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Analyzing the Challenges Facing the Egyptian Producers in Exporting Agriculture Products Using the Viable System Model

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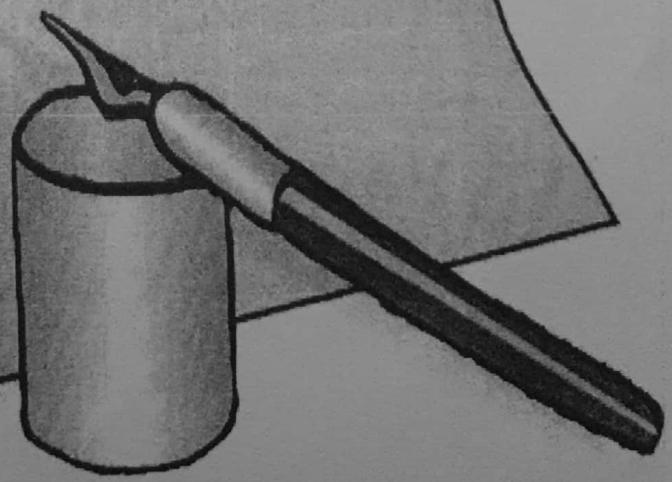

Analyzing the Challenges Facing the Egyptian Producers in Exporting Agriculture Products Using the Viable System Model

Abstract

The challenge of globalizing markets is nowhere greater than in the primary food sector. GLOBALGAP (formerly known as EUREPGAP) has established itself as a key reference for Good Agricultural Practices (G.A.P.) in the global market place, by translating consumer requirements into agricultural production in a rapidly growing list of countries – currently more than 100 on every continent.

Egypt's trade profile is characterized by huge trade deficits. One of the methods for decreasing the deficit is through increasing exports. Exports of Egyptian agriculture goods increased but not to the extent to play an important role in decreasing the deficit. The challenge for Egypt is to maintain and expand agricultural production for domestic and export markets while at the same time adding value and employment through the development of more agriculture-based processing activities. For the 70 percent of the world's poor who live in rural areas, agriculture is the main source of income and employment. But depletion and degradation of land and water pose serious challenges to producing enough food and other agricultural products to sustain livelihoods here and meet the needs of urban populations.

The agriculture land is 38% of the total land area in Egypt (World Bank statistics,2007) Egypt could take an opportunity by increasing export of fresh vegetables and fruits but the environment is highly complex and dynamic facing future challenges reflected in the GLOBAL-GAP ; it is compulsory that any exporter from any country to be certified by the GLOBAL-GAP. Today organizations have to deal with high and increasing levels of internal and external complexity that challenge traditional models of management and control; to be competitive they must be able to reach high degrees of reactivity, flexibility and adaptively. The question of the viability of the system must be examined and dealing with complexity and dynamism needs new methodologies. This paper used the Viable System Model as a Cybernetic audit tool; the viable system model is used to diagnose the Egyptian producers, and detect the difficulties to make specific recommendations for improving performance of producers to enable them to be viable which means the ability to survive and capability of responding to environmental changes; GLOBAL-GAP major check points.

Introduction

Agriculture remains one of Egypt's most important sectors and continues to achieve steady growth rates of 3-4% per year. (US Commercial Service, 2011) The agriculture sector contributed roughly 15% to Egypt's GDP in 2005, but this share has declined recently to 14% in 2009 and is expected to continue to fall in the future. The number of Egyptians employed in the sector is 31.2% of the total employment (World Bank Statistics, 2009).

The country's balance of trade account had recorded a $12 billion deficit in the fiscal year 2005/2006, a 15.7% rise compared with the previous fiscal year. The value of Egypt's total imports hit $30.4 billion last fiscal year, an increase of $6.2 billion; a 25.8% hike compared with the previous fiscal year. Meanwhile, the value of Egypt's total exports amounted to $18.4 billion during fiscal year 2005/2006, an increase of $4.6 billion, which is a 33.4% increase compared with the previous fiscal year. Now Egypt's 2010 exports trade grossed over US$29 billion, a 22% surge from the previous year's level. (Okdah, 2007)

During the 1970s, despite substantial investment in land reclamation, agriculture lost its position as the dominant economic sector. Agricultural exports, which accounted for 87% of all merchandise export value in 1960, fell to 35% in 1974 and to 12.57% by 2009. Agricultural production is intensive and yields are high, but only 3% of land is arable. In spite of land reclamation, the area under cultivation remains about constant because of urban and industrial expansion. With no land expansion and population growth, Egypt will remain one of the world's largest food importers. Some 95 % of local production is consumed domestically despite the increased emphasis on cash crops for export. (Lewis, 2008)

Egypt enjoys a significant comparative advantage in the production and export of high value horticultural products. This comparative advantage is based on a number of factors, including favorable agro-climatic conditions, physical closeness to important markets and counter-seasonal production capabilities.

