

Analytical Review of Tools Used in Investment Decision in Agriculture

Maria Girip

Dorin Martin

Denisa Radulescu

The Bucharest University of Economic Studies, Romania

maria.girip@gmail.com

dorin.martin@gmail.com

dennisaradulescu@gmail.com

Abstract

In the last decades the analytical review of the decision-making process became a mixture of risk management and human behavior understanding. Mental capabilities, factor complexity and time constraints have created a state of "bounded rationality", turning ideas into opportunities, which are described here as the sum of favorable circumstances that come before an investment decision. Risk research springs from the desire to achieve a better outcome. The main goal of this is to run a detailed analysis on the path and process of decision making in the agricultural field. Knowing what tool to use and their applicability can change a failure to a success. Taking into account the market conditions in Romania, as well as the social and demographic changes, the present paper analyzes 3 main tools that ensure the smooth operation of the process - from idea to profit.

Key words: Business, analysis, SWOT, BCG, Scenarios

J.E.L. classification: Q15, Q01, O13

1. Introduction

Success when starting a new business, it is maybe the most desirable outcome. Therefore, now on the market there are a few tools and instruments that ensure helping in decision making and the reliability of those was approached by several scientists, researchers and business consultants.

For the future investment to be successful, the decision maker must first of all create a demand in the market, which identifies itself as a condition of a sustainable business because the basis of a sale is actually the final consumer. This can only come after a business plan is well acknowledged and has a significant review of past failures, strong milestones and reachable goals. Last but not least -resources, the fuel of the idea. Gaining the resources is a parallel, constant process that has to be done from the start until the business reaches the self-financing point - also named the profitable state, that allows it to further invest the profit. The purpose of this paper is to show the main components of the analytical process of decision making. By using theoretical research of mass used tools and instruments this paper aims to underline the key steps to follow for a better and well documented decision making. Existing tools will help with strategic planning, shifting resources allocation from non -profitable products/services, long-term decision scenario and non-scenario based. The current paper will determine their rentability and their use case.

2. Literature review

All companies need to have resources that help them and their shareholders, management and leadership to make the right decisions and to fulfill a better planning; this growing need for "thinking ahead" created the opportunity for elaborated tools and instruments to develop.

Studying both internal (the human mind) and external at macro and micro economical level, made launching on the market for three main tools – BCG, SWOT and Scenario approach. Although there is no right way to achieve success, the Boston Consulting Group created in 1970 the BCG Matrix that could help for a better allocation of resources as their author (Henderson B. , 1970) stated : “To be successful, a company should have a portfolio of products with different growth rates and different market shares. The portfolio composition is a function of the balance between cash flows. High growth products require cash inputs to grow. Low growth products should generate excess cash. Both kinds are needed simultaneously”.

But using this method alone success will be hard to gain, as Stanley, F. et al, looked at 129 companies and found that those who follow portfolio planning models like the BCG matrix had lower shareholder returns. (Stanley, F. et al, 1992). On the other hand, authors Blake, Martin; Wijetilaka, Shehan suggested in their paper that using SWOT will allow a newcomer business to ‘identify your strengths, minimise your weaknesses, take advantage of opportunities and overcome threats’ (Shehan, W., 2015). Long term planning does not intersect with SWOT, as authors Hill and Westbrook argued, the failure to prioritize and a lack of updating the points from the SWOT analysis, can lead to undesired results, as concluded in study over 50 companies. (Hill, T., Westbrook, R. 1998). Scenario planning is the alternative often offered by the critics of SWOT and BCG methods, affirming that a scenario takes into consideration multiple combinations of uncertainties. Benefiting from computer simulation that can rapidly show results, having easier variable update and a higher flexibility helps in considering everchanging environments.

3. Research methodology

This paper contains data collection and analysis methods for the decision-making process, encapsulating both theoretical and practical, established methods. Weighting pros and cons for every tool that facilitates a step-in the decision-making process. The steps that require tools are divided into three main categories: Data collection, Analysis and Progress evaluation.

4. Information gathering tools

The next thing is called data collection, in a few words this means information gathering in order to make the decision based on numbers and data. To issue a value judgment, choosing from thousands of pieces of information, based on criteria of relevance can only be made after knowing all the facts.

