# Best Practice Model for Organic Farming and Marketing: The Case of Kolymvari Region

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## 1. Introduction

Over the past two decades, sustainability has become a major element of political, social and economic concern. Traditional approaches to rural development were focused primarily on economic issues, such as the improvement of output, income and employment. However, upon connecting rural development to the concept of sustainability, a rather more multifaceted perspective has emerged, relating conservation of environmental resources with social and cultural dimensions.

Complex interrelationships in rural development describing functional transformations in the use of resources (land, labour, knowledge, substitution effects) and the importance of synergy in defining and quantifying micro-macro relationships are covered by Knickel and Renting (2000). Thus, it is important to analyse the entire market environment, including the power of local key actors and stakeholders (Scott, 2002; Midmore et al., 2004).

Consequently, methodological approaches have been employed to study networks among local actors as this is a very important task. Such an analysis will allow the representation of local actors and the rebuilding of a potential network development whose aim will be to represent the organization of the entire local area. In this context, the structure of organic farms significantly influences rural development and the strengthening of local networks.

The current analysis focuses mainly on aspects related to

### Abstract

The aim of this paper is to determine a new strategy for sustainable and multifunctional rural development based on the development of organic farming and marketing aspects of organic products. The technique introduced in the analysis is based on a Delphi approach. A standard stakeholder analysis was implemented with the aim of classifying stakeholders in terms of influence and involvement in the development of the Best Practice Model for organic farming and marketing. The Best Practice Model was applied to a specific region named Kolymvari located, on the Greek island of Crete. The results showed a region with a competitive advantage in producing high-quality local agricultural products and initially involved in the development of the organic farming sector as well.

### Résumé

L'objectif de ce travail est de déterminer une nouvelle stratégie pour un développement rural durable et multi-fonctionnel, basé sur l'essor de l'agriculture biologique et de la commercialisation des produits bios. La méthodologie retenue dans l'étude est l'approche Delphi. Une analyse des acteurs a été réalisée en vue de les classer sur le plan de leur influence et implication dans la mise au point du Modèle de Meilleure Pratique pour l'agriculture bio e la commercialisation des produits bios. Le Modèle de Meilleure Pratique a été appliqué à une région spécifique, qui s'appelle Kolymvari, située en Crète. Les résultats de cette application ont montré que la région affiche un avantage compétitif dans l'élaboration de produits agricoles locaux de haute qualité et que, de plus, elle s'est engagée dans le développement de l'agriculture bio.

organic, multifunctional and competitive agriculture for territorial integrated and sustainable development. For this reason, primary data were selected in order to identify how and whether, organic farming and multifunctional agriculture, can contribute to sustainable rural development. A Delphi technique is employed to evaluate those factors that contribute to sustainable development based on organic farming and which are likely to influence Sustainable Rural Development (Ilbery, et al., 2004).

## 2. A Cursory Background of Organic Farming in Greece

Over the last decade, the organically farmed areas in Greece have increased and volumes of production of organic food have grown as well. In 2003, the accelerated aggregate number of total area under organic agriculture was 38.993,21 ha (25.052,47 ha under conversion and 13.940,74 ha which have totally been converted to organic), comprising approximately 1% of the total cultivated area in the EU. Low domestic consumption is attributed mainly to poor information on the value of organic products and to low product availability towards different kinds of outlets. According to Hamm and Gronefeld (2004), the most effective way to increase organic food consumption is to strengthen links between primary producers and the supermarket sector of retailing.

The international market of organic products is extensive and realises high turnover in most developed countries.

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[1] Un secteur représente un découpage administratif et fait partie de la délégation.

Thus, significant opportunities for Greek farmers to increase production and exports to already developed countries are emerging. In particular, exports in products like wine, olive oil, and other Mediterranean crops that require specific agro-climatic conditions for their production comprise a challenge for the Greek organic production. However, organic products are sold mainly through conventional market channels, without the benefit of premium prices and generally, at a higher cost compared to conventionally produced products.

Organic product prices are 40-50% higher than the conventional products. The value of exported domestic organic products was nine million euros in 1999, while in 2002 it reached eighteen million euros, depicting an increasing annual percentage rate of 27% (1999-2002). The main exported organic products are citrus and olive oil and to a smaller extent, vineyard grapes.

## 3. Survey area and methodology

For the present study, Kolymvari, a region located on the Greek island of Crete was selected due to its competitive advantage in producing high-quality agricultural products. In Kolymvari the majority of the farmland (80%) is occupied by perennial cultivations, mainly olive trees, while the rest is cultivated with vegetables (2.40%) and vineyards (3.80%). The remaining land is arable (8.75%) and set-aside (5.08%) land. Organic farming which is still in its early stages, in this region, includes thirteen organic producers, cultivating an area of about 80.6 hectares. Most organic farms have concentrated on olive oil production, as almost 80 % of the land is occupied by olive trees. The remaining land is cultivated with vegetables, citrus fruits and vineyards.

