



The Proposed Method of Risk Analysis and Profit Estimation for Exporters of Vegetables and Fruits from Jordan

LA METHODE D'ANALYSE PROPOSE RISQUE ET L'ESTIMATION AU PROFIL POUR LES EXPORTATEURS DES FRUITS ET LEGUMES EN PROVINCE DE LA JORDANIE

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Abstract

This paper aims at developing an effective method of risk analysis and estimating export profitability of vegetables and fruits from Jordan, as a case study. The method analyzes the marketing chain between the farm gate and the first receiver at destination market. Through this process exporter may reduces the risks of the export shipment. The impact of these risks is identified in the Export Analysis Table (EAT) for Agri-business, which seeks to develop three items of marketing information including, an estimate of produce cost, selling price in destination market and additional marketing costs between the farm and first receiver in destination market.

The EAT is an online tool that enables the exporter to evaluate the profitability of his shipment, who is just needed to enter the quantities of vegetables and fruits decided to be export by type of product, the expected sales and purchase prices of the products into the EAT, which directly presents the scenario of operating margin along the marketing chain and in destination markets.

The EAT is an effective method to describe and guide the exporter to update and to standardize with the marketing chain requirements. Numerous products of vegetables and fruits usually export to Arab Gulf or Europe Union Markets could utilize the EAT. EAT gives a flash picture of the profitable of the export products, depending on the range of costs and sales prices given by product in each market. The EAT is intended to help the Agri-business analyze for fresh produce such as fruits and vegetables maximize export opportunities from Jordan.

Key words: EAT; Export; Marketing chain; Cost; Fruit; Vegetable; Profit; Risk; Price

Résumé

Ce document vise à développer une méthode efficace d'analyse des risques et d'estimer la rentabilité des exportations de fruits et légumes en provenance de Jordanie, comme une étude de cas. La méthode analyse la chaîne de commercialisation entre la ferme et le premier récepteur au marché de destination. Grâce à cet exportateur processus peut réduire les risques de l'expédition à l'exportation. L'impact de ces risques est identifié dans le tableau d'analyse à l'exportation (EAT) pour l'agro-industrie, qui vise à développer trois éléments d'information marketing, y compris une estimation du coût de la production, prix de vente au marché de destination et les coûts de marketing supplémentaires entre la ferme et premier récepteur dans le marché de destination.

L'EAT est un outil en ligne qui permet à l'exportateur d'évaluer la rentabilité de son expédition, qui est juste nécessaire d'entrer les quantités de fruits et légumes a décidé d'être l'exportation par type de produit, les ventes prévues et les prix d'achat des produits dans le EAT, qui présente directement le scénario de la marge d'exploitation le long de la chaîne de commercialisation et les marchés de destination.

L'EAT est une méthode efficace pour décrire et guide de l'exportateur de mettre à jour et d'uniformiser les exigences de la chaîne de commercialisation. De nombreux produits de fruits et légumes en général exportation vers l'Europe ou les pays arabes du Golfe marchés de l'Union pourrait utiliser l'EAT. EAT donne une image flash de la rentabilité des produits d'exportation, selon la gamme des coûts et des prix de vente donné par produit dans chaque marché. L'EAT est destiné à aider l'entreprise Agri-analyse pour les produits frais tels que fruits et légumes de maximiser les possibilités d'exportation de la Jordanie.

Mots clés: Exportation; Chaîne de commercialisation; Coût; Fruits; Légumes; Bénéfice; Risque; Prix

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INTRODUCTION

Export activity is one of the most important marketing channels and best way to increase farms income in Jordan. Export of fresh fruits and vegetables have been rapidly increased during the last two decades, but its values has been changed from time to time and from market to another, due to continuing changes in vegetables and fruits prices in destination markets, which are usually decided during the auction process at one time a day depending on the size of quantities available in wholesale market received from different competitiveness countries. Jordanian exporters and farmers do not easily able to decide if they are on the right way or not, because of the risky nature of agribusiness activities (Qat and Abu Al Sondos, 1994).

Reducing the losses of agribusiness in Jordan need flexible and an effective method for evaluating export risks at the individual enterprise level particularly in exporting fresh fruits and vegetables either in traditional or new markets. In the light of export fresh fruits and vegetables from Jordan, identifying items of useful information related to cost of produce, selling price in the destination market, and an incremental costs of marketing between the farm and the first receiver in the destination market, will help exporters to improve the process of taken decision about the time of exports, a kind commodities chosen, the destination market depend on the result of net profit calculated by the new rapid techniques.