Data collection methods:

- Interviews – Can be done in person or with the help of the technology, formally (structured), semi-structured, or informal. Questions should be asked clearly, and it is encouraged to use open-ended responses. From all methods of data collection, interviews are the most qualitative ones.
- Questionnaires and Surveys – Can be analyzed in scales, with help of assigning numerical values.
- Observations – Can count in larger behaviours, provide better information about a chosen group
- Focus Groups – subjects are selected with things in common, this is used for combined opinions and perspectives.
- Ethnographies, Oral History, and Case Studies – involves analyzing a single phenomenon
- Documents and Records – can be used to examine the existing data in the form of databases, meeting minutes, reports, attendance logs, financial records, newsletters, but it can often be a finite and incomplete source of data.

5. Tools used to identify alternatives

The first process that is naturally established in human minds is reasoning that uses existing knowledge to draw conclusions, and prediction making predictions, or better yet construct explanations. By analysing the psychological process scientists claimed that every decision has key points. The very first step in making a decision is recognizing the problem or opportunity and deciding how are we going to approach it. Finding out what is the probable outcome is not really the goal but is a consequence of a process called "reasoning"-part of the thinking process.

Methods of reasoning are:

- deductive
- inductive
- abductive approaches

Having numerous options is the key to success, because having the power of more than one choice increases the chances. Selecting the one that is best for goal achieving may be subject to the below criteria:

- costs—matters of affordability and cost effectiveness.
- merit—how well will this address the need?
- reliability—did the idea was tested in the past? Was a success?
- flexibility—can it serve more than one purpose?
- riskiness—risk assessment?
- communicability—how can this will be perceived by other?
- compatibility—it is within the norms and law?
- reversibility—can we go back to the first state in case of failure?
- robustness—adaptability in different states, can it work trough change?
- stability—how are the changes going to affect this?
- feasibility—we need to address it's do-ability
- invulnerability—how will it go on if something fails?

The most common failure points are:

- Relying too much on the past
- Not being able to keep track of progress and ideas
- Rushing to a conclusion
- Having personal preferences – being subjective.
- Prejudices
- Not considering the alternatives if conditions change.

Considering the evidence.

At this point there is a need to choose the best alternative based on evidence gathered at previous steps. Having at least three paths can be helpful in overcoming further mistakes. Narrowing down by weighing pros and cons can be done by using the analysis tools.

5.1. The first tool is SWOT

It was developed in the 1960-1970 after a convention led by Albert Humphrey from Stanford Research Institute, he used data from Fortune 500 companies; however, Humphrey did not claim its creation. It is used to build organizational or personal strategy. The benefits extend to social work practice framework and shows if an objective is obtainable and it helps in setting an achievable goal. It enables the vision creation by management, that leads to practical and efficient outcome and the gathering insightful information. This alone can help maximise the potential, by having a set of key priorities. Its limitation comes from its fixed timeframe, SWOT is only a snapshot, so it will not take in consideration the rapidly changing external and internal climate.

Later findings from (Menon et al. 1999) and (Hill and Westbrook, 1997) argued that SWOT may harm performance and that "no-one subsequently used the outputs within the later stages of the strategy".

The applicability in Romania is needed due to the market's current state of development, mainly because of the new reformed CAP policy. Taking into account the growth of demand on global market for organic products, a future investor can take a chance in investing in a growing and well

financed sector. The amounts injected in this sector amounted almost 2 million euros in 2010 and increased to 7 million euros until 2013. According to CAP policy the growth will continue, and the aids will target young farmers and entrepreneurs. Please see an example below:

Strengths:

- Growing demand
- Development of the organic market in Romania

Weaknesses:

- Processing sector not well developed
- Lack of legislation to have the products certified

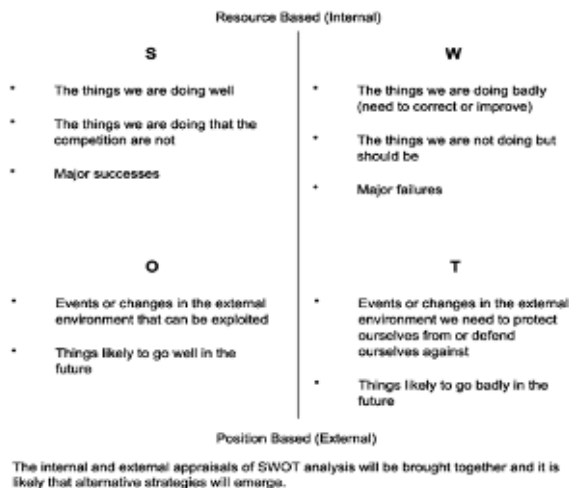
Opportunities:

- Building of new business models
- Creation of own brands with the chance to grow

Threats:

- Weather in the context of climate change
- Competition in prices with major exporting countries (Romania relies on imports more than internal consumption in regard with organic products)

Figure no..1 SWOT Diagram



Source: Kaplan Database

SWOT analysis is the best and shortest way to find out if an idea deserves implementation.