The approach followed in this study is based on a Delphi analysis performed on a sample of stakeholders. A standard stakeholder analysis (Dick, 1997) aimed at classifying a sample of twenty-two stakeholders in terms of influence and involvement in a rural system, was implemented (Table 1). As the stakeholders are the key players required to determine the best practice model for organic farming, they should represent key individuals of the main economic and social groups in the region.

In the Delphi technique, principally knowledgeable and expert contributors (key stakeholders) individually complete a form and submit the results to a central coordinator. The main steps involved in designing a Delphi survey involve (Shon and Swatman, 1998):

1. Identifying, contacting and recruiting participants;
2. Designing and circulating the first-round questionnaire;
3. Producing feedback from the first-round;
4. Designing and circulating the second-round questionnaire;
5. Analysing the results of the second round, and
6. Preparing a final presentation.

The First Round of the questionnaire usually contains a number of open-ended questions, whereas the second round and any subsequent rounds typically involve more closed-ended questions. The objective of the two round surveys is to construct a best practice model for organic farming.

The reputation approach (Sanders, 1966) was the process used to identify experts: each selected expert had to be an acknowledged leader or recognized authority in the given sector. This generated a list of 22 potential stakeholders (Table 1). The information and ratings were supplied by experts identified for each of the eight types of stakeholder participants. In order to meet the requirements of the first Delphi round, each panellist was contacted by telephone and invited to participate. Response rates were 100%. The first round of the survey covered:

(I) Evolution of organic farming in the territory
(II) Producers' role in the creation, spread and adoption of innovations
(III) Capacity to activate integration processes (horizontal and vertical integration processes) and formal and informal inter-relations

(IV) Objectives for Sustainable rural development
During this first Delphi round, the survey items were ranked in terms of importance with the use of ordinal scales depending on the frequency of objectives repeated (ordinal scale).

In the second Delphi round, each panellist was contacted by e-mail whereby a structured questionnaire was sent to confirm the results of the first Delphi round and to evaluate

| N. | Stakeholders' category | Organizations - Individuals | Number |
|---|---|---|---|
| I | Local authorities | Authorities | 2 |
| II | Farmers | Organizations and individuals | 4 |
| III | Companies responsible for the processing and marketing of agro-food products | Organizations and individuals | 3 |
| IV | Companies that do not deal with agro-food products (tourism, trade, services) | Organizations and individuals | 3 |
| V | Agencies for local development (Pacts, LEADER) | Organizations | 2 |
| VI | Bodies providing technical advice and certification services (Professional organizations – "Coldiretti", that is National Confederation of owner occupiers, etc.) | Organizations | 3 |
| VII | Research and experimentation bodies (Universities, National Council of Research, etc.) | Organizations | 1 |
| VIII | Citizens/consumers | Organizations and individuals | 2 |

Table 1. Methodology for the Stakeholders' Selection

the "importance" of the variables derived related to sustainable development policy issues. Despite the fact that the response rate of the second Delphi round was 85%, the purpose of this round was to verify the results attained in the first survey .

The resulting response analysis document indicated substantial agreement with the round-two frameworks in terms of qualitative assessments. Therefore, the main purpose of the second survey was to ask the experts to weigh the answers they had provided in the first survey in order to derive the best practice model and the priorities that should be met.

## 4. Results

In order to compare the spread of the two rounds and to remunerate the contingency among the stakeholders, two correlations were performed on the ranks for comparison. Kendall's tau and Sperman's rank correlation were conducted and similar results were derived for both tests. Correlations of the rank scores were significant at 5% and 1% level of significance. These descriptive statistical methods were used because of the relatively small sample size (the number of experts) and the relatively detailed questionnaires.

Moreover, the means calculated for the eight categories for each of the issues derived by each question were compared. Pearson's correlation was performed and indicated that, in terms of overall mean scores of the objectives derived, groups do not differ over all the issues. However, between the groups there are some different tendencies.

The statistical tests comparing the stakeholder categories suggest that most of the results can be used with confidence, but it is suggested that any 'findings' by stakeholder categories are used with caution. The overall correlation among all stakeholders is significant in order to conduct an analysis for the best practice model. Generally, the opinions stated by most stakeholders tend to converge and only a few cases had a very small spread.