This paper covered five main issues related to operating margin of export shipment and its risk analysis, the first one is sources of risk, which describes information needs as applied to fresh fruits and vegetables exports from Jordan to the Gulf and Western European countries. The second issue explain designing the Export Analysis Table (EAT), introduces and describes the uses of the (EAT). The third issue explained the developing and updating methods for (EAT). The fourth issue describes the insights gained from the application of the table to recent data. The fifth issue is conclusion and highlights policy implications in agribusiness export at the national and individual enterprise level.

Objectives

The main objective of this paper is to introduce simple and rapid method for risk and cost analysis by design and propose an Export Analysis Table (EAT) for fresh fruits and vegetables, which can be undertaken and used at the individual export enterprise level.

Justifications

- Gain insight into the potential for profitability of selected traditional fresh fruit and vegetable exports from Jordan.
- Application of the Export Analysis Table (EAT) will assist the export enterprise to derivate and easy measure the operating margin of profitability, and analyze breakeven wholesale and destination prices.
- Performed on a regular basis as an informative service for individual enterprises in assessing their particular market opportunities.

Study Limitations

This study is subject to a limitation and might be explored in future research. There are a few previous studies in this field, lack of information sources for exporters and Inadequate international marketing information related to the export requirements and linkages to buyers. The export sector is still suffering from absences of agribusiness' databases, profit margin sheets and sustaining program for promotions and development export of fresh fruits and vegetables from Jordan.

1. PREVIOUS STUDIES

There are quite a few but noteworthy empirical attempts made by the researchers in this field. Here are some of these studies:

Magnani, Assad, and El Habbab (2004) illustrate Jordanian Marketing System for Fresh Fruits and Vegetables. They focused on marketing and production linkages for fresh fruits and vegetables in local and export markets. They found out that few exporters have taken the necessary steps to establish market linkages with export buyers. It requires direct contact with prospective buyers through trade exhibition, market study tours, or other means to identify buyer needs (variety, quality specifications, price, volume, timing, payment terms, etc.).

Franklin, Stephen & Sattar (1994) indicate in their paper, that Jordan has unique opportunities for exploiting international trade in fruits and vegetables. The researchers recommended to take advantages of these opportunities Jordanian enterprises and must be effectively linked to the global network. This a strategy for increasing investment in Jordan's fruit and vegetable exporting sector is a mean for increasing the sector's contribution to the national economy in terms of value-added, export earning and employment generation.

In his thesis, Qat (1991) found that information is a valuable resource for private and public sectors to improve the decision-making process, dealers in agriculture marketing sector need accurate, timely, quality information. It will be very useful for them to improve the result of fruit and vegetable export efforts, practically for the neighboring markets. So, lack of information increases the level of risks and reducing the profit margin

of agriculture marketing institutions in Jordan.

2. SOURCE OF RISK

It is wide understandable among researchers and specialists in agricultural marketing that Jordan has potential to increase profitably of export fresh fruits and vegetables. Jordan can produce most of the vegetable crops throughout the year and produce citrus crops in winter season, particularly in the region of Jordan Valley as well as able to produce most of fruit crops in the summer season at highland areas in Jordan (Al- Bagain, 1993).

The trends of foreign trade indicated that Jordan has a good ability and competitive advantage in the export of surplus for vegetables and fruits. But still a few firms are vertically integrated to serve specific export markets from production onwards; most firms in the sector are very small by international standards (Franklin, Stephen and Sattar, 1994).

Jordan has geographic location in the middle of Arab region and close to the imported markets as final destination especially in the Arab gulf countries. Jordan also is characterized by the Jordan Valley, lower costs of production inputs, agricultural labor force and abundant production of some crops such as tomatoes. Changing product quality to fit the needs and market competition in foreign markets is very useful for small and large firms (Cavusgil and Kirpalani, 1993).