The farming practices employed for Egypt's principal horticultural crops, grown by hundreds of thousands of small and medium-sized holders principally for domestic demand, can be improved and thereby increase rural income. Costs can be reduced, yields increased, and quality improved through the introduction of even low-technology, low-cost techniques. This has not been accomplished because of a lack of well trained horticulture extension advisers.

One of the most urgent of these specific problems is the impending imposition of the GOBAL GAP. This embodies food quality assurance measures combined with social and environmental responsibility standards. Failure to meet those standards will deny Egyptian horticultural products access to current markets and will prevent entry into new markets.

Understanding the GLOBAL-GAP

GLOBALGAP is a private sector body that sets voluntary standards for the certification of agricultural products around the globe. The aim is to establish one standard for Good Agricultural Practice (G.A.P.) with different product applications capable of fitting to the whole of global agriculture.

GLOBALGAP is a pre-farm-gate standard, which means that the certificate covers the process of the certified product from farm inputs like feed or seedlings and all the farming activities until the product leaves the farm. GLOBALGAP is a business-to-business label and is therefore not directly visible to consumers.

GLOBALGAP certification is carried out by more than 100 independent and accredited certification bodies in more than 100 countries. It is open to all producers worldwide.

GLOBALGAP includes annual inspections of the producers and additional unannounced inspections. It consists of a set of normative documents. These documents cover the GLOBALGAP General Regulations, the GLOBALGAP Control Points and Compliance Criteria and the GLOBALGAP Checklist.

As many other on-farm assurance systems have been in place for some time prior to the existence of GLOBALGAP, a way had to be found to encourage the development of regionally adjusted management systems and so to prevent farmers from having to undergo multiple audits. Existing national or regional farm assurance schemes that have successfully completed their benchmarking process are recognized as an equivalent to GLOBALGAP.

The GLOBALGAP standard is subject to a three year revision cycle of continuous improvement to take into account technological and market developments.

Owners of Good Agricultural Practice (G.A.P.) standards worldwide can seek to demonstrate equivalence with GLOBALGAP through an independent benchmarking process. The GLOBALGAP benchmarking process can be compared to a filter system, which qualifies and harmonizes different standards around the globe. Part of the process is a member peer review, whereby members have a six week period to make any objections.

At the end of the approval procedure there is also an independent witness assessment. The farms under assessment must meet the requirements of both the previous and the GLOBALGAP standard. This is guaranteed by parallel audits, which take farm conditions into account.

The standard serves as a global reference system for other existing standards and can also easily and directly be applied by all parties of the primary food sector. The following table shows the certified producers worldwide.

CERTIFIED PRODUCERS WORLDWIDE

Country	Nr. of Certified Producers
Argentina	1059
Armenia	1
Australia	94
Austria	2362
Belarus	1
Belgium	3357
Belize	17
Bosnia/Herzegovina	100
Brazil	578
Bulgaria	9
Burkina Faso	148
Cameroon	13
Canada	50
Chile	2302
China	318
Colombia	559
Costa Rica	296
Côte d'Ivoire	194
Croatia	85
Cyprus	1021
Czech Republic	85
Denmark	79
Dominica	6
Dominican Republic	759
Ecuador	635
Egypt	359
Ethiopia	11
Faroe Isl.	6
France	3006
Gambia	1
Germany	8717
Ghana	871
Greece	11817
Guadeloupe	33
Guatemala	164
Guinea	41
Honduras	14
Hungary	1462
India	1989
Indonesia	5
Iran	1
Ireland	24
Israel	1438
Italy	19327
Jamaica	3
Japan	94
Jordan	16
Kenya	318
Korea (South)	46
Latvia	1
Lebanon	2
Macao	2
Macedonia	15
Madagascar	188
Malaysia	19
Mali	232
Malta	16
Martinique	50
Mexico	98
Moldova	6
Morocco	399
Mozambique	2
Namibia	14
Netherlands	5584
Netherlands Antilles	1
New Zealand	1678
Nicaragua	2
Norway	44
Oman	1
Pakistan	176
Palestinian Territories	149
Panama	31
Paraguay	50
Peru	1185
Philippines	5
Poland	994
Portugal	375
Puerto Rico	3
Romania	48
Saint Lucia	5
Saint Vincent/Grenadines	53
Saudi Arabia	2
Senegal	101
Serbia/Montenegro	36
Slovakia	18
Slovenia	13
South Africa	1882
Spain	19184
Sri Lanka	23
Suriname	1
Swaziland	4
Sweden	17
Switzerland	52
Syria	5
Taiwan	33
Tanzania	74
Thailand	597
Tunisia	234
Turkey	3988
Uganda	39
Ukraine	1
United Kingdom	49
United States	387
Uruguay	43
Venezuela	1
Vietnam	147
Zambia	3
Zimbabwe	14
TOTAL	**102267**

