International Journal of Advance Research in Science and Engineering
Vol. No.6, Issue No. 01 , January 2017
www.ijarse.com
IJARSE
ISSN (O) 2319 - 8354
ISSN (P) 2319 - 8346

RESEARCH PAPER ON ORGANIC AND CONVENTIONAL FARMING

Meenu Paul Sood

D M College. Moga

ABSTRACT

This paper shows a research on economic and envisions mental sustainability of organic farming. It focuses on organic and conventional farming comparison through investigations. This paper aims to highlight some of the important differences in production technology, costs and revenues involved in both types of farming. In conventional farming gross production is significantly higher than the organic farming.

As people are becoming more aware of the benefits of the eatables grown organically and despite of least revenue generation, it has been highly welcomed by the masses.

It's the basis of future agricultural production and the masses will be the consumers for this market. As its rapidly growing and is been a virgin territory for Indian markets, the growth will be phenomenal and the output would be accepted widely.

Organic farming is the next product in agricultural market and would be having an impactful growth in near future. Awareness through print and audio media has impacted it like anything and is being followed by many farmers and consumers as well. People are becoming more and more health conscious and are looking out for such healthy output which gives more energy and nourishment to the body.

As the demand of organic vegetables and other consumables is on the rise, farmers have been forced to grow such kind of consumables to reap rich dividends through more production and earnings. The cost of organic farming would be on higher side but it is good for health and also yields good profit.

Farmers are getting more and more attracted towards the organic farming and hence it's been considered as an option against the conventional farming. Conventional farming depends a lot on season and organic is driven by technology and research. Hence it gives good output and benefits health of individual, the most. So in totality, it's profitable for farmers and consumers as well.

I. INTRODUCTION

The increasing spread of organic farming in Europe over the last decade has stimulated the interest of many economists, both in terms of trade dynamics with its related market strategies, in terms of farm production and revenue performances. Indeed, in the medium and long-term, organic farming cannot disregard the fact that farms can achieve acceptable profit and efficiency levels (Offermann and Nieberg, 2000). The most common approach in the literature is based on a comparison of organic and conventional farms. Following this branch of research, analysis of the two different production systems can offer important information in terms of both the micro– economic point of view (for instance, evaluating the economic chance to convert) and macro-economic results

IJARSE
ISSN (O) 2319 - 8354
ISSN (P) 2319 - 8346

Comparative analysis introduces some problems related to methodological issues. Some researchers argue about the effective reasonableness of the comparison itself, because it is done on two systems with: a) very different production techniques; b) different technical-productive patterns, admitted that it is possible to define a specific one for each group; c) heterogeneity within groups, mostly because conventional farming is a mix of agronomic techniques, some quite similar to the organic ones. With respect to this last issue, conventional farming can be considered as the most widespread agricultural system in a given territory or, vice-versa, it could been seen as everything but organic techniques and methods (Offermann and Nieberg, 2000).

Even if the objective is a comparison, the risk of taking non-homogenous systems into account is very high, either from the technological or management point of view. On the other hand, it should be emphasized that, as with every comparison analysis, the results, and their implications, are strictly connected to the methods applied to the comparison. What emerges is the deep complexity in identifying an analytical approach that can "explain" differences and similarities. This study presents some results from a wider research on the economic and environmental sustainability of organic farming. It aims to compare organic and conventional farming in order to identify some of the main differences between those groups of farms from the economic and technical points of view.

The analysis is based on the comparison of two groups of organic and conventional farms. It demonstrates that productivity in the organic process is generally lower than in the conventional farming (Offermann and Nieberg, 2000). It is clear that inadequate efficiency and productivity levels could be a disincentive for farmers to convert to organic farming 1 . As a consequence - leaving aside the environmental and health externalities generated by this practice – the development of organic farming could be invalidated if individual farms do not reach adequate efficiency levels. This implies that organic farms must try to achieve both productive and economic efficiency.

II. COMPAIRING ORGANIC AND CONVENTIONAL FARMING

An approach used for the comparison between the two productive systems, through FADN data, defines conventional farms as an approximation that means how an organic farm should be if it were conventional. The similarity between the two kinds of enterprise, which should operate in the same context, is founded on the same levels of potential production, and on the same level of available resources. So the hypothesis is that there is technological homogeneity between the two production systems.

This approach, however, introduces many problems. The more important are (Offermann and Lampkin, 2005): - the selected variables' submission to the system/context: how much variables depend on organic or conventional farming? - Business management: the more innovative farms often show greater conversion inclination - the self-selection bias: if all farms had the same information to maximize profits, then there would be no reason for the comparison, because every farm would adopt the most rewarding production technique.