In spite of these advantages in Jordan, exporting vegetables and fruits is still suffering from many marketing problems such as weakness in export growth, weakness to maintain its traditional markets, absence of agricultural policies to support exports, lack of timely and accurate information about current prices in the destination countries and changes in marketing costs. This situation leads to increase the element of risk and uncertainty, because of the lack of clear mechanism to calculate the effect of potential threat to the export of fresh fruits and vegetables, and the impact of the risk of agribusiness process. In this case, what can be done is to develop a scientific method to determine the results of possible expected actions, and identify sources of potential risks in the exporting fresh fruits and vegetables from Jordan.

The private sector needs to produce competitive products, as well as improve product quality and post-harvest processes through optimum utilization of available resources, application of new producing technologies and harmonizing with, or achieving international standards (JNCT, 2000).

It is important to describe the sources of potential risks of exporting fresh fruits and vegetables, which can be summarized into three categories of information use to analyze export risks and costs suggested in the following issues:

- Estimate the total cost of production using the unit cost of produce, and wholesale price or the prevailing farm gate price. For the purposes of marketing costs in the use of risk analysis, should be treated as a function of the production cost of marketing. This means the need for this process to make an effort to identify the elements of the cost of production before harvest.

- Estimate the total revenue of export by using the selling prices in destination markets, as a matter of fact foreign currency risk must be defined and measured before setup the shipment, (Adler and Dumas, 1984). Also, it should be taken into consideration that any one can influence on market prices at the destination market.

- Most frequently gathering or recorded costs of marketing. This includes the cost of production and marketing, starting from purchase the produce for export up to deliver it at the first receiver in the destination market. The first receiver is the first business entity associated risk of produce is transferred.

The above mentioned three categories can be presented among stages of export process for any shipment of fruits and vegetables from farm gate in Jordan to the end shipment at first receiver in destination market. This explains the chain of marketing costs of fruits and vegetables. It can appear in a guidance approach throughout marketing information system to improve export marketing performance (Ezirim and Maclayton, 2010). It can be done by designing an electronic spreadsheet table to document several marketing stages, via transfer fruits and vegetables products from the farm gate to the first receiver at the destination market.

At each stage in marketing chain, while moving from the farmer to the first receiver, the costs and uncertainty risks associated with the shipment accumulate to include all previous risks and costs. Hence, along of a shipment is, the higher of real costs and risks, the exporter must bear until all marketing stage of transfers achieved in certainty way, starting from farm gate or from local wholesale market to the first receiver in destination market. Succeeding export business require to use marketing information system provide information about different types of destination markets (Katsikeas, 1994).

2.1 Marketing Chain to Arab Gulf Markets

The marketing chain for most products usually export to the Arab Gulf markets typically begins with purchase of the products in the Amman Wholesale Market for vegetables and fruits. Products are brought there by mini-vans (size 2 -3 tons) and exporters purchase the entire mini-van and have the goods transport to their workshop (packing house). In some cases, products may purchase from the farm directly to exporters' workshop. Thus, the most common arrangement for exports to the Arab Gulf markets arrange by wholesalers for the exporters to have the produces shipped directly from the farm to the exporter's workshop.

The preparations are undertaken at the exporter's workshop, such as grading, packaging, taping and securing produce in the boxes then in the trucks. In some cases, produce is transferred directly from the mini-van to the refrigerated trucks without any repackaging or other post harvest handling.

2.2 Marketing Chain to Europe Markets

Jordan's exports of fresh fruits and vegetables to Europe markets are mostly shipped by air and the majority of exports during November to March, and grapes during April to June. Limited quantities of other vegetables are also exported over the year.

The marketing chain for most produce to Europe markets typically begins with the arrangement to purchase a future harvest of currently growing produce on a farm, in many cases the farm may be owned by the exporters themselves. Also, the Amman Wholesale Market is used as a source for the produce needed to complete a shipment. Produce is transferred to the exporter's workshop, which is often located on the exporter's farm or near a farming area e.g. Jordan Valley. The produce is prepared for air shipment to Europe markets in three stages according to the condition of quality and uniformity standards; first stage is the sorting and grading of produce. Second stage is box packaging of the produce. The third stage is related to the wooden pallets of the boxes transferred to the airport cargo facility.

