EVALUATION OF ORGANIC FARMING AS A SUSTAINABILITY INDICATOR FOR THE AKYAKA REGION

by

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ABSTRACT

In recent years, there has been an increasing awareness of the need to manage the impact of human activities on the environment. Sustainable communities play an important role in developing this awareness especially on the regional basis. The aim of the study is to assess the current environmental status of the coastal town of Akyaka located in Southwest of Turkey and to develop proposals for the sustainability approach of the town with special emphasize on organic agricultural activities.

Concerning the residents and visitors sustainable approach, an integrated survey was conducted among the citizens of Akyaka Region in order to assess the potential of organic farming as a sustainability indicator. The main idea behind this is to assess the state of organic farming applications and level of awareness among farmers and the degree of interest of local community in organic products. Within this respect, two separate questionnaires were prepared; one for farmers and the other one for consumers. Questionnaires were conducted with both farmers at the local marketplace and residents at restaurants, hotels of Akyaka. Moreover, 135 consumers and additional 30 farmers from the surrounding villages of Akyaka were interviewed. The number of interviewed participants corresponds to 6.6% of the total target people which is above evaluation limit of 5%. The information obtained from Organic Consumers' Questionnaire for Akyaka Region was analyzed by using Statistical Package for the Social Sciences (SPSS, version 21.0) statistics program. On the other hand, as the current organic product information achieved by questionnaire applied for farmers contains variety of data, the results were evaluated on frequency basis of SPSS and general evaluation.

In conclusion, among many areas about environmental management systems, organic farming was selected as the key topic of this thesis. The aspects of sustainability are interconnected and related to each other and understanding these relationships is crucial for successful implementation of an ecovillage concept. According to this study, income level was emerged as the main differentiator in purchasing organic products. On the other hand, age and gender of consumers and organic food purchasing have no significant correlation.

ÖZET

Son yıllarda insan aktivitelerinin çevre üzerindeki etkilerinin yönetilmesi ihtiyacı artmıştır. Bu gelişen farkındalıkta sürdürülebilir topluluklar özellikle bölgesel bazda önemli bir rol oynamaktadır. Bu çalışmanın amacı, Türkiye'nin güneybatısında yer alan Akyaka sahil kasabasının mevcut çevresel durumunu değerlendirmek ve yerel halk ve ziyaretçiler için organik tarım aktivitileri ile kasabanın sürdürülebilirlik yaklaşımı için öneriler geliştirmektir.

Yerleşik halkın ve ziyaretçilerin sürdürülebilir yaklaşımı dikkate alınarak organik tarımın sürdürülebilirlik göstergesi olarak potansiyelini değerlendirmek amacıyla Akyaka bölgesinin sakinleri arasında bütünleştirilen bir araştırma yapılmıştır. Bunun arkasındaki ana fikir organik tarımın uygulamalarını, çiftçiler arasındaki farkındalık seviyesini ve yerel halkın organik ürünlere ilgi derecesini değerlendirmektir. Bu kapsamda, araştırmayı gerçekleştirmek için biri çiftçiler diğeri tüketiciler için olmak üzere iki farklı anket hazırlanmıştır. Anketler hem pazardaki çiftçilerle hem de Akyaka'nın otellerindeki ve restoranlarındaki insanlarla yapılmıştır. Ayrıca 135 tüketici ile ve Akyaka'nın çevre köylerinden ek olarak 30 çiftçi ile görüşülmüştür. Görüşülen katılımcı sayısı toplam hedef kitlenin % 6,6'sini oluşturmaktadır, bu da % 5 olan degerlendirme limitinin üzerindedir. Akyaka bölgesi için organik tüketicilerin anketlerinden alınan bilgiler Statistical Package for the Social Sciences (SPSS, version 21.0) istatistik programı kullanılarak analiz edilmiştir. Diğer taraftan, çiftçiler için uygulanan anketlerden elde edilen mevcut organik ürün bilgileri çeşitli veriler içermektedir, sonuçlar SPSS'in frekans temelinde değerlendirilmiştir.

Sonuç olarak, organik tarım birçok çevre yönetim sistemi arasindan kilit konu olarak seçilmiştir. Sürdürülebilirlik yaklaşımları birbirleriyle bağlantılı ve ilişkilidir. Bu yaklaşımların birbirleri ile bağlantılarını anlamak ekoköy konseptinin başarılı bir şekilde uygulanmasında önemli bir rol oynamaktadır. Bu çalışmaya göre, organik ürün alımında gelir seviyesi ana farklılaştırıcı olarak ortaya çıkmıştır. Öte yandan, tüketicilerin yaşı ve cinsiyeti ile organik ürün alımı arasında önemli bir ilişki görülmemiştir.

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LIST OF SYMBOLS/ABBREVIATIONS

Symbol	Explanation	Units used
EF	Ecological Foot Print	gha
FSC	Forest Stewardship Council	-
SPSS	Statistical Package for the Social Sciences	-
MARA	Ministry of Agriculture and Rural Affairs	-

1. INTRODUCTION

"Sustainable development" is a term that has become very popular because of threatened future of the world. Sustainability approaches on the regional basis improves socio-economic, environmental and material health status.

Sustainable community management has been increasingly important during the past several decades. The region turning their back on the liabilities they have created from last year into the sustainable assets of tomorrow (Walker, 2009). In developing countries, suffer from the influence of industrialized nations and the desire to regain the control over resources and to return to the values of the traditional cultures have also pushed the individuals to create them (Dawson, 2006).

Capacity and ecological footprint type calculations (measures of ecological unsustainability) for rural areas show just how vulnerable regions are to an interruption of the flows of water, food, energy and materials on which they depend. Evidence and current thinking suggests that within the next few years more than 50% of the world's populations will live in cities- the pressure on the cities' natural resource bases and their associated ecological footprints will only increase. Concerning the socio-economic factors the need for agricultural development is necessary. Ecological Footprint (EF) analysis compares human demand on nature with the biosphere's ability to regenerate resources and provide services. This resource accounting is contain the consumption of water, agricultural activities (biomass), building material and other resources are converted into a normalized measure of land area called ' global hectares' (gha).

Agricultural land use, which is one of the components of the ecological footprint, can be determined by the area used for the food and fiber for human consumption, animal feed and the production of oil crops and rubber (WWF, 2012).

The average biologically productive area per person worldwide is approximately 1.8 gha per capita. Many developed countries have an EF in the range of 3–5 gha, with the USA ranking highest. For the world at large it is estimated that the latter has decreased

from approximately 6 to 1.5 global hectares (gha) since the beginning of the century. Next, it is possible to compare EFs with the available ecological space for one person. According to the previous indicators, mankind nowadays overshoots the Earth's carrying capacity by approximately 0.3 gha per capita (Gössling et al., 2002). Within this frame EF is now widely used around the globe as an indicator of environmental sustainability.

For Turkey, certain regions have incomparable characteristics and supply basic principles of cittaslow concept. These regions are determined as Akyaka, Gökçeada, Halfeti, Perşembe, Seferihisar, Vize, Taraklı, Yalvaç and Yenipazar. Akyaka with its unique agricultural properties, products and also with well developed surface runoff system is accepted one of the cittaslow of Turkey. As it can be seen from the Figure 1.1. and 1.2. Akyaka which is located in Southeastern Turkey is a coastal township in Ula district of Mugla City, and its population is approximately 2800 (Akyaka Kent Konseyi, 2012).

Figure 1.1. Location of Akyaka town on Turkey's map (Google Maps, 2012).

Figure 1.2. Satellite map of Akyaka (Google Maps, 2012).

The geographical framework of the study encompasses the Akyaka town, Gökova municipality and its surrounding villages located in Mugla Province of Turkey. The vision is to transform the region into an entirely self-sufficient ecovillage based on sustainable technologies while creating a culturally and environmentally aware community in parallel. The coastal location of the town, mountainous topography, touristic potential of the region, historical and cultural values as well as local flora, fauna and agricultural potential are taken into account.

The envisioned ecovillage meets all its energy needs, including transport fuel, from locally available renewable sources such as wind power, solar radiation and energy crops with the ultimate goal of becoming carbon neutral. The infrastructure and buildings are modified for maximum water, energy and material efficiency, modern waste management and wastewater treatment techniques are in place and recycling programs are implemented. Agricultural activities for selected crops are carried out through organic farming to provide healthy nutrition for local people and visitors to eliminate environmental pollution and serve as a source of revenue for farmers.

An equal emphasis should be given to social issues and education of local community through series of awareness building initiatives. Active engagement of both local population and the visitors of the town must be achieved through “bottom-up” rather than “top-down” management style. Green concepts and sustainable practices will be cultivated and encouraged among all sections of the community.

The essential guidelines adopted throughout the study include the respect for local environment and all terrestrial and marine life forms as well as for the historical and cultural values of the region, preservation of natural attractives of the region “ecovillage” concept of the village, ensuring eligible sustainability and efficiency, zero emission principles, social equality and fair trade conditions for local producers.

Agriculture and tourim are the main sources of income for Akyaka. Farmer awareness can be increased after focusing on sustainable agriculture.

The data for this study is collected from farmers at the local marketplace and residents at restaurants, hotels of Akyaka. The information from questionnaires is analyzed by using Statistical Package for the Social Sciences (SPSS version 21.0) statistics program because of large and diverse amount of data. All data is entered to SPSS for further statistical analyses. Descriptive analyses, cross tabulation and independent samples t-test analyses are used to evaluation data.