In the Best Practice Model depicted in table 2, each action or situation mentioned during the qualitative research was prioritized (number in quotes) in order to derive a common and efficient decision-making plan. Consequently, the most important factors, these with the highest average mean by each category, constitute a proposed Best Practice Model for organic agriculture and sustainable development.

## 4.1 Agronomic aspects

The most important actions to encourage and enhance biological cycles within the farming system (Table 2), according to experts' answers (those ranked highest), are the distribution of a respected area proportion for organic cultivation by the EU (1.94) and the importance of studies carried out with the intention of dealing with the application of new techniques and inputs (1.94). Additionally, the easy cultivation techniques of some organically produced prod-

ucts (mainly for olives and citrus) (3.53) could delimitate the barriers that one can face while applying biological cycles within the farming system.

Considering actions that enhance the use of renewable resources in locally organized agricultural systems (Table 2), many stakeholders define organic farming management as "a Farm management with innovative aspects" (1.35), which is considered an important action for local environmental resource preservation. Respondents criticized very strongly the high prices of organic inputs, as the agricultural input supply industry mainly deals with agrochemicals used in conventional farming and not in organic farming (1.76). This implies the need for supporting research and development in the field of agronomy.

## 4.2 Environmental aspects

The importance of training conventional and young farmers (new entrants) in organic farming is highly significant (1.76) as such training encourages the implementation of actions related to avoidance or reduction of all forms of pollution that may result from agricultural techniques (Table 2). Also, the need to regulate environmentally friendly input use is extremely highlighted by the interviewees (1.41). Nevertheless, many respondents stated that organic farming is practiced in a very small area because of the high risk of converting from conventional to organic farming (1.88). Producers are reluctant to convert to organic farming, because they consider it a less profitable activity.

In order to maintain the genetic diversity of the agricultural system and its surroundings, including the protection of plant and wildlife habitats (Table 2), a combination of new and traditional varieties and cultivation techniques should be used. The preservation of indigenous knowledge and wisdom on traditional farming and herb cultivation is highlighted (2.71). This will allow maintenance of the genetic diversity of the agricultural system and preservation of future revitalization of nature.

## 4.3 Socio-economic aspects

The case of organic farming contribution to the enhancement of the pilot area in terms of interaction with other rural development initiatives (Table 2) is considered the most important issue for sustainability. Two interactions are considered as the most important: the horizontal networks introduction (involvement of agrotourism in the organic production, (1.59)) and the vertical networks (vertical integration processes of organic farmers, (1.59)). This integration process facilitates the transformation of the farmer to the entrepreneur. Nevertheless, many experts stressed that the barrier that constrains these interactions is the limited number of organic farmers (1.88).

Sustainability can be obtained only if high quality and added value (Table 2) of the produced organic products is attained. The need for a certification and control body-centre to control and certify organic products in the area is rat-

ed very high (2.06) . Moreover, a competence centre carrying out monitoring and verification responsibilities and supporting consumers' confidence is also required (1.82).

Increasing the possibilities of niche marketing of certified quality products is an aspect generally accepted as a path of sustainable development (Table 2). Respondents noted this requires the involvement of commercial representatives, as well as agents appointed by local farmers to promote their products (1.71). Niche markets of certified quality products can be expanded when the prices of organic products are stabilized and do not divert substantially from the corresponding process of conventional products (1.12). The probability of certified quality products not becoming mass products was also ranked as important by the respondents (2.12), due to the lack of structured distribution and processing channels, promotion and marketing strategies. The aspect of retail power is generally considered a constraint factor to increase market share. Only if the willingness to pay for certified quality products is increased and shorter supply chains are introduced, niche markets could expand.

## 4.4 Institutional and Infrastructural aspects

Policies in reference to the EU application of sustainable and multifunctional rural development, require State support (1.76) (Table 2). The rural population needs economic and technical support to prevent a mass exodus to urban areas (1.24). The 'Bottom-up' approach policy must be favoured by EU regulation (1.53). Clearly, the respondents questioned the motives offered by various regulations to producers and entrepreneurs of organic products (1.88).

The crucial aspect for interaction between regional and local institutions (pilot areas) is a high priority issue for verifying sustainability (Table 2). This can be accomplished by a new valid information system in terms of interaction with other sectors (1.47). In addition, community and local development programs support the establishment of vertical and/or horizontal, institutional and entrepreneurial networks (1.41).