On the other hand, over 90% of all Jordanian fresh fruits and vegetables exports are to the Arab Gulf region, the main commodities of fresh fruit and vegetable usually exported to the Arab Gulf countries include tomatoes, squash, peppers, eggplants, oranges, watermelon and limited quantities of other fruit and vegetable. The primary mode of transport is refrigerated trucks. The rest of fresh fruit and vegetable exports are to some countries in the European Union include peppers, cucumber, grapes, citrus and other varieties. The transport processes of exports for Arab Gulf and European countries are described in detail as follows:

2.3 Transportation to Arab Gulf Markets

Produce to the Arab Gulf region goes on refrigerated trucks, which are rented from trucking agencies. But there is no commitment agreement between the exporter and the trucking agency based on a single price or mechanism of transport of the goods. Trucks are mostly rented in very short time depending on the changes of oil prices. The single price usually includes all fees and expenses, from the workshop to the delivery point at the destination, for that shipment. It takes about 24 hours to load the truck and between three to five days to travel time from Amman to Riyadh Market in Saudi Arabia or Dubai market in the United Arab Emirates. Trucks are also loaded within 24 hours of arrival in the destination wholesale market. Some exporters inform their trucks to wait outside destination wholesale markets like Dubai or to change the destination market at the end

moment, they hope for getting "better" prices. Delays, deliberate or not, can be a major source of risk.

Most exporters sell their products by agents in the destination Wholesale Markets. These agents sell the products on a commission basis and sell through the wholesale market Auction, which convenes at specific times for example at 5.00 pm daily for six days a week excluding Friday. The cash receipts from the sale are used to pay the trucker and secure the agent's commission and other expenses. If the cash receipts from the sale are not sufficient, the agent then indicates that on the return invoice and the exporter makes up for the difference.

The cash receipts from the sale verify depending on the function of supply and demand and quality of produce at delivery. So if the net revenues are positive, the importers are remitted to the exporters. In this case, the most significant source of risk is the selling price that the agent is able to secure.

2.4 Transportation to Europe Markets

The wooden pallet is taken to the airport usually a few hours before the flight's scheduled departure. Royal Jordanian, by virtue of having the most direct flights and the cheaper rates, is the air carrier of choice. In the few weeks of higher export volume, exporters use other air carriers which tend to be more expensive. Exports to Europe markets include both cost and freight (C&F), insurance is not an issue and commission basis. In the cost & freight, the title of ownership of the produce changes at the destination to the airport warehouse. But in the commission basis, the exporter remains the owner and also bears all the risk throughout the sale process until the produce is sold by the agent / importer in the destination market (Garcia, Hosni and Saadi, 2003).

3. Export Analysis Table (EAT)

The Export Analysis Table (EAT) aims at helping the vegetable and fruit exporter to quickly and efficiently calculate the profitability of a particular shipment opportunity. This can be done by providing the exporter three kinds of information:

- The quantity of exports.
- The expected or realized wholesale prices.
- The expected destination selling prices.

This information can be entered in the INPUT area of the table to calculate the profitability. Hence, the costs of marketing have already been incorporated in the table, using common costs (the mode), which mean the most frequently occurring costs, as the process is described clearly in the next stage.

The output of EAT is answered by three key questions related to elements of risk taking and profitability:

- 1) What is the expected operating margin (Revenues - Operating Expenses) for one shipment or set of shipments?

2) At a given wholesale price, what is the minimum destination selling price that the exporter must request in order to reach the breakeven? If he obtains a selling price higher than the breakeven, his operating margin is positive.

3) At a given selling price. What is the maximum wholesale price that the exporter can afford to pay the farmer? If he obtains a wholesale price that is lower than the breakeven price, his operating margin is positive.

For each of the three questions listed in the above, five scenarios are suggested, but a scenario is a possible outcome of an export action, the first scenario examines the possible outcome as intended. The second through the fifth scenarios examine selected risk factors that can affect the outcome in the first scenario.

They are a measure of how much the first scenario outcome could differ if certain events occur, in each situation. The bench mark to compare is the base scenario, which is in a sense an estimation of the actual outcome expected by the user of the table. The concepts of five scenario actions are summarized as follow:

1. The first scenario is the base case that examines the prices and costs as input by the user or exporter.

2. The second scenario estimates the impact of a shipment delay on the operating margin. A shipment delay is likely to reduce the quality of fresh produce, and this cause drops the selling price about 20% in destination market. In this case, exporter has to keep minimum standards for produce quality, maturity, and uniformity within packages. This provides orderly marketing and equity in the marketplace and protects consumers from inedible and poor quality produce (Kader, 2006).