As of April 2010

Table 1: Number of Certified Producers Worldwide, 2010

The number of the Egyptian producers certified with the GLOBALGAP (formerly known as EUREPGAP) evolution is shown below in figure

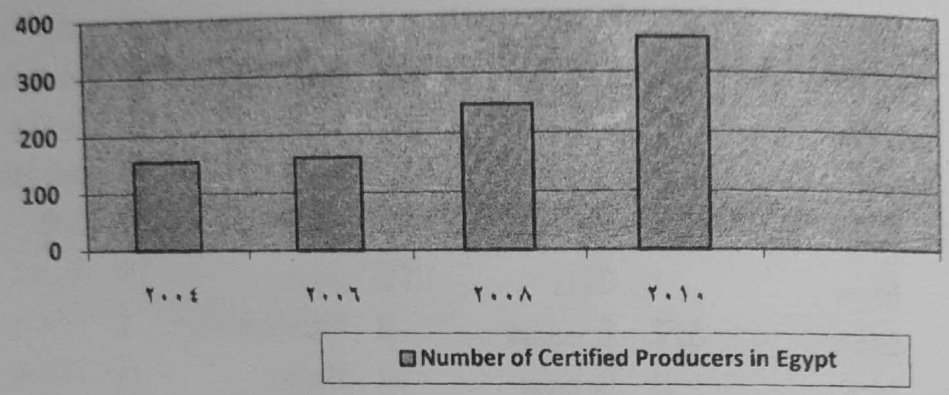

Figure 1: Number of Certified Producers in Egypt From 2004 Till 2010

The above chart explains the relative slow growing rate of the number of Egyptian producers, compared to the most competitive markets to Egypt from the point of view of crop variation, time of production and geographical location to Egypt. This allows us to establish Egypt's position among the competition; the following chart shows the number of certified producers in Egypt and the number of certified produces in Israel

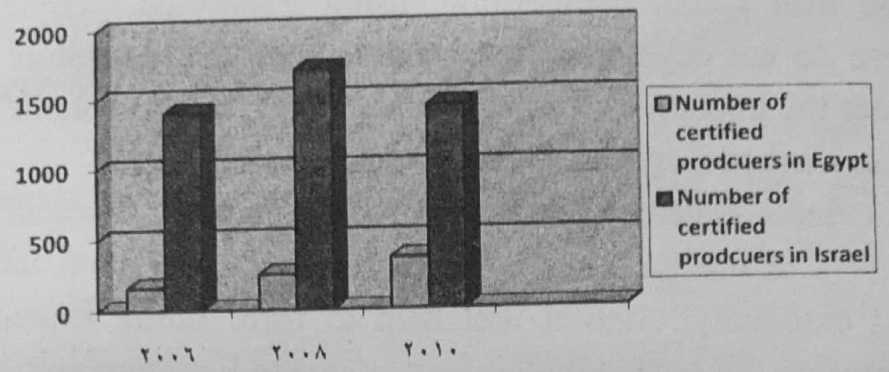

Figure 2: Number of Certified Produced in Egypt and Israel

In Egypt, there are 2 million in desert and 1 million around the Delta planted compared to Israel which is a limited area that has a large number of certified producers. There is an opportunity for the Egyptian growers to decrease the gap between the current position and the future position to be able to meet the GLOBAL-GAP standards.

Research problem

In Egypt, 15% of GDP results from Agricultural; one third of the labor force is engaged directly in farming. Egypt has a comparative advantage in production because of a relatively competitive cost. However, it has one of the lowest rates of increase in achievement of GLOBAL-GAP certified producers. External challenges involve the introduction and satisfaction of the GLOBAL-GAP check points and the capability of the Egyptian producers to follow these standards, increase their exports and boost their economic growth.

Most current research is into how the Egyptian agriculture can deal with global competition, using traditional methods. But these do not capture all the behaviour of the agriculture sector under the impact of external factors. Thus, it is important to find other methodologies to compliment traditional ones.

The viable systems methodology has been chosen to analyse the defects in the Egyptian producers as a system both internally and externally. Also it will help to form future strategies by capturing the essential elements to enable Egyptian producers to be viable.