2. LITERATURE REVIEW

Literature review section has been divided into three main sections: (1) Sustainable community, (2) Indicators of sustainable communities, (3) Sustainable agriculture.

2.1. Sustainable Community

A sustainable community is “one that is economically, environmentally, and socially healthy and resilient. It meets challenges through integrated solutions rather than through fragmented approaches that meet one of those goals at the expense of the others” (Institute for Sustainable Communities, 2011).

A sustainable community should be environmentally viable by protecting soil, air and water, acknowledging ecological limits, considering ecological balance and designing with nature (Seyfang, 2007). Moreover James and Lahti (2004) state that the natural resources should be wisely used including using renewable energies and minimizing non- renewable resources, reducing consumption, recycling, reuse, community-based food production, careful stewardship, and optimization. Furthermore a sustainable community should protect local and regional habitats, ecologically sensitive lands, encourage and enhance biological diversity, protect indigenous flora and fauna (Roseland, 2005).

Regarding the ecovillages, they can be categorized as a sub-group of sustainable communities (McCosh, 2001). Ecovillages are defined as “urban or rural communities of people, who strive to integrate a supportive social environment with a low-impact way of life. To achieve this, they integrate various aspects of ecological design, permaculture, ecological building, green production, alternative energy, community practices, and much more” (GENb, 2011). Ecovillage movement reaches an international level with the cration of the Global Ecovillage Network (GEN), in which all the ecovillages around the world are registered and connected (Jackson, 1998).

2.2. Indicators for Sustainable Communities

The literature also presents environmental objectives as an essential element of sustainable community (U.S. EPA, 2013). The elements of sustainability in sustainable communities are distributed among the following categories; (a) renewable energy, (b) integrated waste management, (c) water and wastewater issues, (d) sustainable fishery and coastal management, (e) sustainable transport, (f) green buildings, (g) social programs and administrative challenges, (h) organic agriculture. Classification of the elements under different categories allows for easier management of the issues and more efficient follow up of the processes. However, all aspects of sustainability covered within the study are related to each other, directly or indirectly, and thus an integrated approach must be adopted, taking into consideration the relationships between different elements.

2.2.1. Renewable Energy

The municipalities should advocate for institutional conditions that promote the use of renewable energy sources. A major element of this is a feed- in tariff that enables the producer of renewable energy to feed surplus electricity into the public grid at a guaranteed price (UBCCE, 2011).

Ecovillage developers can help residents to reduce the impact of home energy use by creating zero carbon buildings. Ecovillage will need to operate on 100 per cent renewable energy, or as close to 100 per cent as possible; for example, on-site gas back up may be necessary for periods of maintenance work (BioRegional Homepage, 2008).

In Findhorn Ecovillage, four community-owned wind turbines, which have a total capacity of 750kW, supply more than 100% of the community's electricity needs. Their system is unusual in that the community owns its own private electricity grid, the main campus having originally been private caravan park.The electricity produced by the turbines is sent to a substation that meters the flows, alters the transmission voltages and acts as a switching station. Using solar, wind and wood, combined with highly energy-efficient features in their new buildings, the Findhorn ecovillage now receives 28% of its total non-transportation energy from renewable sources. They expect to increase this

percentage as caravans are gradually replaced with energy-efficient new houses (Eco village Findhorn, 2013).

High technology products, such solar panels or electrical parts in wind turbines, have become a green mainstream technology with high competition and strong competitors. In many cases this encompasses components without high-tech, such as the towers of windmills. In other cases municipalities can adjust existing technology to their specific conditions and develop adjusted products and services (UBCCE, 2011).

2.2.2. Resource and Material Efficiency

Energy efficiency has become a subject for numerous awareness municipalities due to its relation to greenhouse gas reduction, which is in the public climate change mitigation discussion (UBCCE, 2011).

In Ecovillage Clevend, resource efficiency starts with use less—Ecovillage employs every advanced framing technique available and the multi-family design inherently uses less material overall. Resource efficiency also means select the right stuff. The two most used materials at Ecovillage, as with most buildings, are wood and concrete. Ecovillage calls for Forest Stewardship Council (FSC)-certified lumber or salvaged wood for everything from framing lumber to trim and cabinets. Concrete and concrete block at Ecovillage are specced for high content blast furnace slag or flyash, both waste materials that can replace up to 50% of the very energy-intensive Portland cement used in concrete. Lastly, from landclearing to packaging-wood, drywall, and cardboard waste will be recycled or processed for use on site (Ecovillage Clevelend, 2006).

Water efficiency plays a specific role where freshwater is a bottleneck. Even if there is sufficient freshwater supply: water supply consumes energy, and using water always means polluting water, which has to be purified. All this requires energy and cots for infrastructure establishment and maintenance. Energy efficient water pumps and other technical and maintenance measures reduce the water losses and improve energy efficiency (UBCCE, 2011).

2.2.3. Waste Management / Recyling

Waste management is on the top of the list when it comes to improving the environment and - last but not least - to the negotiations on the future membership of the European Union.

Turkish municipalities, have to prepare and implement the new waste management law according to the EU principles in the coming years. Depending on the number of inhabitants of the municipality or village this process has to be completed approximately between the years 2010 and 2014 (TBB, 2007).

Organic wastes can represent a large proportion of the solid waste stream in any rural community. Furthermore, farm households generate large amounts of manure that can pose a threat to the environment, especially watercourses, if not well managed because of nutrient overloading. Much concern about air, water and soil quality has been expressed in the past about the direct application of raw manure to agricultural land. Animal producers are being increasingly pressed upon to move towards environmental sustainability in managing the nutrients in the manure.

For farmers generating low amounts of wastes, a centralized composting facility using the various on-farm wastes can be set up within the rural community, using composting principles similar to those for individual on-farm composting (FAO, 2007).

2.2.4. Green Buildings

The green building industry has high potential for the sustainable communties. It encompasses the rehabilitation of existing buildings and eco-efficient new buildings. This includes green architecture and engineering (including insulation, modern windows, renewable energy appliances on the roof top, energy efficient heating, cooling and lighting, new construction materials), implementing this in construction, energy efficient installations and maintenance, eco-efficient construction materials, etc. (UBCCE, 2011).

In Ecovillage Findhorn, the construction of zero carbon buildings and the retrofitting of existing buildings offer some of the most cost-effective and most immediate strategies in response to climate change. The ecovillage at Findhorn has erected 61 ecological buildings to date and there are ongoing plans for the continued construction of an ecologically respectful built environment (Ecovillage Findhorn, 2013).

Rural areas, especially the more remote, low-density communities, face various challenges incorporating compact development, infill development, and smart growth land use planning principles. Despite these spatial limitations, a few rural community housing organizations working in larger rural communities had incorporated location and linkage techniques in their design (HAC, 2007).

2.2.5. Organic Farming

Organic Farming is a production method for green, which means in this case healthy and environmentally soundly produced, products. Such products can be produced for export and domestic markets where consumers are highly aware of healthy nutrition and for sustainable production. Auxiliary products and services such as cooling, drying, and coated packaging materials to keep the goods fresh during storage and transport can emerge around the organic farming products.

Starting as a market niche, the demand for products from organic farming has grown considerably during the last decade and is becoming mainstreamed in many European countries. West European retailers buy a large share of their products from foreign countries to meet the high demand in their countries. As organic farming methods and technology plays a crucial role, technology transfer is required to be supplied to farmers who intend to adjust their production. Getting into organic farming requires market research on market standards, such as quality standards and eco labels.

An important issue for farmers are the land regulations in the home country and the food quality regulation in the (domestic and export) countries. Founding a cooperative for organic farming may be a good solution to enable small farmers to find access to the market and it can even serve larger farming companies to supply goods under a common

quality label. Agriculture is a comparative economic strength throughout the region; strengthening this sector in greening farming should be in the interest of the municipalities (UBCCE, 2011).

2.3. Sustainable Agriculture

2.3.1. Introduction

Sustainable agriculture has defined and described in many ways. McIsaac defined sustainable agriculture as "one that, over the long-term, enhances the environmental quality and the resource base on which agriculture depends; provides for basic human food and fiber needs; is economically viable; and enhances the quality of life for farmers and society as a whole" (Bahgeri, 2010).

'Sustainable agriculture' is often used as a synonym for 'organic agriculture'. There are different definitions of 'organic', some stricter, some more pragmatic.

Organic agriculture is a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects. Organic agriculture combines tradition, innovation and science to benefit the shared environment and promote fair relationships and a good quality of life for all involved (IFOAM World Board, 2008).

According to International Federation of Organic Agriculture Movements (IFOAM) organic agriculture is based on four principles:

2.3.1.1. The principle of health. Organic agriculture should sustain and enhance the health of soil, plant, animal, human and planet. This principle points out that the health of individuals and communities cannot be separated from the health of ecosystems - healthy soils produce healthy crops that foster the health of animals and people.

Health is the wholeness and integrity of living systems. It is not simply the absence of illness, but the maintenance of physical, mental, social and ecological well-being. Immunity, resilience and regeneration are key characteristics of health.

The role of organic agriculture, whether in farming, processing, distribution, or consumption, is to sustain and enhance the health of ecosystems and organisms from the smallest in the soil to human beings. In particular, organic agriculture is intended to produce high quality, nutritious food that contributes to preventive health care and well-being. In view of this it should avoid the use of fertilizers, pesticides, animal drugs and food additives that may have adverse health effects.