3. The third scenario tries to gauge the impact of poor quality produce on profitability, because the poor quality produce may be a result of any number of factors including, poor sorting or grading, poor packaging and so on. And these cause approximately 10% wastage and drop the selling price about 5% in destination market.

4. The fourth scenario measures the impact of a saturated destination market where supply exceeds demand significantly. This is simply market forces at play, beyond the control of the exporter, and this cause drops the selling price about 10% in destination market.

5. The fifth scenario measures the impact of high demand in the destination market, where demand exceeds supply, on profitability. Again, this is simply market forces at play, except that this time they favor the exporter. And this cause increases the selling price about 10% in destination market.

The inclusion of these scenarios is intended to highlight the essence of risks taking, in that the outcome can be worse or better than the expected outcome. Any number of additional scenarios can be evaluated using the EAT. This would be done by appropriately modifying the table to reflect a scenario. The way to modify the table is explained in the user manual.

Export Analysis Table (EAT) is a computer spreadsheet program, which uses with Excel Software for destination markets in both area Arab gulf and Europe countries. Each EAT has a summary page and five analysis areas for the five scenarios. Export Analysis Table (EAT) has been designed for use by an individual exporter. The use of EAT as a quick and efficient method to gauge the profitability of a specific export opportunity has just been described. A second use is to gauge the overall profitability for a product or destination for a particular shipping season or year. Hence, the exporter, using the tool can determine if a particular product can be profitable to a particular destination for that season.

Once the exporter satisfied that the EAT has the modal costs for that season, the resulting analysis is a fair representation of possible outcomes. To the exporter, the analysis responds to the key question, is the sum of profitable outcomes likely to exceed the sum of the losses for that season for the product and destination under consideration. The exporter can examine the breakdown of the costs occurring in the venture, this can be done by examining the percentage breakdown of costs at each stage and the cumulative percentage costs for each additional stage of transfer of goods, and this is done for each of the five scenarios examined.

An important implication of EAT analysis is that the entrepreneur, under certain circumstances, should be willing to incur higher costs, to maintain quality, at stages further along the marketing chain, or not undertake the shipment at all.

4. DEVELOPING THE DATABASE AND UPDATE METHODS

This section describes the methods of developing database, presents the modal information obtained and discusses ways of updating the information and the EAT:

4.1 Developing the Database

The Database of vegetables and fruits marketing information has to be established and updated by informal organization specializes in improving and enhancing the opportunities and increasing the net profits of vegetables and fruits exports by providing currently Data for exporters to improve their ability in taking certainty decisions with the best options. The information might be used such as wholesale prices from wholesale markets recorded by government employees, and also wholesale prices in destination Markets timely issues by government employees. This information has to disseminate on daily basis through mass media newspapers, radio and internet to a wide spectrum of beneficiaries (Dahatreyulu, 1997).

On the other hand, database has to provide data collected and estimated about export fixed costs and overheads, which could be used in the template (EAT). The useful of Database is to determent if the produce

export business obtains higher or lower margins profit than other businesses, viewing operating margins measure the profitability.

4.2 Data Derived for EAT

The marketing costs of vegetables and fruits are most frequent data reported or gathered for the stages of marketing channels and other assumptions. Marketing costs usually obtains throughout the interview process, which could be consider the basic information to construct the EAT, the production costs, wholesale and destination prices and other assumptions can be viewed as risk factors (Sattar, Abu-Sondos and Hadi, 1994).

The following items of marketing costs and export information established in EAT, for proposed export of one or more fresh vegetables and fruits products shipped by Arab gulf or to could be used by exporters:

- Exchange currency rates: used to change selling prices in destination country currency with the prices of origin country currency.
- Sales in Kilograms: usually most of Jordan' exports to near distance like Arab and east Europe countries transport by trucks, but few other exports to Europe countries transport by plane.
 - Local Regulatory Costs:
 - 2% Cost of Produce for Amman Municipality Fees.
 - 0.5% JD per truck, Certificate of Origin.
 - Transport to Workshop = 0.1% JD / KG.
 - Post Harvest Labor = 0.5% ID / KG.
 - Post Harvest Materials = 0.4% JD / KG.
 - Palletizing cost: 0.6% JD / KG
 - Costs of laboratory analysis of pesticide residues = 0.6%
 - International Transports by assumption markets:
 - Annual rate estimation at 7000 Rial as total transport cost for UAE market by Turks.
 - Annual rate estimation at 6000 Rial as total transport cost for Qatar market by Turks.
 - Annual rate estimation at 2000\$ as total transport cost for Iraq market by Turks.
 - Annual rate estimation at 450 Dinar as total transport cost for Kuwait market by Turks.
 - Annual rate estimation at 650 Dinar as total transport cost for Bahrain market by Turks.
 - Annual rate estimation at 800 Rial as total transport cost for Oman market by Turks.
 - Annual rate estimation between 5000\$ – 10000\$ as total transport cost for Europe markets by Turks.
 - Annual rate estimation between 0.6\$ – 0.9\$ per Kilogram for Europe markets by Plane.
 - Destination Unloading = 0.3% JD per KG.
 - Destination Commission = 3% of total sales invoice.
 - Wastage = 2 % of quantity multiplied by the sum of all unit costs.

- Cash Flow Financing = 14 days per truck load at 10% rate sum of all costs up to international transport.

Note: higher rates tend to occur in the months of April to August, and so on for other Arab gulf countries.

Any other costs doesn't mentioned above can be added to the EAT by user or exporter himself, and also can adjust and modify any current changes, that could give accurate calculation export net profit for proposal shipment, EAT might be used by exporter as a rapid source of operating margin profits, and a useful reference for informing export decision making based on its current information.

4.3 Update Information for the (EAT)

There is a need to update the EAT costs on a regular basis due to a time progresses. Hopefully, this updating could be reducing the information gap and then the marketing risks. So, the exporter may find very accurate source of current and renewal data, such as destination prices, on a regular basis. Information and updating the EAT, the relevant data for this exercise, the type of data sources suggested as a main providing the prices and marketing costs as follows:

- Private businessmen should be the primary source of information to update the modal costs in the EAT. A businessman is most accurate source of information on the costs of doing business.
- The Marketing Information Department at Agricultural Ministry collects prices information on a daily basis from the Amman Fruits and Vegetables Wholesale Market. The high prices of a product on given day can be used as an approximation of the unit cost of produce for exports. These prices can be made available to the exporters as well as analysts on a routine basis. The exporter should be careful in the use of this information as the wholesale prices, which usually collect on the purpose of commission fees and other factors. Marketing information system is very important part in export marketing performance to measure its effectiveness with s of beneficiaries' satisfaction, such as exporters (Al Tae and Ajarmeh, 2008).
- Destination Market Contacts can be used to acquire relevant information published on a timely basis to Amman office for distribution. A simple system can be set up to obtain prices from the destination countries practically in traditional markets by arrange with an entity government or private office to assign a person responsible to gather prices during the highest shipping season of produce from Jordan. The information would be captured on time and send to exporters by online process. Once the process of data has become providing smoothly, step by step with appropriate modifications can be replicated for any number of costs in destination markets.

5. THE RISK MATRIX TABLES

The Risks Analysis generate two types of information, the operating margin and the breakeven prices for a

produce in wholesale and destination markets, which are mentioned at the end of scenarios of export analysis tables EAT in Appendixes 1-5, which used the annex2 templates

as sample cases in risk analysis template RAT. (Sattar, Abu-Sondos and Hadi, 1994, p.33), these are summarized in the following table:

Exports Analysis Tables of Operating Margin Profits

Scenarios / Price	First Receiver Price		Cost of Produce JD/kg	Breakeven		Operating Margin
	fc / kg	JD/kg		Selling Price	Wholesale Price	
Base Case	4.00	0.760	0.450	3.13	0.62	0.22
Shipment delay						
• selling price down by 20%	3.20	0.608	0.450	3.10	0.47	0.03
Poor quality produce						
• 10% wastages and selling price down by 5%	3.80	0.722	0.450	3.12	0.58	0.18
Destination market saturated						
• selling price down by 10%	3.60	0.684	0.450	3.12	0.54	0.13
Destination demand high						
• selling price up by 10%	4.40	0.836	0.450	3.14	0.69	0.29