The research questions are:

1. What are the defects that prevent Egyptian producers from applying for GLOBAL-GAP certification?
2. How could the viable system model be used to diagnose the organizational structure of the Egyptian Producers?

The objectives of my research are:

1. Conduct a Viable System analysis to diagnose the organisational structure of the Egyptian producers.
2. Understanding and defining the difficulties facing the Egyptian producers in implementing the Global-GAP major check points.

General Hypothesis

1. Using viable systems methodology will facilitate the understanding of the current difficulties and the point of weakness of the Egyptian producers.
2. Egyptian producers face difficulties in applying the Global GAP major check points.

Research Methodology

The Methodology

A Theoretical Study

This study includes a literature review using the books, periodicals, researches and studies related to the research, including the .GLOBAL-GAP, EURO-GAP, Egyptian exports of fresh fruits and vegetables, viable system methodology. Also it includes a literature search related to agriculture in Egypt to form a theoretical framework and draft the hypothesis of the research to achieve the research objectives.

Field Study

The subject and limits of study: Egyptian certified producers

The field of the study included the certified Egyptian producers for the following reasons:

- The preliminary study indicated that the certified producers cover a large percentage of the cultivated land in Egypt.
- The Questionnaire focused on the Auditors of the Global Gap in Egypt because of their capacity in evaluating the capability of the Egyptian producers and the necessary strategies for addressing the future variables.

A Comprehensive Survey

The questionnaire (The cybernetic audit) was directed to all the Auditors of the Global Gap in Egypt the list of auditors are as follows:

Names of Auditors
ACERTA
Bureau Veritas Certification
CERES Middle East
Control Union Egypt
Instituto Mediterraneo Certifiaziaone
Moody Inter Egypt
Rina Egypt
SGS Egypt
TUV Nord Egypt

The results of the collection of auditors resulted in analyzing 9 questionnaires giving a fair representation of views.

Sources of data (Secondary data):

Secondary data was collected from references including books, periodicals and previous researches related to the research.

Also websites were used to search for data related to the subject. This data was used to write the theoretical framework of the research as well as building the Viable Systems.

The Viable System Model

Norbert Wiener is the founder of the cybernetics and introduced this approach in his book "Cybernetics: or control communication in the Animal and the Machine" (Wiener, 1948). The approach of management cybernetics was concerned with studying organisational structure and its relationship with the external environment. As a broader definition, it is the science of effective organisation.

Beer developed management cybernetics referred to as "*the viable system*" methodology. During the 1950s Stafford Beer was working as a manager in British steel and had become dissatisfied with traditional methods of organisation. (Beer, 1989) He began studying organisation in the way they functioned, more specifically he looked at the way the human brain organises the operation of the muscles and organs, "*and we will seek the source of effective organisation in the cybernetics of natural processes -the brain itself*".

In 1972 Stafford Beer in his book "Brain of the Firm" built the viable system model (VSM) using the human body and nervous system as an example as the brain controls the human body in order to be viable. (Beer, 1972) His model contained five subsystems. Later in his book "The Heart of the Enterprise" in 1979 he applied the VSM to firms and organisations of all kinds. (Beer, 1979) He later detailed guidelines for managers to use VSM for specific enterprises in "Diagnosing the System for Organisation" (Beer, 1985) In general, Beer used the VSM to understand organisations and improve their effectiveness. Effectiveness according to Beer means that the system should be viable *"to be able to maintain a separate existence"*

which means that it could survive and that means being capable of responding to environmental changes. In order to become viable a system has to achieve requisite variety with the complex environment, it must be able to react to address the future opportunities and threats in the environment.

The Viable System Model (Beer, 1979, 81, 85) is a systems model that can be used broadly to obtain knowledge of an entity's business and more narrowly to compare the performance of different units across an organization on many dimensions.

The viable system model looks at five functions needed to make any system viable or capable of survival within its environment. They are:

- There is an identifiable product which interacts with an environment
- There are prescribed relationships between the various parts of the organisation
- The synergy and decision must be organised to serve the organisation as a whole
- The future of the organization and its environment must be probed
- The identity and coherence of the whole must be preserved.

It is important that the VSM management structure is not being considered as a version of the traditional organization chart which indicates individuals and their formal connections to one another. The VSM provides a framework for looking at the activities supporting different kinds of knowledge and intellectual capital and where they are used.