2.3.1.2. The principle of ecology. Organic agriculture should be based on living ecological systems and cycles; work with them, emulate them and help sustain them. This principle roots organic agriculture within living ecological systems. It states that production is to be based on ecological processes, and recycling. Nourishment and well-being are achieved through the ecology of the specific production environment. For example, in the case of crops this is the living soil; for animals it is the farm ecosystem; for fish and marine organisms, the aquatic environment.

Organic farming, pastoral and wild harvest systems should fit the cycles and ecological balances in nature. These cycles are universal but their operation is site-specific. Organic management must be adapted to local conditions, ecology, culture and scale. Inputs should be reduced by reuse, recycling and efficient management of materials and energy in order to maintain and improve environmental quality and conserve resources.

Organic agriculture should attain ecological balance through the design of farming systems, establishment of habitats and maintenance of genetic and agricultural diversity. Those who produce, process, trade, or consume organic products should protect and benefit the common environment including landscapes, climate, habitats, biodiversity, air and water.

2.3.1.3. The principle of fairness. Organic agriculture should build on relationships that ensure fairness with regard to the common environment and life opportunities. Fairness is characterized by equity, respect, justice and stewardship of the shared world, both among people and in their relations to other living beings. This principle emphasizes that those involved in organic agriculture should conduct human relationships in a manner that ensures fairness at all levels and to all parties - farmers, workers, processors, distributors, traders and consumers. Organic agriculture should provide everyone involved with a good quality of life, and contribute to food sovereignty and reduction of poverty. It aims to produce a sufficient supply of good quality food and other products.

This principle insists that animals should be provided with the conditions and opportunities of life that accord with their physiology, natural behavior and well-being. Natural and environmental resources that are used for production and consumption should be managed in a way that is socially and ecologically just and should be held in trust for future generations. Fairness requires systems of production, distribution and trade that are open and equitable and account for real environmental and social costs.

2.3.1.4. The principle of care. Organic agriculture should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment.

Organic agriculture is a living and dynamic system that responds to internal and external demands and conditions. Practitioners of organic agriculture can enhance efficiency and increase productivity, but this should not be at the risk of jeopardizing health and well-being. Consequently, new technologies need to be assessed and existing methods reviewed. Given the incomplete understanding of ecosystems and agriculture, care must be taken.

This principle states that precaution and responsibility are the key concerns in management, development and technology choices in organic agriculture. Science is necessary to ensure that organic agriculture is healthy, safe and ecologically sound. However, scientific knowledge alone is not sufficient. Practical experience, accumulated wisdom and traditional and indigenous knowledge offer valid solutions, tested by time.

Organic agriculture should prevent significant risks by adopting appropriate technologies and rejecting unpredictable ones, such as genetic engineering. Decisions should reflect the values and needs of all who might be affected, through transparent and participatory processes.

Some of the benefits of organic agriculture can include: Reduced environmental impact from agriculture (e.g. reduced risk of pesticide residues and of nitrate in groundwater), lowered pesticide residues and nitrate leading to healthy nutrients and increased content of secondary metabolites, improved biodiversity in agricultural fields, created job opportunities and market for local people, strengthened regional development with regional interaction along the product chain from field to table.

2.3.2. European Union Regulation and Standards

During the last decades, agricultural development policies have been successful at emphasizing external inputs, such as pesticides, inorganic fertilizers, and animal feed stuffs as the means to increase food production. These external inputs have, however, gradually substituted for natural processes and resources, rendering them less powerful (Bahgeri, 2010).

Standards regulate production methods and in some cases final output for organic agriculture. As early as the 1970s private associations certified organic producers. In the 1980s, governments began to produce organic production guidelines. In the 1990s, a trend toward legislated standards began, most notably with the 1991 EU-Eco-regulation developed for European Union, which set standards for 12 countries, and a 1993 UK program. The EU's program was followed by a Japanese program in 2001, and in 2002 the U.S. created the National Organic Program (NOP). As of 2007 over 60 countries regulate organic farming (IFOAM 2007:11). In 2005 IFOAM created the Principles of Organic Agriculture, an international guideline for certification criteria. Typically the agencies accredit certification groups rather than individual farms (IFOAM, 2011)

The production of organic products in Europe is regulated by Council Regulation EEC 834/2007 of June 2007 on organic production of agricultural products and foodstuff. This

regulation defines minimum requirements for cultivation, production and marketing and sales. Products referring to this regulation are able to get the official organic label or Bio-label. There are in addition a large number of national or regional organic labels, but the IFOAM principles, or at least parts of them, often constitute a common reference. Although the EC requirements are often lower than the national requirements of European countries that have a long history in organic farming, most countries have combined pre-existing national labels with the European certification (Bahgeri, 2010).

2.3.3. Turkish Regulation and Standards

In 2005 organic agriculture occupied around 1% of the 26 million ha agricultural land. The first organic export products of Turkey were dried figs, dried sultanas (seedless raisins), dried apricots, hazelnuts, cotton, and rose oil. In recent years olive oil, grains, chick peas, lentils, honey, anise, fennel, coriander seeds, pistachios, pine nuts, various fruits and vegetables, and milk and other animal products were added to the list. The variety of major organic crops is the same as for the major conventional crops. Value-added products like tomato paste, fruit juices, bread, olives, pasta, and jams have also been produced for both the domestic and export markets (Ananias, 2006).

In December 1994 the first Turkish regulation for organic production came into force. It was prepared for countries exporting organic products to Europe to meet the standards of EC 2092/91. The Turkish standards have not been updated as often as the EU standards, but a partially revised regulation was introduced in 2002 just before Organic Farming Law 5262 came into force in December 2004. Following this, the new Regulation on ‘Essentials and Implementation of Organic Farming’ came into force in June 2005. In each stage harmonization of Turkish regulations with existing EU standards has been considered.

Currently there are nine certification bodies licensed and controlled The Ministry of Agriculture and Rural Affairs (MARA) all operating according to the Turkish law and regulation and in line with the European standards. Several certifiers also do their controls according to Biosuisse, JAS, biodynamic standards, and the NOP, depending on the standards of the targeted market. All the certifiers are accredited according to EN 45011 or ISO 65 by either national or foreign accreditation bodies.

In Turkey, first "Directive regarding the Principles of Organic Agriculture and its Application" was prepared and issued on the Official Gazette 24812 dated 11.07.2002, and then, another directive was prepared basing on "Organic Agriculture" law 5262 dated 1.12.2004. The studies on this subject are currently ongoing and they are continuously updated (Organic Farming Law, 2004).

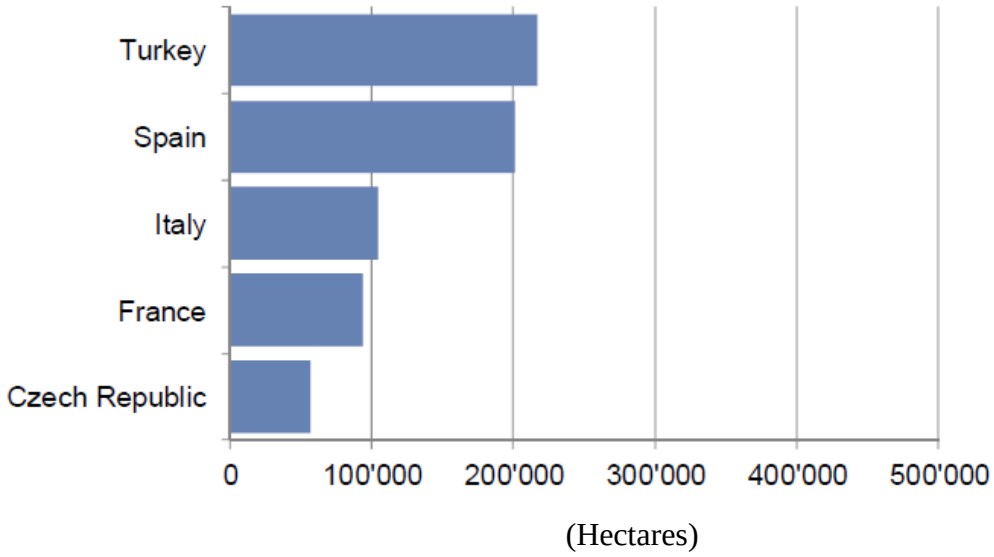

Figure 2.1. Europe: The five countries with the highest increase of organic agricultural land 2008-2009 (Willer, 2011).

In 1994 with the introduction of first regulation in Turkey, significant progress has been made in organic farming field (Bayram, 2007). The organic agricultural land area (35 million hectares in 2008) has increased by three million hectares or 9% between 2007 and 2008. Approximately 31 million hectares worldwide are now grown organically. Turkey has got a very big potential. The distribution is shown in Figure 2.1.

2.3.4. Consumer and Producer Cooperation

According to the Victor Ananias a few years ago less than 5% of the population was informed about organic, and information is scarce and irrelevant. There also has been confusion about the terminology of organic. In the new legislation of 2002, after lobbying, especially by NGOs, the words Ekolojik', 'Biyolojik' and 'Organic' is synonymous. This confusion and lack of promotion of the national logo made it quite difficult to introduce

organic products to the public. Another obstacle is that the media generally have presented organic products as a high class niche market and unaffordable. The only concrete change in the public eye and even in the media's exposure has been achieved with concrete and successful projects such as the well-promoted 100% Organic Market in Istanbul.

Besides the private sector activities for the promotion of organic agriculture, the government has taken some concrete steps to support it, e.g. an obligation in the organic law saying that 'the Higher Board of the Turkish Radio and Television Corporation shall take necessary measures and initiatives to ensure that national, regional and local radio and TV stations broadcasting in the territory of the Republic of Turkey give space to educative programs about organic farming for at least 30 minutes a month' (Ananias, 2006).

