input checked="" type="checkbox"/> 5% <input type="checkbox"/> 10% <input type="checkbox"/> 15% <input type="checkbox"/> 20% <input type="checkbox"/> 25%	
Primary Reason:	
Special Remark:	

SUSTAINABILITY SURVEY	
To what degree is wastage caused in the transportation area?	
<input type="checkbox"/> 5% <input type="checkbox"/> 10% <input type="checkbox"/> 15% <input type="checkbox"/> 20% <input type="checkbox"/> 25%	
Primary Reason:	
Special Remark:	
Is there any other area of the company that creates wastages? If yes to what extent?	
<input type="checkbox"/> 0-1% <input type="checkbox"/> 1-2% <input type="checkbox"/> Less Than 1% <input type="checkbox"/> Unknown	
Primary Reason:	
Special Remark:	
Rank the areas below based on the wastage created starting from top,	
Inventory	<input type="checkbox"/>
Transportation	<input type="checkbox"/>
Production	<input type="checkbox"/>
Other (Specify).....	
To what degree do feel attached to the company, in terms of actions and decision making?	
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	
Far	Highly Attached
What are the other factors responsible for the wastage in your area? Any 3	
To what degree are preventive measures taken to reduce wastage?	
<input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5	
Negligent	Highly Concerned
What can you do to move towards sustainability?	
Any other areas that the company needs to focus upon?	