So the VSM will be used to:

1. Determine the availability of the five VSM systems
2. Define the relation between the system and its environment
3. Probe the future of the fruits and vegetables exports
4. Analyze the current situation of the Egyptian producers

Components of a Viable System

The components of the viable system are represented in the following figure, which represents the 3 elements, the E stands for the environment, O for the operation and M for management. The O, M elements are divided into five interacting systems. They were originally derived from Beer's thinking about the management of the muscles by the brain and nervous system. The viable system is represented in the following diagram

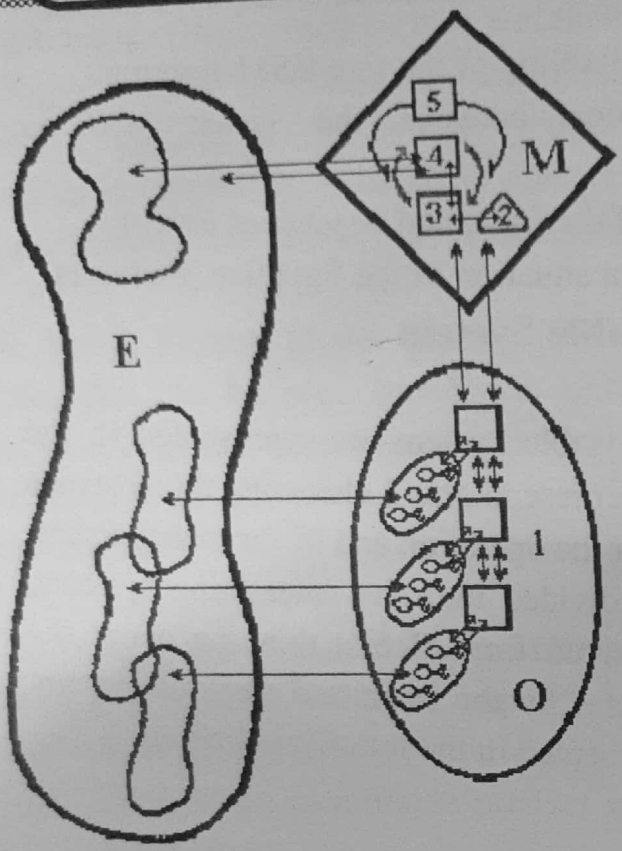

Figure 3: Components of Viable System

The amoeboid shape on the right hand side represents the environment and the system components are divided into five main systems; system one, two, three, four and five. Beer views the five interacting systems as follows:

System one

This system represents the muscles and organs, which refers to the basic activities of the system. In other words System One represents the main functions in the system and it deals with the environment directly. So the operation units try to match the variety of its customers with products they find useful. Efficient operation units and managers develop skills to select the

information they need and ignore the rest while remaining alert to signs of change.

System two

This system represents the sympathetic nervous system, which monitors the muscles and organs and maintains stability. It deals with conflict resolution; it is merely a device for damping the oscillations between the system ones. It focuses on implementing decisions about common services and resources as smoothly as possible. System two keeps track of the information on hand.

System three

In the human form this represents the base brain, which oversees the entire complex of the muscles and organs and optimizes the internal environment. In the organisation form, System three is responsible for resource allocation; the main job of system three is to control the internal functions or operations. *"System three makes executive decisions and relaying requirements from more comprehensive levels such as laws and regulations imposed by outside authorities"*. (Leonard, 1999)

System three Star

A system three star is not separated from system three it performs an audit of the system or maintains quality control to monitor various aspects of the accountability relations between system three and system one. It provides assurance that budgets and financial information, internal control, quality, safety standards and other particulars are in order. (Walker, 1991)

System four

System four is concerned with interaction with the environment for future planning, forecasting and simulation as well as scenario building. According to Beer it is important to have balance between system four and system three and ensure good interaction between them. This represents the mid brain.

System five

System five is responsible for the culture and ethics of the system, and usually represented by a board of directors. The directors are the ones who set polices and take decisions. This is the higher brain function.

In summary Beer considers the system is of three main parts, the environment, the meta-system represented by an ellipse and the operation by the diamond in the previous diagram. The environment represents all the factors outside the system and which could be related to the system. The meta-system represents system 2, 3, 4 and five. Operations represented in system 1. The arrows connecting the system 2, 3, and 4 represents the interacting between the systems to ensure that data coming from the environment to system 4 is balanced with the information coming from the internal environment to system 3 and then plans are set after.

The Viable Systems Method uses several cybernetic techniques such as:

- Variety.
- Homeostasis.
- Recursion.
- Managing Information.