2.4. Organic Consumption

There is a growing demand for organic foods, which is driven by the consumers' perceptions of the quality and safety of organic foods as well as by the positive environmental impact of organic agricultural practices. This demand is expected to be grown in next years (Vindigni et al., 2001).

According to study carried out by World of Organic Agriculture 2007, the value of global sales of organic food and drink increased by 43% between 2002 and 2005 (European Comissions, 2013).

The organic food purchasing frequency of the respondents in Germany can be seen in Figure. 55.1% of the respondents never purchased organic food (Bravo et al., 2013).

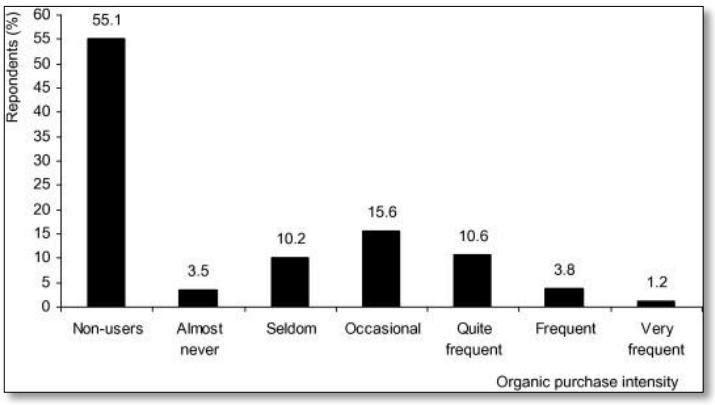

Figure 2.2. Organic food purchasing frequency (Bravo et al., 2013).

The factors that drive the organic food market are related with environmental and animal health issues, improved taste, and better quality (Boccaletti, 2009).

A study carried out by Davies et al, 1995 showed that health and environmental reasons are the main factors that effect purchasing organic food. These two factors are reported as the major ones that have an effect on organic food consumption in 2009 too (Boccaletti, 2009). These findings are inline with Magistris and Gracia, 2008.

Almost 50% of the respondents indicated that they prefer organic food since it is better for health. Second perceived motivation by 15% is reported as preserving the environment (Boccaletti, 2009).

Price and availability is found to be barriers for organic food purchasing. The actual organic food purchasers are reported as females who has children an having gigher income and aged between 30-45. Davies et al. (1995) and Onyango et al. (2007) reported that females and young people purchase organic foods on a regular basis.

Another study showed that the choice of purchasing organic food is influenced by the consequences of purchasing of organic foods on health, environment and animals. Only 1-11% of the respondents reported that the consequences will result from their purchase of organic foods is not at all likely or important on the choice of purchasing organic food (Magnusson et al., 2003).

Krystallis and Chryssohoidis, 2005 findings show that willingness to pay for organic food depends on food quality and security, trust in the certification, and, for some products, brand name (Krystallis and Chryssohoidis, 2005).

When it comes to paying more money, more than 55% of the respondents would pay a premium not larger than 15% of regular price. About 30% of the respondants indicated that they would not anything a premium for purchasing organic food (Boccaletti, 2009).

Same study also investigated the correlation between purchasing organic food and age. It was found that, the younger the respondents the more likely they were to be positive towards organic foods (Magnusson et al, 2003).

On the other hand, purchasing organic food products differs between countries. The share of organic food consumption in total food consumption depends mainly on political regulation such as legal definitions and standards, financial support to farmers, and a national labeling system. Also, the differences between soil conditions, distribution system, and the size of the premium price demanded for organic food products in different countries effect (Thøgersen, 2010).

3. MATERIALS AND METHODS

The aim of study to assess the current environmental state of the coastal town of Akyaka located in Southwest of Turkey and to arise the sustainability approach of the town with special emphasize on organic farming for local community and visitors.

In the Citta Slow the best interest for the sustainable indicators is agriculture. For this reason, the study is carried out.

Within this respect, Organic Consumer's Questionnaire for Akyaka Region was conducted among citizens of Akyaka Region in order to assess the state of organic farming applications and level of awareness on said topic among farmers as well as to assess the degree of interest of local community on organic products. Two separate questionnaires were prepared to carry out the survey; one for farmers and the other one for consumers.

Details about questionnaire; its development, target group, components, data analyses approach will be stated in this chapter.

3.1. General Data Collection

The purpose of Organic Consumer's Questionnaire for Akyaka Region is to obtain information, to keep on record and to make decisions about related issues about Akyaka Region. The data achieved covers detailed information about level of environmental pollution control and its management, awareness and interest of organic farming, sustainability concerns problems.

3.1.1. Environmental Management Approaches by Akyaka Municipality

Rural environment is the combination of various natural and artificial factors in the scope of rural areas centered on rural residents, which include land, air, water, plant, animals, roads, and structures etc. The unplanned development in rural areas leads to severe problems from the point of environmental pollution control and its management.

Some of the environmental measures indicated by Akyaka Municipality are summarized as follows:

- Total packaging waste is 735 tons in winter and 1800 tons in summers which can be summarized as 245 t/month and 600 t/month respectively. On the other hand, approximately 3.5 tones of organic waste are collected in winter and 12 tones in summer period. Some of these organic wastes are used as compost application by some residents. This application is supported by Akyaka municipality through relevant recycling programmes.
- In addition to this, cullet is collected in glass containers by a private company in the region. A very important awereness was observed in the markets that, the markets give the service for biodegradable bags (Geri Kazanım Projesi, 2012).
- Another awereness activity was noticed for marines. Azmak River which has a powerful stream and fresh water has been under pressure because of restaurants and tour boats. The boats take the responsibility of their wastes (Azmak Kıyı Bandı Projesi, 2012).

3.1.2. Awareness and Interest of Organic Farming

Due to the consumers' concern for their health and the rise of their ecological consciousness demand for organic food is increasing. According to this trend there is an increase in the amount of total agricultural land surface used for organic farming (Boskovic et al., 2009).

Most growers claim to be performing organic agriculture when they use limited amount of pesticides, referring to the fact that pesticide consumption for their farming activity and that it is inevitable. Currently sesame is the only product that is actually being produced by organic farming as claimed by Akyaka Municipalitiy.

There is an expectation that The Ula Chambers of Agriculture the state will support their organic farming activity. Owing to irregular shape, average smaller size of organic products, lower productivity, and higher production cost and low demand, they do not

prefer to perform organic farming. Farmers believe that customers should be aware of the pros and cons of the organic products before they start producing those (The Ula Chambers of Agriculture, 2012).

3.1.3. Social Concerns for Sustainability

Most citizens of Akyaka disagree with the “cittaslow” title of the town due to high number of visitors and crowdedness, particularly during summer season. Although Akyaka is accredited as “cittaslow”, the town is suffering about the problems related to the content of this certificate. Concerning slow city criteria; the local citizens claim that cultural activities are not satisfactory. Moreover, the health and safety issues are out of concern fro the point of street animals. On the top of that the local transportation route was to be reorganized due to inconvenience realize by trucks and cars. In general, there is a decrease of area available for farming due to construction activities.

Underground waters are at risk of contamination due to lack of the sewage management system as well as high pesticide usage in agricultural activities. Citizens are not pleased to have a certain time assigned for waste collection (Figure 3.1.). There is a mosquito problem in town, particularly in summer season due to pollution around Azmak River. There is severe coastal zone pollution due to increasing number of restaurants and resorts located along by the riverbank of Azmak River. According to fishery cooperatives of the town, illegal fishing in forbidden areas is being conducted.

Figure 3.1. Uncollected waste problem in the town

3.1.4. Recommendations for Sustainable Development Indicators for Akyaka Region

The aspects of sustainability are interconnected and related to each other and understanding these relationships is crucial for successful implementation of an ecovillage concept. Figure 3.1. illustrates the basic connections between the focus points; for instance, agricultural activities provide feedstock (canola) for renewable fuel production (biodiesel) which in turn can be used in agricultural machinery as well as public and sea transport.