These estimations give a snapshot view of possible profit or loss outcomes. A review of Risk Matrix Tables by using electronic spreadsheet program should consider the following:

- A positive margin for a particular combination has to cover the fixed costs and overhead before earning a profit.
- The exporter should estimate the percentage of probability of his exports, in the cells that have a positive margin. If the probability is going to be low, exporter is likely to make a loss on this shipment if delivered to that destination market.
- Margins may differ from produce to another as specific costs for that commodity. The matrix analysis mostly uses two basic modal costs, the first for Arab Gulf States and the other for Europe countries.
- The breakeven selling price should give the exporter a brief idea of the range of prices at the destination market, and reflect the percentage of difference between the highest and the lowest breakeven selling price, If the breakeven selling price spread is more than a 100%, there is a need to be cautious about any long term commitments to that product and destination, to avoid any high risk observed.
- The breakeven purchase cost should give the exporter a brief idea of the range of the unit cost of produce, and reflect the percentage difference between the highest and the lowest breakeven unit purchase cost (wholesale prices), If the breakeven Purchase Cost Spread is more than 100%, there is a need to be cautious about any long term commitments to that product for that destination, to avoid any high risk observed.
- The breakeven spreads is categorized as low, medium, high, and very high. the convince approach suggests, if a breakeven spread lies between 0 up to 19 percent is low risk, 20 to 49 percent is medium risk, 50 to 89 percent is high risk, and 90 percent and above is very

high risk.

CONCLUSION

The main results of this paper as follows:

- Suggest a new a method for enterprise level risk analysis for Vegetables and fruits exports from Jordan.
- Flexible application to update information needed for the risk analysis using the items of EAT.
- Offers some insights into the profitability process of selected fresh produce exports from Jordan, which guide for careful examination of each export ` opportunity.
- EAT helps the exporters to be more awareness about the destination prices, competitive markets, necessary marketing costs, profitability of products and the breakeven prices and costs.
- The outcomes of the What-If risk analysis could reduce the risks of vegetables and fruits exports from Jordan.

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Appendix 1
Export Analysis Table EAT- Electronic Excel Sheet
 Scenario 1: Base Case

Input Area						
Sales in Kilograms	10,000					
First Receiver Price (in fc / kg)	4.00					
Exchange Rate (fc / JD)	0.190					
Income Statement						
Revenues						
First Receiver Price (JD / kg)	0.760					
Sales in Kg	10,000					
Total Sales						
7,600						
Operating Expenses						
	C1	C2	C3	C4	C5	
Cost of Produce (JD / kg)	10,000	0.450	4500	75.72%	75.72%	
Local Regulatory Cost	10,000	0.006	60	1.01%	76.73%	
Transport to Workshop	10,000	0.001	10	0.17%	76.90%	
Post-harvest Labor	10,000	0.005	50	0.84%	77.74%	
Packaging / Labels	10,000	0.004	40	0.67%	78.41%	
Cold -Storage	10,000	0.002	20	0.34%	78.75%	
Palletizing	10,000	0.006	60	1.01%	79.76%	
Transport to Export Point	10,000	0.000	0	0.00%	79.76%	
Transport Agent Commission	10,000	0.000	0	0.00%	79.76%	
International Transport	10,000	0.076	760	12.79%	92.54%	
Destination Regulatory Cost	10,000	0.000	0	0.00%	92.54%	
Destination Unloading Cost	10,000	0.003	30	0.50%	93.05%	
Destination Commission Cost	10,000	0.023	228	3.84%	96.88%	
Wastage	200	0.576	115	1.94%	98.82%	
Cash Flow Financing	10,000	0.001	10	0.17%	98.99%	
laboratory Analysis Cost	10,000	0.006	60	1.01%	100.00%	
Other Operating Expenses	10,000	0.000	0	0.00%	100.00%	
Total Operating Expenses						
5,943						
Operating Profit (Loss)						
1,657						
Important Financial Statistics						
Breakeven Selling Price (in fc /kg)	3.13					
Breakeven Wholesale Price (in JD /kg)	0.62					
Operating Margin	0.22					

Notes:

- C1 Quantity of export (Kilograms)
- C2 Cost of operating expenses (JD/ kg)
- C3 Total Cost of exports
- C4 Percentage of operating expenses
- C5 Percentage cumulative of costs