The Concept of Variety

Variety is the measure of the number of different states in a system and it grows rapidly with the complexity of systems. In this regard the law of Requisite Variety is used that *"only variety can absorb variety"*. (Ashby, 1956) This means that to control complex system the controlling system must generate at least as much variety as the system being controlled. *"So to remain regulated the regulator needs to use one or both of the variety management methods namely, variety attenuation and variety amplification" (Beer, 1985). "Regulating refers to the absorption of complexity that the system can generate" (Waelchli, 1989).*

High variety can be attenuated to match the number of possible states the receiving entity can handle. Perceptual apparatus in our minds attenuates or filters the variety of our environment so we see what we look for and filter out what is irrelevant. So firms, whose attenuators filter out important information about their environment, are more likely to go out of business than those which do not. Designing variety attenuators is a skilled process, market research an example of carefully designed variety attenuation. At the same time low variety can be amplified to match a greater number of possible states. So we amplify our own variety to increase our power over our environment so we use our intelligence to amplify the effect of our actions.

So in the research Egyptian producers faces the GLOBAL-GAP check points, they should collect important information about it and then increase their power and capabilities to match the standards. Many management strategies are mixed between adjustments to amplifiers and attenuators.

In reducing the external variety confronting the management managers can use the following methods (Jackson, 2000):

- Structural (e.g. massive delegation).
- Planning (e.g. setting priorities).
- Operational (e.g. management by exception).
- Market research.

In amplifying their own variety mangers can employ the following methods:

- Structural (e.g. integrated teamwork).
- Augmentation (e.g. recruit experts, employ consultants).
- Informational (e.g. management information systems).
- Advertising.

It is useless to provide enough bits in the computer to differentiate every person in the world if your strategies are to market in your own country alone. Thus if Egyptian producers have the capability to produce enough fruits and vegetables to be exported and their policies are only to market locally, then no improvement will result.

So the management of Egyptian producers must translate what should be done to meet the GLOBAL-GAP check points into their production schedule. Problems found in planting and cultivating need to be monitored in a reporting system.

Therefore, the product strategies of fresh fruits and vegetables have to be amplified towards the marketplace by examining distribution channels and information by advertising.

Homeostasis

"It is the capability of a system to hold its critical variable within physiological limits in the face of unexpected disturbance

or perturbation". (Beer, 1994) All systems share the need to be viable. Self organizing systems consist of operations which perform process, management which control the doers and environment in which they function. In order to be viable and cope with its environment, the operation needs to match its variety to that of the environment and in order to manage the operation management needs to match its variety to that of the operation. If these requirements are met the system can maintain homeostasis. This means it can maintain itself in a state of equilibrium. If these requirements are not met the system will become unstable, eventually leading to its collapse. It is crucial to know that the VSM considers an organisation as a whole system which must be in balance with its environment. So as the environment changes, the organisation must respond. This will usually require a change in the operation to balance the environmental changes. The management will also have to adapt as it has to be in balance with the operation, so the management will have to set a way of all the things together to ensure all the parts are working within the same basic ground rules. For example according to previous industry data Egypt is a high risk area and Global Gap manager requests certified producers follow new regulations so the questions of the ability of the producers to apply those regulations should be asked.

Recursion

Recursion, in the Viable System sense, means that the same principles of organisation are embedded at different levels of the structure. As an illustrative example, one can think of the Russian Matryushka dolls whose perfect copies of the same doll fit inside each other. In a sense, it means that viable systems are embedded inside viable systems. This means that many of the functions and relationships recur at each level and that the parts

are the same as the whole. Recursion gives the ability to have a holistic view while at the same time concentrating on certain system.

So when dealing with a problem it is important to sketch the system in focus as a series of nested viable systems, this enables the understanding of every aspect of the system in focus. Each level consists of complete viable systems which are whole and must function as autonomous entities.

Managing Information

Traditional management based upon hierarchies does not enable information to be managed effectively as they are primarily concerned with financial information or data which is never used, while VSM provides the right information at the right place in the right time. As managing information in the VSM is based on performance indicators which measure whatever is important within each operational unit; this is done in a period determined by each operational unit, so problems are identified as soon as they happen.

Modelling using the viable system

There are several advantages when modelling using VSM (Jackson, 1989):

- First the recommendations endorsed in the model do not tightly prescribe a particular structure they are concerned with, but define a system and enable it to maintain its identity rather than the variable relations that can develop between components integrating particular system.

- Second the model demands that attention should be paid to the sources of command and control in the system.
- Third the model offers a particularly suitable starting point for the design of information systems in organisations.
- Fourth the organisation is represented as being in close interrelationship with its environment both influencing it and influenced by it.

This seems to be exactly what is needed for this research. The VSM can also be used very effectively as a diagnostic tool to make specific recommendations for improving performance of organisations, as it reveals the point of weakness in the system and suggest solutions to cure them.