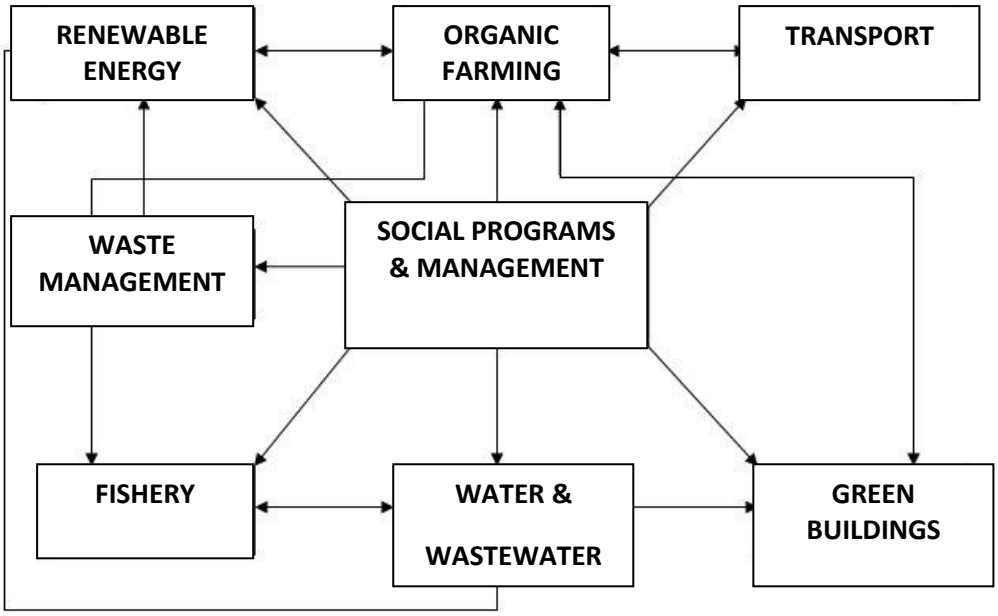

Figure 3.2. Relationships between different elements of sustainability in ecovillage

In accordance with objectives of the study, categorized recommendations can be summarized as follows:

3.1.4.1. Renewable Energy. Renewable energy recommendations are shown below.

- Utilization of wind power for electricity production via installment of wind turbines,
  - Measure or otherwise obtain the wind power potential of the region,
  - Collect information regarding annual electricity consumption in the region,
  - Perform economic and environmental assessment of the option via LCA methodology,
- Utilization of solar power for electricity and heating via installment of solar panels,
  - Determine the average annual/seasonal solar radiation received by the region,
  - Perform economic and environmental assessment of the option via LCA methodology,
  - Consider replacement of rooftop solar panels with solar roof tiles,
- Technical, economic and environmental evaluation of geothermal energy utilization for domestic usage,

- Local biodiesel production from canola,
  - Estimation of the annual biofuel demand of the region (road and sea transport, agricultural machinery),
  - Evaluation of the feedstock (canola) production potential such available agricultural land, yield per area sown and other agricultural considerations,
  - Determination of location and set up of biodiesel production plant, all related technical calculations,
  - Planning the delivery and use stages of the biodiesel, blend ratios,
  - Assessment of environmental benefits of replacing diesel fuel with biodiesel in the region, total carbon reduction via LCA methodology,
  - Conducting awareness-raising educational campaigns within the community on importance and environmental benefits of using biodiesel,
- Installation of small-scale wheel turbines into Azmak river for electricity production,
  - Assessment of the technical and economic feasibility of installation.

3.1.4.2. Intagrated Waste Management. Integrated waste management recommendations are shown below.

- Existing waste collection system will be examined and improved where applicable by adopting best management practices and cost effective solutions,
- Existing recycling programs will be expanded to cover more materials and higher recycling rates,
- Recycling of materials, particularly bottles and packaging materials will be encouraged among visitors and local population through education campaigns, seminars and via printed, simple to understand brochures,
- Separation at source (i.e. household) will be encouraged via awareness raising campaigns and workshops,
- A reuse room could be opened to find or give away household objects, clothes, toys, books and more among local population,
- Dumping of waste to river and sea shore will be prevented by applying penalties and fines,

- Agricultural waste and animal manure will be recycled back and used in agriculture,
- Sludge from wastewater treatment plant will be applied as fertilizer to agricultural lands.

3.1.4.3. Water and Wastewater Issues. Water and wastewater recommendations are shown below.

- Reduction of water use in houses and hotels,
  - Separation of grey water and black water and reuse of grey water for toilet flushing and garden irrigation,
  - Installation of economic, optically controlled faucets,
  - Installation of low-volume flush toilets,
  - Collection of rainwater and its reuse for household purposes,
- Economic use of water in agriculture by switching to organic farming,
- Development of infrastructure for connection of currently isolated villages to central wastewater treatment facility.

3.1.4.4. Sustainable Fishery and Coastal Management. Fishery and coastal management recommendations are shown below.

- Designation of special protection areas with different fishing permission levels,
- Run sustainable fishery certificate programs can be run to facilitate the process,
- Sustainable utilization of fishery waste products,
- Removal of ghost nets from sea shores for protection of marine life.

3.1.4.5. Sustainable Transport. Sustainable transport recommendations are shown below.

- Use of locally produced biodiesel blends in public transport and diesel-powered boats,
- Route optimization for efficient fuel use and emission reduction,

- Education of community on importance of biodiesel via visual, easy-to-understand media,
- Encouragement of sustainable means of transport, such as biking through awareness raising campaigns.

3.1.4.6. Green Buildings. Green building recommendations are shown below.

- Increasing the energy efficiency of the building.
  - Installment of proper thermal insulation, preferably using locally available materials,
  - Modifications to building to achieve maximum natural illumination,
  - Replacement of regular light bulbs with energy-efficient fluorescent ones,
  - Prevention of heat loss from houses by replacing regular windows with well-insulated, double or triple glass windows,
- Increasing the water efficiency of the buildings,
- Maximize the use of local building materials,
- Application to LEED Green Building Certification for selected buildings,
- Preservation of local architectural features of buildings, prevention of constructions that will disrupts the spoil the authentic, traditional house image of town,
- Prevention of construction activities on agricultural areas.

3.1.4.7. Social Programmes and Administrative Challenges. Recommendations for social programmes and administrative challenges are shown below.

- Conducting cultural, environmental and social programs directed towards visitors and local population for sustainable living,
  - Encouraging reuse, recycling and separation at source,
  - Informing population on importance of renewable energy sources and global warming,
  - Informing population on importance of biodiesel in public transport,
  - Explaining the health, economic and environmental benefits of organic agriculture to:

    - General population
    - Farmers
  - Explaining the environmental and economic benefits to people for modifying their houses to make them greener,
  - Encouraging the use of biking for health and environmental reasons,
- Merging the Gökova and Akyaka municipalities and the surrounding seven villages into one to reduce bureaucratic burdens and speed up the decision making process.

3.1.4.8. Organic Farming. Organic farming recommendations are shown below.

- Assessment of the current situation and data collection; total agricultural area, area cultivated for each crop type, the land ownership distribution and maps will be obtained from the municipality and provincial directorate,
- Information regarding the irrigation water, fertilizer, pesticide, herbicide requirements (amounts and types) and yield per sowed area for each plant type will be collected from farmers and supported by information from literature,
- Separately collect information from farmers already practicing organic farming; personal experience, impacts on yield, replacements for traditional fertilizers/pesticides/herbicides, success stories,
- Environmental and economic benefits of switching to organic farming will be conducted for each plant species. Obtained results will be presented and explained to farmers in order to motivate the transition,
- Each plant type will be considered separately taking into consideration the specific needs of each agricultural plant. The main plant species of the region include: Oranges, olives, tomatoes, corn, wheat, rye, sesame, lavender, daphnia, sage and lettuce. Canola and thistle (medical herb) grow wildly in the region and will be utilized,
  - Olive Oil Cold Press Machine will be installed to give the olive oil growers an opportunity to maximize their profits and produce their own oil,
  - Sesame oil extraction machine will be installed to provide sesame growers an opportunity to produce the oil on their own, thus eliminating the middle company and increasing profit,

- Orange calibration machine will be installed to give the farmers opportunity to separate the oranges according to their sizes in order to improve the marketing strategy,

- Provide technical and administrative support to all farmers that switch to organic farming in order to assist them in obtaining Organic Certification for their products,
- Organic food market will be set up on one of the main touristic routes, the Eucalyptus Street,
- Seminars and meetings will be held with participation of both farmers and the local community to inform people on environmental and health benefits of organic food.

3.2. Research Methodology for Organic Agriculture Study

3.2.1. Sample and Demographic Profile of the Respondents

In this study, questionnaires were conducted with farmers at the local marketplace and local residents. The number of participants is 135 and this corresponds to 6.6% of the total population of Akyaka. The data collected through questionnaires were analyzed by using Statistical Package for the Social Sciences (SPSS, version 21.0) statistics program. This survey aims to provide data on organic food consumption.

Table 3.1. Demographic profile of the respondents

		≤30	31-50	≥51		
AGE	Frequency	46	54	35		
	Percent	34.1%	40.0%	25.9%		
		Female	Male			
GENDER	Frequency	60	75			
	Percent	44.4%	55.6%			
		<10.000 TL	10.000 TL-20.000 TL	>20.000 TL		
INCOME	Frequency	47	37	44		
	Percent	34.8%	27.4%	32.6%		
		Student	Government Employee	Private Sector Employee	Farmer	Other
OCCUPATION	Frequency	14	16	34	32	39
	Percent	10.4%	11.9%	25.2%	23.7%	28.9%

Table 3.1 shows the descriptive findings of the four major demographics variables. Age and income levels are recoded from the original forms into less segmented levels. Originally, age levels were of the ranges: less than 30; 31-40; 41-50 and 51 and more. According to the findings, the middle segments for 31-40 and 41-50 were merged into one segment with the outcome shown in Table 3.1. Originally, income levels were of the ranges: below 10.000 TL; 10.000-20.000 TL; 20.000 TL-30.000 TL and higher than 30.000 TL. According to the findings, the middle segments for 10.000-20.000 TL; 20.000 TL-30.000 TL were merged into one segment with the outcome shown in Table 3.1.

As seen in Table 3.1, the sample consists mainly of young people in the below 30 range (34.1%) and early adults in the 31-50 range (40.0%).

Gender distribution is relatively equal. There is only around 5% difference between males and females that contribute to the study. It can be concluded that this study represents the preferences of males and females relatively equally.

Table 3.1 also shows that there are participants with various occupations in the study and the two main groups are private sector employees and farmers. Since farmers are the ones who are directly related to organic food, their contribution to the survey is very crucial. This is the main reason why they are contacted in this study.

3.2.2. Preparation of the Questionnaire

A pilot survey was conducted with 10 randomly selected people to see whether the questions were understood clearly or not.