A temporal analysis, in fact, is considered as the preferable one (where possible) because it allows both a within and between farms' analysis to be done (Santucci, 2002). This is one of our purposes for further analysis. Other recent studies developed using FADN data have, instead, favored the application of a spatial approach, analyzing farms' structural and economic characteristics. This would not take into account the possible effects coming from a change in business management, as well as those necessary to evaluate the effective advantage of

IJARSE
ISSN (O) 2319 - 8354
ISSN (P) 2319 - 8346

converting (evaluation of cost-opportunity). Some studies match groups of farms ensuring only that group averages are similar, while others select a group of comparable farms for each organic farm. Furthermore, some studies use an aggregated measure of similarity which allows to rank conventional farms and then select a number of the most similar farms (Offermann, 2004).

The comparison analysis that could have been adopted can be summarized as follows:

- Comparison between groups of similar farms: averages within groups are similar.
- Comparison between two farms considered as the most representative of their farm type.
- Comparison between organic and conventional farms classified as similar thanks to a weighting system of selection
- Comparison between farms based on "minimum similar criterion", where the conventional farms selected have specific minimum requirements.
- Comparison between two groups of farms with similar characteristics in terms of production system, size and location.

III. ANALYTICAL FRAMEWORK

Technical efficiency (TE) is defined as the measure of the ability of a firm to obtain the best production from a given set of inputs (output-increasing oriented), or as a measure of the ability to use the minimum feasible amount of inputs given a level of output (input-saving oriented) (Greene, 1980; Atkinson and Cornwell, 1994) . In the case of the input-oriented approach, TE represents a cost efficiency measure that reflects the level of reduction of input use in order to obtain the same output level.

Several procedures and strategies have been proposed for measuring TE. More precisely, frontier models can be classified in two basic types: parametric and nonparametric procedures. The former can be separated into deterministic (assumption that any deviation from the frontier is due to inefficiency) and stochastic (presence of statistical noise). Furthermore, models can be separated into primal and dual approaches depending on the underlying behavioral assumptions that are made.

Data Envelopment Analysis (DEA) is a non-parametric approach to estimate efficiency originally proposed by Charnes et al. (1978) and based on the well-known Farrell (1957)'s model.

With respect to the stochastic approaches, the disadvantages in DEA applications are that models are deterministic and are thus affected by extreme observations, results are potentially sensitive to the selection of inputs and outputs, and there is no way to test the model appropriateness to the data.

On the other hand, among its advantages, DEA consents to manage efficiency in multi-output situations better, and it permits efficiency estimation without assuming an a priori functional form for frontier production (Charnes et al., 1978). Solving a linear programming problem, DEA calculates efficiency by comparing each production unit against all the others. The best practice frontier is represented by a piecewise linear envelopment surface. Therefore, TE scores arising from DEA are invariant to technology, because obtained through comparisons between an observation and others and not with respect to an estimated frontier.

IJARSE
ISSN (O) 2319 - 8354
ISSN (P) 2319 - 8346

IV. CONCLUSION

Organic and conventional farming can be defined as two different entities, mainly because of a formal difference, which becomes substantial when a comparison of business performances is made. Conventional farms have the opportunity to adopt natural products without any obligation. This study highlights the main differences of those two productive methods, trying to measure the distance. It turns out that there are few differences.

Taking into consideration the profit and efficiency of the production factors, the economic indices show opposite results if reported to cultivated area or to total labour force. In the former case the results are always in favour of conventional farms. This could explain the greater extension of the organic farms in terms of cultivated areas (as also emerges from the structural indices), but would also mean lower revenues. Other indexes reveal that the profit in organic farming is guaranteed not only by the typical production processes, but also by extra-farming activities, even if in general, business profits (Net Margin/Gross Production) remain higher for the conventional farms. Frontier analysis on a sample of Italian fruit-growing farms showed that organic farms have significantly higher efficiency measures than conventional ones (with respect to their own frontiers) but productivities that are, on average, significantly lower than the corresponding conventional values. It suggests that conventional fruit-growing farms adopt a more productive technology but that organic farms are able to partially compensate for this through a more efficient use of their disposable inputs. These finding are in accordance with some empirical results from studies conducted on other farming activities. However, further research is needed to gain more insight into the long-term development of organic farms.

V. REFERENCES

[1.] ATKINSON, S.E., CORNWELL, C. (1994), “Estimation of Output and Input Technical Efficiency Using a Flexible Functional Form and Panel Data”.

[2.] CHARNES, A., COOPER, W.W. (1984), “Some Models for Estimating Technical and Scale Inefficiency in Data Envelopment Analysis”

[3.] OFFERMANN, F. (2004), Comparing Organic And Conventional Farm Incomes In FADN, 1st European Seminar: “Development Of A European Information System For Organic Markets”

[4.] OFFERMANN, F., NIEBERG, H. (eds.) (2000), Economic Performance of Organic Farms in Europe. Organic Farming in Europe. Economics and Policy

[5.] SANTUCCI, M. (2002), Limiti e Necessità della Comparazione tra Biologico e Convenzionale.