Modelling Using the Viable System

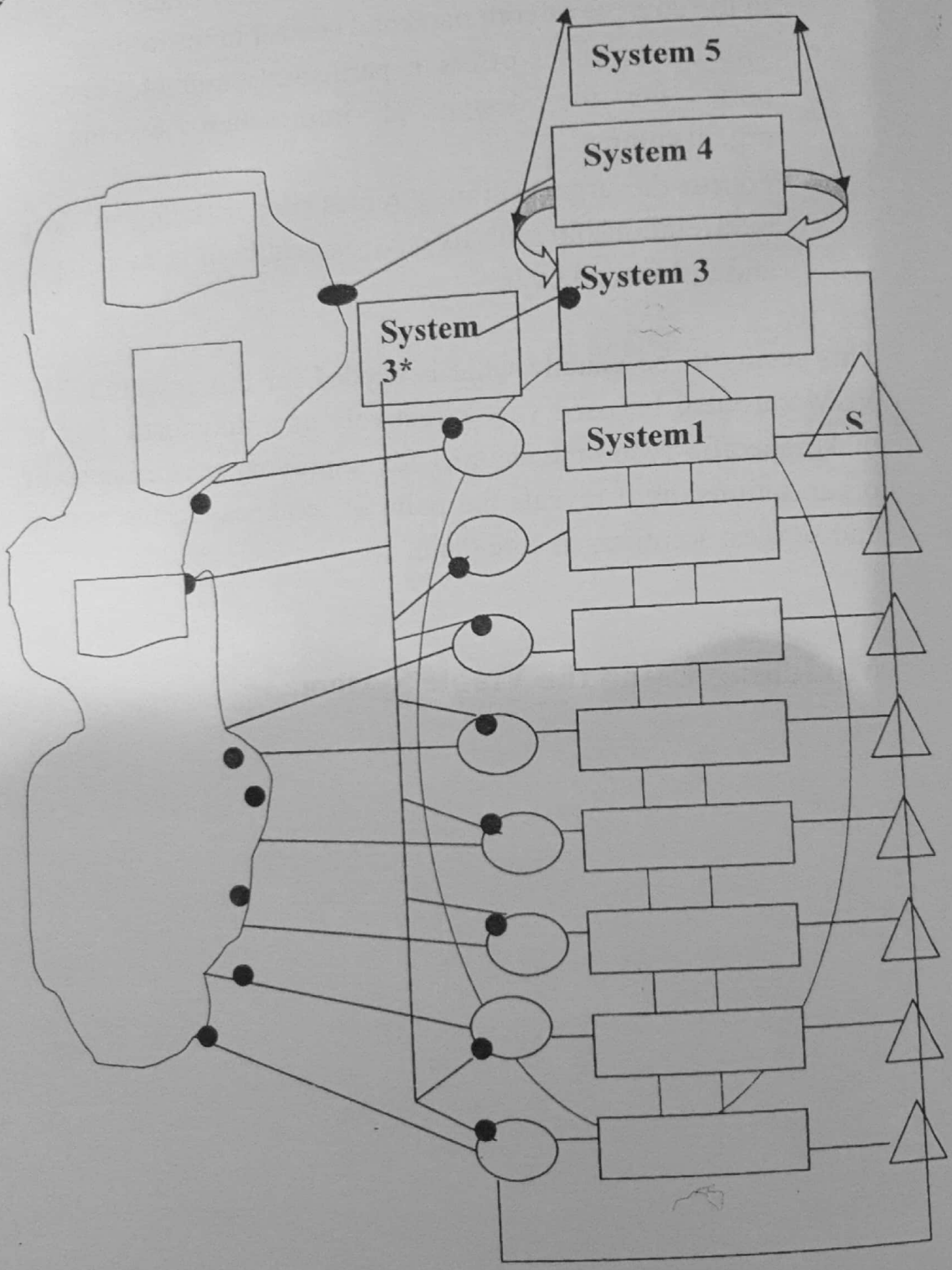

Figure 1: The Viable System Model

When beginning a VSM analysis, the first step is to identify the System-in-Focus with its identity and purpose and to situate it in the context of the recursions above and below it.

The recursion three is the Certified Egyptian Producers which is embedded in higher viable system which is, recursion two; the Auditors of the Global Gap, the Auditors of the Global Gap are embedded in higher viable system, which is the Global Partnership for good agriculture practice, considered to be recursion One.

Figure 5: The recursion

The Cybernetic Audit

By a cybernetic audit, I mean I examined the recursive structure shown in figure 4 and by asking questions at all levels, I tried to understand the organisational structure. By doing this I could

come up with a set of questions that would form the basis of my questionnaire.