These 10 respondents did not have any problems about understanding the questions and applications, as a result; the feedback achieved from respondents was satisfactory.

In order to evaluate the attitude toward organic product consumption and organic farming activities, some questions were asked about general organic food purchasing habits and advantages and disadvantages of organic food consumption.

3.2.3. Components of the Questionnaire

Survey questionnaire is composed of three parts: (1) Demographic characteristics of the consumers, (2) General Organic Food Purchasing Habits, (3) Advantages and Disadvantages of Organic Food Consumption.

Demographic characteristics part includes 4 questions regarding gender, age, education and income.

The second section of the questionnaire aims to determine attitude toward organic food consumption and organic food purchasing habits in general. It includes questions mainly focusing on respondents' food shopping behaviour. These questions were as follows:

- Where respondents do most of their food shopping,
- Whether respondents have ever purchased organic food,
- Organic food purchasing frequency,
- Reasons for not purchasing organic food products,
- Whether respondents would purchase organic food products if they were less expensive,
- How much of their food shopping budget would be spent on organic food products if their prices were equivalent with non-organic products,
- Whether respondents are aware of the terms "fair-trade" and "genetically modified",
- Whether respondents are aware of the health problems arising from genetically modified food consumption,
- Whether respondents would shop from markets selling only organic products if their prices were equivalent with already available options,
- Whether respondents would shop from markets selling only organic products if their prices were lower than already available options,
- Which definition respondents find most suitable for organic products,

- Respondents personal diet preferences (vegan, vegetarian, mostly vegetarian and non vegetarian),
- Evaluation of organic products according to taste, price, accessibility, healthiness and environmental concerns,
- Whether respondents would prefer organic products if they were served in restaurants,
- How frequently they would prefer being served organic products in restaurants
- Reasons for not preferring organic food products,
- The importance of various factors respondents give importance to in the agricultural products they purchase.

Nearly all of the questions have been asked by using nominal and ordinal scales. Only the evaluation of organic products according to taste, price, accessibility, healthiness, and environmental concerns has been asked by using 5-point interval scale from 1: very bad to 5: very good.

3.2.4. Data Analyses

The Statistical Package for the Social Sciences (SPSS, version 21.0) was used to analyze the data collected through questionnaires.

The following analyses were done:

- Descriptive analyses were done for demographic and behavioral characteristics of consumers.
- Cross tabulation, independent samples t-test, and ANOVA analyses were conducted between demographic variables (age, gender and income) and variables about organic food consumption.

4. RESULTS AND DISCUSSION

4.1. General Findings About Organic Food Consumption

4.1.1. General Organic Food Purchasing Habits

Table 4.1. Weekly food shopping

	Frequency	Percent
Supermarket	41	30.4
Convenience store	14	10.4
Public market	70	51.9
Internet	1	.7
Other	9	6.7
Total	135	100.0

Respondents have been asked where they do their weekly food shopping. Table 4.1 shows that, in Akyaka Region, more than half of the locals are shopping from public markets, which shows that there is a direct contact between the producer and the consumer. This may be an advantage for the promotion of organic food. Farmers may have a direct influence on consumers.

Table 4.2. Organic food purchasing

	Frequency	Percent
Yes	83	61.5
No	52	38.5
Total	135	100.0

Organic food purchasing ratio is higher than ‘non-organic’ food purchasing ratio as it can be seen from Table 4.2. It can be stated that more than a half of the residents in Akyaka Region have purchased organic food products.

Table 4.3. Organic food shopping frequency

	Frequency	Percent	Valid Percent
Once a week	51	37.8	60.7
Twice a month	7	5.2	8.3
Once a month	7	5.2	8.3
Less frequently	19	14.1	22.6
Total	84	62.2	100.0
Missing System	51	37.8	
Total	135	100.0	

Table 4.3 represents the organic food shopping frequencies of the residents. The results of weekly organic food shopping illustrates that 37.8% of the people have the habit of consuming organic food regularly, once a week. However, another 24.5% purchase organic food less frequently. This shows that although some residents have the habit of consuming organic food products regulary, another important part of the sample does not have a regular consumption and purchasing pattern.

Table 4.4. Reasons for not purchasing organic food

	Frequency	Percent	Valid Percent
Too expensive	15	11.1	28.3
Inadequate choice	6	4.4	11.3
No access for organic products	23	17	43.4
Dislike the image/packaging	2	1.5	3.8
Dislike the taste	2	1.5	3.8
Other	5	3.7	9.4
Total	53	39.3	100.0
Missing System	82	60.7	
Total	135	100.0	

The main reasons of not purchasing organic food can be seen in Table 4.4. Having no access for organic products is the main reason that prevents people from buying organic food. This is closely followed by the high prices of organic food.

Table 4.5. Would you buy more organic products if they were less expensive?

	Frequency	Percent
Yes	106	78.5
No	13	9.6
Maybe	16	11.9
Total	135	100.0

Around 80% of the residents that do not purchase organic food state that they would buy organic food if it was less expensive. This shows that, most of the residents of Akyaka

are aware of organic food. However, high prices prevent them from purchasing organic food.

Table 4.6. Cost effect on organic food purchasing

	Frequency	Percent
0-20%	11	8.1
20-40%	16	11.9
40-60%	23	17.0
60-80%	22	16.3
80-100%	63	46.7
Total	135	100.0

The results of Table 4.6 are in consistency with that of Table 4.5. If organic food costed the same with non organic ones, around 50% of the people say they would do 80-100% of their food shopping from organic goods.

4.1.2. Advantages and Disadvantages of Organic Food Consumption

Table 4.7. Are you aware of the terms "fair-trade" and "genetically modified"?

	Frequency	Percent
Yes	112	83.0
No	23	17.0
Total	135	100.0

Table 4.7 shows that only 17 % of the residents are not aware of the terms ‘fair-trade’ and ‘genetically modified’.

Table 4.8. Are you aware that there are health risks associated with eating genetically modified foods?

	Frequency	Percent	Valid Percent
Yes	92	68.1	68.7
No	42	31.1	31.3
Total	134	99.3	100.0
Missing Sistem	1	.7	
Total	135	100.0	

It can be seen from Table 4.8 that although residents are mostly aware of the term "genetically modified", awareness drops slightly when they are asked specifically about their awareness regarding the health risks associated with genetically modified food.

Table 4.9. If an organic only supermarket was locally available for you to do your shopping at, would you shop at it if the prices are the same as current organic food prices?

	Frequency	Percent	Valid Percent
Yes	88	65,2	66.7
No	17	12,6	12.9
Maybe	27	20,0	20.5
Total	132	97,8	100.0
Missing System	3	2,2	
Total	135	100.0	

According to the results, more than 60% of the people would buy organic food if it is available in their local supermarket with same price.

Table 4.10. If an organic only supermarket was locally available for you to do your shopping at, would you shop at it if the prices are lower than current organic food prices?

	Frequency	Percent	Valid Percent
Yes	92	68.1	69.2
No	20	14.8	15.0
Maybe	21	15,6	15,8
Total	133	98,5	100,0
Missing Sistem	2	1,5	
Total	135	100.0	

The results of Table 4.10 shows that, providing less expensive products has a minor effect on purchasing organic food, when it is provided in a supermarket, since the results of Table 4.9 and 4.10 are very similar to each other.

Table 4.11. Which of the following do you associate with organic food?

	Frequency	Percent	Valid Percent
Better tasting	21	15.6	15.7
Better for my health	71	52.6	53.0
Better for animals	4	3.0	3.0
Contains dirt and bugs	3	2.2	2.2
Better for the environment	13	9.6	9.7
Expensive	14	10.4	10.4
No opinion	8	5.9	6.0
Total	134	99.3	100.0
Missing System	1	.7	
Total	135	100.0	

The results of Table 4.11 shows that around 50 percent of the residents associate organic food with better health, which may mean that they prefer/would like to prefer organic food for their own health. Better taste, high prices and being better for the environment are also some of the important attributes of organic food according to the residents. However, a minor 6% of the people have no opinion about what organic food means.

Table 4.12. Which of the following options best describes your consumption habits?

	Frequency	Percent
Vegan	7	5.2
Vegetarian (not meat, fish or chicken)	12	8.9
Mostly vegetarian	8	5.9
Not vegetarian	108	80.0
Total	135	100.0

Most of the residents are not vegetarian according to Table 4.12.

Table 4.13. Please evaluate organic foods according to their "taste, price, accessibility, healthiness and environmental friendliness" (Descriptive Statistics)

	N	$\overline{x}$ (over5)	Std. Dev.
Healthiness	131	4.55	.82
Environmental Friendliness	131	4.34	.96
Taste	130	4.24	1.23
Accessibility	131	2.49	1.21
Price	131	2.05	1.11

1: Very bad; 2: Bad; 3: Fair; 4: Good; 5: Very good.

The finding shows that respondents evaluate healthiness as the most important attribute of organic food products, closely followed by environmental friendliness and taste. However, their evaluations about the accessibility of such products and their prices are negative.

Table 4.14. If dining services offered organic and non-organic food varieties, would you choose organic when possible?

	Frequency	Percent	Valid Percent
Yes	106	78.5	79.1
No	28	20.7	20.9
Total	134	99.3	100.0
Missing System	1	.7	
Total	135	100.0	

If organic products are served in dining services, a large part of respondents say they would prefer this according to Table 4.14.