Although it cannot be used as a single decision factor, but in combination with other analyses and data collection methods it can be very successful.

5.2. Second tool – BCG (Boston Consulting Group matrix):

Another diagram that is highly used in economy is BCG. The growth–share matrix draws a map of the company’s product (or service) strengths and weaknesses, at least in terms of current profitability, as well as the likely cashflows.

The main use of this matrix was intended to maximize the cash-flow, it reasoned with the idea that one of the main indicators of cash generation was market share, and one which pointed to cash usage was that of market growth rate. (Henderson, B., 1979)

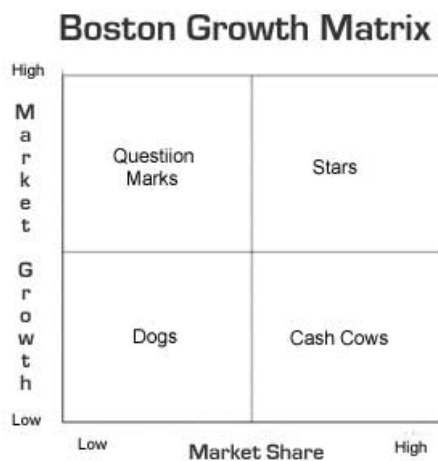
Contrary to its author beliefs misusing the matrix lead to ‘milking the cash cows’ and lower development a new products – applicability in agriculture will mean growing only cereals or focusing on one particular cereal in this case and ignoring the other crops, this will not only lead to lower quality of the harvest due to soil nutrients exhaustion but to overwhelming the demand over its consumption power. Also, its minor applicability to only relatively high growth markets made it possible for other analysis tools to become popular.

Taken in consideration that an individual would want to invest in agriculture, the different types of farming can be represented with BCG matrix, an example it is, knowing the raise in demand in organic products but their success rate being lower than other types of agriculture due to lack of help from chemical solutions like pesticides; on the other hand the subsistence agriculture with the lack of mechanisation and smaller cultivated surfaces is to be well known that does not bring profit.

The third discussed aspect are the genetically modified crops, which show better adaptability to weather changes but their long-term impact in human health was not studied well enough. Lastly we have the most used type of agriculture in Romania as the data from MADR shows, almost 3 quarters from Romania's agriculture is occupied with intensive agriculture where big surfaces are cultivated by landowners, the main downside to this, it is the fact that not having a big surface of land will not guarantee profits, as on the other hand organic agriculture and hybrid one can bring profits on smaller cultivate areas.

- Question marks – Genetical modified crops – Hybrid agriculture
- Stars – Organic farming or ecological agriculture
- Dogs – Subsistence agriculture
- Cash Cows – Intensive agriculture

Figure no.2 BCG Diagram



Source: Henderson, B. 1970

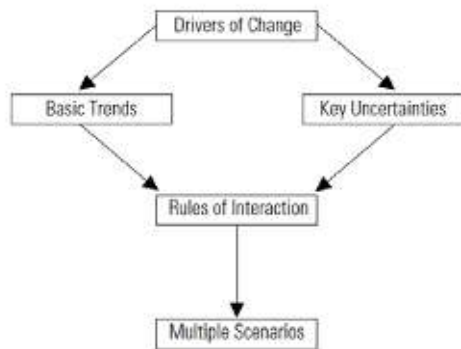
5.3. The third tool – Scenarios

Scenario planning is mainly a disciplined method for imagining possible outcomes in the future, with other words identifying different realities of what could happen with the business.

Taking in consideration of all available variables that can arise, every single scenario it is a description of how various elements could interact under certain conditions, capturing the richness and range of possibilities. After formalizing the relationship between elements, the company is able to develop quantitative methods. Scenarios not only analyze one outcome, i.e. a single "what if" they take into account all of "what ifs" possible. This allows an individual to change several variables at a time and not be constraint by keeping others constant, feature that provides with key factors that can have a major impact on the business. Thus, freeing our way of thinking, scenarios can be biased, due to tending to confirm evidence and discount disconfirming evidence. They way to weight in more the probability of possible outcomes than negative ones, along with overprediction, underprediction and lack of confidence and vice versa, the human tendency to confirm ideas, can be very harmful. Still, scenarios challenge the tunnel "vision" thinking and give the possibility to find out the "things we don't know that we don't know" by providing us with a full pallet of results. (Schoemaker, P., 1995).