Table 2. *"Best-Practice Model for Organic Farming" for the Region of Kolymvari, Crete*

| Theoretical Objectives | Analysis of the Region of Kolymvari | Draft of the conceptual model - specific actions to achieve theoretical objectives |
|---|---|---|
| **Agronomic aspects** | | |
| | -Easy cultivation techniques of organic farming (**3.53**)<br>-Input problems: the agricultural inputs supply industry mainly deals with agrochemicals used in conventional farming (**1.76**) | -Distribution of a respected area proportion for organic cultivation by EU (**1.94**)<br>-Studies carried out to deal with new application techniques and inputs (**1.94**)<br>-Farm management with innovative aspects (**1.35**)<br>-New pest management application (**1.65**) |
| **Environmental aspects** | | |
| | -Increasing concern in health aspects (**3.12**)<br>-Limited organic farming in the area because of high risk of conversion to organic farming (**1.88**)<br>-Limited farms' income due to the small size of farms and to cultivation techniques used (**2.88**) | -Education seminars on organic farming (**1.76**)<br>-Organization of producers to verticalize an entire production process. Low-energy spending (**2.94**)<br>-Application of inputs that are environmentally friendly (**1.41**)<br>-Imposition of new restrictions for the abandonment of agrochemicals (**2.12**)<br>-Use of new and old traditional inputs (**2.71**) |
| **Socio-economic aspects** | | |
| *Enhance sustainability and multifunctionality* | -Limited number of O.F. so interaction is not considered necessary (**1.88**)<br>-Lack of interaction (small size of agricultural enterprises) (**2.88**) | -Involvement of agrotourism businesses in the production (**1.59**)<br>-Encouragement of vertical integration of organic farmers (**1.59**) |
| *Improve quality and added value in the products* | -Certification and control bodies are few and private. High certification cost should be afforded by farmers (**2.06**) | -Increased control and analysis of production factors to support consumers' confidence (**1.82**) |
| *Increase the possibilities of niche marketing of certified quality products* | -Increasing international demand for organic products (**2.94**)<br>-Lack of specialized distribution channels (**2.94**)<br>-Lack of measures enhancing specialized distribution channels (**2.12**)<br>-High market price of organic products (**1.12**) | -International interactions to penetrate the distribution channels abroad (**2.06**)<br>-Hiring of commercial representatives, agents appointed by local farmers to promote their products (**1.71**)<br>-Stabilizing price fluctuation of organic products (**1.12**) |
| **Institutional and Infrastructural aspects** | | |
| *Application of sustainable and multifunctional rural development policies* | -Insufficient motives through various regulations to producers (**1.88**)<br>-Lack of State support for exploitation of the related EU Regulations and Projects (**2.29**)<br>-Insufficient information concerning available subsidization by the state (**2.94**) | -Increase in people's ecological awareness (**2.82**)<br>-Provision of support of to the rural population by the State in order to prevent mobility and migration (**1.24**)<br>-Application of 'bottom-up' approach policy (**1.53**)<br>-Need for the State to favor the Draft (**1.76**) |
| *Encourage interaction between regional and local institutions* | -Community support and local developmental programs (**1.41**).<br>-No mutual trust between producers and information bodies (**2.82**) | -New valid information system in terms of interaction with other sectors (**1.47**)<br>-Organization of bio cultivators that will undertake the control and trade (**2.18**)<br>-Need for open-minded stakeholders in institutions, research centers, local authorities (**2.24**) |

# 5. Discussion

The main objective of the present study was to define a new strategy for sustainable and multifunctional rural development, based on the development of a Best Practice Model of organic farming. Stakeholders' selection, participation and integration to a single entity through a Delphi technique were the means to meet this objective.

Conscious effort is needed, to improve the standing of the organic approach among conventional farmers, in order to foster mutual respect and understanding as the basis for long-term collaboration. A process of continuous dialogue with regional policymakers and various stakeholders could facilitate the strengthening of potential of initiatives conducive to development. Regional Development Agencies should be ready and prepared to provide any available support for pioneer initiatives. Identifying and facilitating appropriate networks of organic producers, and assisting conventional farmers to explore the advantages of conversion will help to establish a stable organic production. Finally, support of small-medium sized processing/trade enterprises, and the establishment of young farmers' holdings constitute a must for the rural society.

The responsibility for implementing all necessary actions should not be left only to the Regional Development Agencies but State agencies should also play a determinant role in providing constant guidance.

Beyond the huge responsibility taken on by each different level in the agency, demand to tighten the links among these levels is required. These links can be strengthened by intermediaries, like private initiatives, NGOs, or other independent entities. Organic producers themselves and the active community should generate and implement ideas. For sustainable development based on the growth of organic agriculture, consumers must be aware of the intrinsic value of organic products and their differences from the conventional ones. Thus, though organic farming and marketing can be applied in very small areas, this does not constitute a Best Practice Model for sustainable rural development. Persistent links among various agencies and strong long-lasting networks among stakeholders are required.

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