Questions Arising from the Cybernetic Audit

The following questions examine the certified producers' structure to evaluate and understand the viability of the producers.

System 5

1. What is the purpose of the certified producer? Is the purpose known to the departments and workers in it?
2. Is the manager's responsibility clear?
3. Is a member of management clearly identifiable as responsible for workers health, safety and welfare?
4. How effective the manager to solve the complex issues related to applying the Global Gap check points?
5. Is there difficulty in having a management plan developed setting out strategies to minimise all identified risks, such as pollution or water table contamination?
6. Is there difficulty in recording the results of this analysis and using it to justify that that the site in question is suitable?
7. Can the manager delegate the authority related to applying the check points to another worker?
8. Do the producers have separate managers for each type of corps or similar groups of corps to be cultivated, and exported following the global gap check points?
9. Do the producers have separate managers for each section of the check points?
10. Are there any meetings held regularly between the head management and the producer's staff to discuss the

problems facing the applying of the check points? How often the meetings are done?

11. Are there records for such meetings?
12. Do importers (super market in other countries) send auditors to the producer site?

System 3

13. Who is responsible for budgets and financial information, internal control, quality, safety standards and other particulars are in order?
14. Is there an awareness of all the resources in the farm such as the number of workers, how much cash, seeds needed in each department, equipments needed to apply achievement of the Global Gap certificate?
15. Is there information available that provide an accurate overview over all workers of the farm?
16. Is there difficulty in keeping a record for training activities and attendees?
17. Is there any department of the producer that determines the allocation and distribution of resources needed to produce the corps and export them should be?
18. How fast is the respond to shortage in any of the resources?
19. Which department of the certified producer looks at the performance of export and production of corps and looks at the way they interact?
20. How is the relation between the production and exporting organized?
21. Are there rules and policies set for conflict resolution and ensuring stability between the different units? Who decides these rules and policies?

System 2

22. Is there difficulty in having all records requested during the external inspection accessible and kept for a minimum period of time of two years, unless a longer requirement is stated in specific control points?
23. Is there a difficulty in taking responsibility to undertake a minimum of one internal self-assessment or producer group internal inspection, respectively, per year against the GLOBALGAP (EUREPGAP) Standard?

24. Is there difficulty in taking effective corrective actions as a result of non-conformances detected during the internal self- assessment or internal producer group inspections?)

25. Is there difficulty in having a recording system established for each unit of production or other area/location to provide a permanent record of the livestock/aquaculture production and/or agronomic activities undertaken at those locations? Are these records kept in an ordered and up-to-date fashion?

26. Is there difficulty in having a reference system for each field, orchard, greenhouse, yard, plot, livestock building or other area/location used in production established and referenced on a farm plan or map?

27. Do they have a system of disseminating information?

System 4

28. Is there difficulty in having a management plan developed setting out strategies to minimise all identified risks, such as pollution or water table contamination? Are the results of this analysis recorded and used to justify that the site in question is suitable?
29. Does the management have a clear vision of the market and the new corps to be cultivated and exported?
30. Does the management have a clear vision about the competitors?
31. Does the management heave a clear vision about the laws that affect agriculture and exporting?
32. Is there difficulty in having a risk assessment for new agricultural sites (i.e. crop, livestock or aquaculture enterprises) or existing sites only where risks have changed, which shows the site in question to be suitable for production, with regards to food safety, operator health, the environment and animal health where applicable?

The questionnaire was distributed among the auditors with brief explanation to the objectives of research and whole work was introduced. Then it was left with them and collected when finished.

Conclusion

This paper used the Viable System model as a new methodology to analyze the challenges facing the Egyptian producers in exporting agriculture products.

It illustrated the meaning of Cybernetic Audit to understand and define the difficulties facing the Egyptian producers in implementing the Global-GAP major check points.

Through a set of questions, we have tried to enable the analyst to assess and understand the organisational structure of a viable producer, which could be used to detect the challenges preventing producers from applying for Global-Gap major check points. This analysis through viable system models enabled the analyst) to get a deeper insight into the complex interactions inside the organisation and assess the robustness of its structure.

The cybernetic audit could be used by the auditors to check the challenges facing the producers in implementing the Global-Gap major check points and hence suggesting the convenient strategies to face the challenges. By analyzing the auditors responses to the questionnaire the following were revealed:

1. The purpose of the certified producer is to export to new markets that have not been available previously, increase personnel effectiveness and increase products' safety which increase in turn the chance of exporting.
2. There is no difficulty in front of the certified producers to implement the Global-Gap major check points.

Thus using the viable system will facilitate the understanding of the current difficulties and the point of weakness that faces the Egyptian producers who are not certified.

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