Table 4.15. Frequency of preference of organic food products in dining service

	Frequency	Percent	Valid Percent
Always	68	50.4	62.4
Very often	26	19.3	23.9
Sometimes	13	9.6	11.9
Almost never	2	1.5	1.8
Total	109	80.7	100.0
Missing System	26	19.3	
Total	135	100.0	

While approximately 50% say they would “always” prefer organic food when it is served, approximately 29% say they would “often” or “sometimes” prefer this.

4.2. Relational Findings

Several analyses were carried out in order to determine whether there is a relationship between demographic variables and organic food consumption variables. The findings of these analyses will be presented in this chapter.

- Demographic Variables
  - Age : ≤30, 31-50, ≥51
  - Gender: Male, Female
  - Annual Income: Below 10.000 TL, 10.000 TL-20.000 TL, higher than 20.000 TL.

In Table 4.16, age was recoded into three groups for analysis.

Table 4.16. Recoded age (three group)

	Frequency	Percent
11-30	46	34.1
31-50	54	40.0
51+	35	25.9
Total	135	100.0

Table 4.17. Recoded yearly personal annual income

	Frequency	Percent	Valid Percent
Below 10,000 TL	47	34.8	36.7
10,000 TL-20,000 TL	37	27.4	28.9
Above 20,000 TL	44	32.6	34.4
Total	128	94.8	100.0
Missing System	7	5.2	
Total	135	100.0	

In Table 4.17, yearly personal annual income was recoded for analysis.

- Organic Food Consumption Variables Included in Analyses
  - Organic Food Purchasing: Do you ever buy organic food or drink products? (Yes/No)
  - Cost Effect on Organic Food: For analytical purposes this variable has been recoded and the resulting groups are: 0-40%, 40-80% and 80-100% . If organic food costed the same as their non-organic equivalents, roughly what % of your food shopping would be spent on organic items? (0-40% / 40-80% / 80-100%)
  - Awareness of Health Risks Associated with Eating Genetically Modified Food: Are you aware that there are health risks associated with eating genetically modified foods? (Yes/No)
  - Evaluation of Organic Foods According to Their "Taste, Price, Accessibility, Healthiness and Environmental Friendliness": Please evaluate organic foods according to their "taste, price, accessibility, healthiness and environmental friendliness". Each variable was measured with a 5 point interval scale as follows: 1:very bad; 2: bad; 3: fair; 4: good; 5: very good.

Table 4.18. Recoded organic food shopping frequency

	Frequency	Percent	Valid Percent
Once a week	51	37.8	60.7
Less frequently	33	24.4	39.3
Total	84	62.2	100.0
Missing System	51	37.8	
Total	135	100.0	

In Table 4.18, it was recoded for analysis that how often people purchase organic food or drink products.

Table 4.19. Recoded cost effect on organic food

	Frequency	Percent
0-40%	27	20.0
40-80%	45	33.3
80-100%	63	46.7
Total	135	100.0

In Table 4.19, it was recoded for analysis that if organic food costed the same as their non-organic equivalents, roughly what % of your food shopping would be spent on organic items.

4.2.1. Results of the Crosstabulation Analysis Between "Age" and " Organic Food Purchasing"

No significant relationship has been found between age and organic food purchasing. The result of the cross tabulation of age and organic food purchasing was insignificant (chi square value=, 390 df=2, $p<0.05$). There is no statistically significant relationship between these two variables because of $\chi 2$ significance value.

Table 4.20. Recoded age (three group) and organic food purchasing

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	1,885[a]	2	**,390**
Likelihood Ratio	1,906	2	,386
Linear-by-Linear Association	,030	1	,861
N of Valid Cases	135		
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 13.48.			

4.2.2. Results of the Crosstabulation Analysis Between "Age" and " Cost Effect on Organic Food Purchasing"

A partially significant relationship has been found between age and cost effect on organic food purchasing. The result of the cross tabulation of age and cost effect on organic food purchasing is insignificant at the 95% level but significant at the 90% level (chi square value=, 053, likelihood ratio=, 050, df=4, $p<0.05$). There is a partially significant relationship between these two variables.

We analyzed the age effect on organic food purchasing in table 4.21. The table shows that as 18.5% of participants under the age of 30 allocate more money from their budget. As 20.7% of participants are under the age of 51 allocate the high amount of total budget in order to buy organic items. Compared to the participants, organic food buyers tend to be younger than 51 ages. The result indicated that people younger than 51 age more environmentally conscious and willing to pay more money for organic items, whereas older people do not pay an extra price for organic food.

Table 4.21. Recoded age (three group) and cost effect on organic food purchasing

			If organic food cost the same as their non-organic equivalents, roughly what % of your food shopping would be spent on organic items?			Total
			0-40%	40%-80%	80%-100%	
Age recode (three group)	1,00 (≤ 30)	Count	11	10	25	46
		% of Total	8,1%	7,4%	**18,5%**	34,1%
	2,00 (31-50)	Count	9	17	28	54
		% of Total	6,7%	12,6%	**20,7%**	40,0%
	3,00 (51+)	Count	7	18	10	35
		% of Total	5,2%	**13,3%**	7,4%	25,9%
Total		Count	27	45	63	135
		% of Total	20,0%	33,3%	46,7%	100,0%

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9,349[a]	4	**,053**
Likelihood Ratio	9,475	4	**,050**
Linear-by-Linear Association	1,354	1	,245
N of Valid Cases	135		
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.00.			

4.2.3. Results of the Crosstabulation Analysis Between "Age" and "Awareness of Health Risks Associated with Eating Genetically Modified Foods"

No significant relationship has been found between age and awareness of health risks associated with eating genetically modified foods. The result of the cross tabulation of age and awareness of health risks associated with eating genetically modified foods was insignificant (chi square value=, 708 df=2, $p<0.05$). There is no statistically significant relationship between these two variables because of $\chi 2$ significance value.

Table 4.22. Recoded age (three group) and awareness of health risks associated with eating genetically modified foods.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	,690[a]	2	**,708**
Likelihood Ratio	,689	2	,709
Linear-by-Linear Association	,203	1	,653
N of Valid Cases	134		
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 10.97.			

4.2.4. Results of the ANOVA Analysis Between "Age" and "Evaluation of Organic Foods According to their "Taste, Price, Accessibility, Healthiness and Environmental Friendliness"

As Table 4.23 indicates, there are no significant differences between different age groups regarding their evaluations of the attributes of organic food products.

Table 4.23. Recoded age (three group) and evaluation of organic foods according to their "taste, price, accessibility, healthiness and environmental friendliness"

	F	Sign.
Please evaluate organic foods according to their "taste"	,382	,683
Please evaluate organic foods according to their "price"	1,417	,247
Please evaluate organic foods according to their "accessibility"	1,442	,240
Please evaluate organic foods according to their "healthiness"	1,622	,202
Please evaluate organic foods according to their "environmental friendliness"	1,272	,284

4.2.5. Results of the Crosstabulation Analysis Between "Gender" and " Organic Food Purchasing"

According to the Table 4.24, there is no significant relationship between gender and organic food purchasing. The result of the cross tabulation of gender and the organic food purchasing was insignificant (chi square value=, 968 df=1, p<0.05).

Table 4.24. Gender and organic food purchasing

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	,002[a]	1	**,968**
Continuity Correction[b]	,000	1	1,000
Likelihood Ratio	,002	1	,968
Fisher's Exact Test			
Linear-by-Linear Association	,002	1	,969
N of Valid Cases	135		
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 23.11.			
b. Computed only for a 2x2 table			

4.2.6. Results of the Crosstabulation Analysis Between "Gender" and "Cost Effect on Organic Food Purchasing"

No significant relationship has been found between gender and cost effect on organic food purchasing. The result of the cross tabulation of gender and cost effect on organic food purchasing was insignificant (chi square value=, 887 df=2, p<0.05). There is no statistically significant relationship between these two variables because of $\chi 2$ significance value.

Table 4.25. Gender and cost effect on organic food purchasing

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	,240[a]	2	**,887**
Likelihood Ratio	,241	2	,887
Linear-by-Linear Association	,050	1	,823
N of Valid Cases	135		
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 12.00.			

4.2.7. Results of the Crosstabulation Analysis Between "Gender" and "Awareness of Health Risks Associated with Eating Genetically Modified Foods"

No significant relationship has been found between gender and awareness of health risks associated with eating genetically modified foods. The result of the cross tabulation of gender and awareness of health risks associated with eating genetically modified foods was insignificant (chi square value=, 576 df=1, $p<0.05$). There is no statistically significant relationship between these two variables because of $\chi 2$ significance value.

Table 4.26. Gender and awareness of health risks associated with eating genetically modified foods

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	,313[a]	1	**,576**
Continuity Correction[b]	,139	1	,710
Likelihood Ratio	,315	1	,575
Fisher's Exact Test			
Linear-by-Linear Association	,311	1	,577
N of Valid Cases	134		
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 18.49.			
b. Computed only for a 2x2 table			

4.2.8. Results of the t-test Between "Gender" and "Evaluation of Organic Foods According to their "Taste, Price, Accessibility, Healthiness and Environmental Friendliness"

According to Table 4.27, the rating mean values of some objectives according to the gender difference were analyzed by independent samples t-test. All of the items were analyzed according to the gender difference. The result of the t-test of gender difference and evaluation of organic foods acoording to their "taste, price, accessibility, healthiness and environmental friendliness" was insignificant. There were no significant differences between males and females in terms of their evaluations about the taste, accessibility, healthiness and environmental friendliness of organic food. However, there is a significant difference between males and females in terms of their evaluation of the price of organic products. Females negative evaluation of prices is stronger compared to males.