In agriculture a broad used example is prediction of the harvest in relationship with weather, this helps in forecasting the sales and if/when/or they will make an investment.

Figure no.3 Scenarios blocks



Source: Schoemaker, P., 1995

6. Agriculture particularities

Agriculture is the only branch of the economic sector that is characterized by a number of peculiarities that determine risk and uncertainty about the profitability of the firm and the final result after the investment. One of the most important and influential features is the seasonal aspect of agriculture

The highest outcome in the agricultural is obtained with a major dependency of rain and water. While the soil can be altered and improved by using organic or non-organic fertilising. Access to information for future weather forecasts is vital in choosing what will be grown. High-yielding varieties can increase production potential in good years and reduce losses in poor years;

Another point to be taken into consideration is positioning in space, while mountains and hills do not have the same demand as plain fields a high production can be obtain if maximum exploitation of given resources.

What more can be used?

Additives for providing nutrients and fertilizers for enhancing soil's effectiveness by modifying aeration and water retention.

7. Findings

Commitment and fulfillment are two important directions to be followed when trying to make a profitable decision. The analysis must ultimately answer two questions, to whom the product can be sold and for how long. These two will help us establish the timeframe of the business and the target market as well as establishing the goals it needs to have to create a business plan with carefully selected achievable goals. A key aspect of this plan is that the milestones of the business are interconnected. Meeting them in a timely manner will help create the favorable environment for future success.

In regard to planning, there is need for an evaluation of the external factors, ranked by their immediate impact:

- The country's economic growth - considering the general economic cycles and the specific nations growth rates fluctuations; e.g. if a country is growing well then so are the businesses. The primary result of this can be observed in its stock prices and the stability of interest rates and inflation. At the other end we have low stock prices and increased interest rates and inflation.
- Political climate. Political stability is a must when deciding to invest, a balance between social and economic growth must be sought.
- Interests rates – are the main decisional factor in lending and borrowing from banks. The rates at which business are likely to borrow will determine the interest rates growth or decrease.
- Inflation – the rise in prices is the generally accepted definition of inflation, lower inflation and interest rates will yield higher profits and generate increases in the stock value. The

opposite means lower profits which later on leads to lower value stocks. If investing when inflation is risen the cost of business on the long term will be higher so the investment decision must be made accordingly.

- Global climate – a rise in international prices will have a direct impact on national prices as well. Inflation will also be affected directly and indirectly, the synergy between the country of investment and other countries economic climate it is so tight, that if global markets grow, the local market will rise as well.

Internal factors must also be taken into consideration:

- Risk profile – some people are more prone to risks than others. Knowing risk aversity will shrink the area of potential opportunities and vice versa.
- Age – the available time is one of the most important factors when making a decision, having time on one's side will usually trigger an investment in riskier business; failure is not seen as such an issue when age is on one's side since there is always the possibility of a fresh start.
- Dependents – the nature of sole provider of the family it is not new, especially in agriculture, being the only source of income for the household has considerable weight when analysing risk and opportunities.

8. Conclusions

The investment decision aims at achieving the optimal financial structure for cash allocation over time. The influence factors are of a diverse nature and result from all the relationships the company has with the market, with the suppliers, with the banking sector, practically with all the elements of micro and macro environment. Sales stability is the most important factor. In general, a large turnover also brings a big profit. Relative sales stability allows a company to use a larger proportion of borrowed capital as it can incur fixed expenses with higher interest rates than a company that has unstable sales.

Sustainable investment requires active involvement of the decision makers by continuously analyzing the market context in which the relationships between upstream and downstream economic agents are taking place.

The failures and success of several these tools in the past have led to today raise of different consultants and consultancy companies that can evaluate the risk and opportunity in your stead. The reality is that no matter how many tools and instruments are used to analyse, those will only provide raw, theoretical data and will not ensure the success of the business, as previously described, there are many macro-economic and micro-economic factors to consider. Further steps in innovating the analyse of success and failure will consist in scaling the business and placing it through several scenarios. This enables us to organise the possibilities into "stories" that are easier to grasp and use than raw volumes of data. (Schoemaker, P., 1995).

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