Table 4.27. Gender and evaluation of organic foods acoording to their "taste, price, accessibility, healthiness and environmental friendliness"

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
Please evaluate organic foods according to their "taste"	Male	73	4,29	1,184	,139
	Female	57	4,18	1,283	,170
Please evaluate organic foods according to their "price"	Male	**73**	**2,29**	1,207	,141
	Female	**58**	**1,74**	,890	,117
Please evaluate organic foods according to their "accessibility"	Male	73	2,49	1,156	,135
	Female	58	2,48	1,287	,169
Please evaluate organic foods according to their "healthiness"	Male	74	4,53	,925	,108
	Female	57	4,58	,653	,087
Please evaluate organic foods according to their "environmental friendliness"	Male	74	4,31	1,019	,118
	Female	57	4,37	,879	,116

Independent Samples Test					
Levene's Test for Equality of Variances			t-test for Equality of Means		
	F	Sig.	T	df	Sig. (2-tailed)
Please evaluate organic foods according to their "taste"	,122	,728	,517	128	,606
			,512	115,497	,610
Please evaluate organic foods according to their "price"	6,976	,009	**2,879**	129	**,005**
			2,979	128,330	**,003**
Please evaluate organic foods according to their "accessibility"	1,513	,221	,049	129	,961
			,048	115,806	,962
Please evaluate organic foods according to their "healthiness"	,922	,339	-,360	129	,719
			-,376	128,121	,707
Please evaluate organic foods according to their "environmental friendliness"	,490	,485	-,340	129	,734
			-,347	127,313	,729

4.2.9. Results of the Crosstabulation Analysis Between "Income" and " Organic Food Purchasing"

As it seen in Table 4.28, there is a significant relationship between income and organic food purchasing. The result of the cross tabulation of income and the organic food purchasing was significant (chi square value=, 001 df=2, $p<0.05$). People having high income prefer much more organic products.

As 14.8% of personel income group above 10. 000 TL are willing to buy organic products, whereas as 20.3% and 25.8 of personel income group above 10.000TL-30000TL are willing to buy organic products respectively. The results are showed that demand for organic food seems to be positively correlated to income. Higher income households are more likely to form positive attitudes and to purchase more organic food.

While a larger part of the group with lower income does not buy organic food, the percentages change for groups with relatively higher incomes. As in come increases, individuals' tendency to buy organic food also increases.

Table 4.28. Income and organic food purchasing

			Do you ever buy organic food or drink products?		Total
			Yes	No	
Income recode (three group)	1,00 (above 10.000 TL)	Count	19	28	47
		% of Total	14,8%	**21,9%**	36,7%
	2,00 (10.000-20.000 TL)	Count	26	11	37
		% of Total	**20,3%**	8,6%	28,9%
	3,00 (above 20.000 TL)	Count	33	11	44
		% of Total	**25,8%**	8,6%	34,4%
Total		Count	78	50	128
		% of Total	60,9%	39,1%	100,0%

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	13,317[a]	2	**,001**
Likelihood Ratio	13,330	2	,001
Linear-by-Linear Association	11,484	1	,001
N of Valid Cases	128		
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 14.45.			

4.2.10. Results of the Crosstabulation Analysis Between "Income" and "Cost Effect on Organic Food Purchasing"

No significant relationship has been found between income and cost effect on organic food purchasing. The result of the cross tabulation of income and cost effect on organic food purchasing was insignificant (chi square value=, 138 df=4, $p<0.05$). There is no statistically significant relationship between these two variables because of $\chi 2$ significance value.

Table 4.29. Income and cost effect on organic food purchasing

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6,960[a]	4	**,138**
Likelihood Ratio	7,359	4	,118
Linear-by-Linear Association	2,069	1	,150
N of Valid Cases	128		
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 7.80.			

4.2.11. Results of the Crosstabulation Analysis Between "Income" and "Awareness of Health Risks Associated with Eating Genetically Modified Foods"

According to the Table 4.30, there is a significant relationship between income and awareness of health risks associated with eating genetically modified foods. The result of the cross tabulation of income and awareness of health risks associated with eating genetically modified foods was significant (chi square value=, 002 df=2, $p<0.05$). People having high income are more aware of genetically modified organism. While the aware

and unaware parts of the lower income group are equal, as income level increases, awareness percentage also increases.

Table 4.30. Income and awareness of health risks associated with eating genetically modified foods

			Are you aware that there are health risks associated with eating genetically modified foods?		Total
			Yes	No	
Income recode (three group)	1,00 (above 10.000 TL)	Count	23	23	46
		% of Total	**18,1%**	**18,1%**	36,2%
	2,00 (10.000-20.000 TL)	Count	27	10	37
		% of Total	**21,3%**	7,9%	29,1%
	3,00 (above 20.000 TL)	Count	37	7	44
		% of Total	**29,1%**	5,5%	34,6%
Total		Count	87	40	127
		% of Total	68,5%	31,5%	100,0%

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	12,597[a]	2	**,002**
Likelihood Ratio	12,737	2	,002
Linear-by-Linear Association	12,074	1	,001
N of Valid Cases	127		
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 11.65.			

4.2.12. Results of the ANOVA Analysis Between “Income” and “Evaluation of Organic Food According to their “Taste, Price, Accessibility, Healthiness and Environmental Friendliness”

Table 4.31. Income and evaluation of organic food products according to their “taste, price, accessibility, healthiness and environmental friendliness”

	F	Sign.
Please evaluate organic foods according to their "taste”	1,488	,230
Please evaluate organic foods according to their "price”	,746	,476
Please evaluate organic foods according to their "accessibility”	,957	,387
Please evaluate organic foods according to their "healthiness”	,483	,618
Please evaluate organic foods according to their "environmental friendliness”	1,378	,256

As Table 4.31 indicates, there are no significant differences between different income groups regarding their evaluations of the attributes of organic food products.

5. CONCLUSIONS

The main purpose of this study is to assess the current environmental status of the coastal town of Akyaka located in Southwest of Turkey and to develop proposals for the sustainability approach of the town with special emphasize on organic agricultural activities. There are many areas of investigation, such as renewable energy, integrated waste management, water and waste water issues, sustainable fishery and coastal management, sustainable transport, green buildings and social programs and administrative challenges. All these potential areas have been investigated in general. Organic farming was picked up as the main topic of this study.

This study mainly was conducted with the local residents of the town including farmers and producers, consumers, local business owners and town officials to investigate the opinions of the community on environmental aspects of organic food consumption in the town.

Since Akyaka is a ‘cittaslow’ site, local people prefer to focus on organic farming as a source of income in comparison to tourisic activities. Thus, organic agriculture awareness is being increased.One conclusion of this study is that income has an influence on purchasing organic products. According to the crosstabulation analysis, people having high income prefer much more organic products. In addition to this, income has an influence on awareness of health risks associated with eating genetically modified foods. People having high income are more aware of genetically modified organism.

Another conclusion in this study shows that there is no statistically significant correlation between age, gender and purchasing organic products. The mean scores among the male and female respondents were nearly the same. Also, it was found that age is not correlated with the awareness of health risks associated with consuming genetically modified products. Lastly, the evaluation of organic foods according to their "taste, price, accessibility, healthiness and environmental friendliness’’ has no relationship with age and income.

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APPENDIX A: QUESTIONNAIRE 1 (TURKISH)

AKYAKA BÖLGESİ ORGANİK ÜRÜN KULLANICI ANKETİ

Çalışmanın bu bölümünde hazırlanmış olan anket sorularıyla Akyaka'nın geçmiş ve günümüzde sahip olduğu çevresel problemlerin tespiti yapılacak, bu doğrultuda yörede uygulanmakta olan organik tarım ve benzer konular hakkında temel bilgilere erişim sağlanacaktır. Değerlendirme sonuçları yerel ve organik tarımsal bakış açısını kapsayacaktır. İnsan sağlığı ve ekolojik denge, sosyo-ekonomik bakış açısı altında çalışmanın temelini oluşturacaktır. Katılımınız ve katkınız için teşekkür ederiz.

1) Cinsiyetiniz?
   1. Erkek
   2. Kadın

2) Yaşınız?
   1. 11-20
   2. 21-30
   3. 31-40
   4. 41-50
   5. 51-60
   6. 60 üzeri

3) Mesleğiniz?
   1. Öğrenci
   2. Memur
   3. Özel Sektör
   4. Çiftçi
   5. Diğerleri (lütfen belirtiniz)

4) Yıllık ortalama geliriniz?

1. 10.000 altı
2. 10.000-20.000
3. 20.000-30.000
4. 30.000-40.000
5. 40.000-50.000
6. 50.000 üzeri

5) Haftalık yiyecek alışverişlerinizi aşağıdakilerden hangisinden temin edersiniz?

1. Süpermarket
2. Mahalle bakkalı
3. Halk pazarı
4. İnternet
5. Diğer .....

6) Daha önce hiç organik yiyecek ya da içecek satın aldınız mı?

1. Evet (6.1. 'e geçiniz)
2. Hayır (6.2. 'e geçiniz)

6.1. Hangi sıklıkta organik yiyecek ya da içecek satın alıyorsunuz?

1. Haftalık
2. İki haftada bir
3. Aylık
4. Daha seyrek

6.2. Neden organik yiyecek ya da içecek satın almadığınızı belirtirmisiniz?

1. Çok pahalı
2. Yeterince seçenek yok
3. Satın alabileceğim bir yer yok
4. Görüntüsü hoşuma gitmiyor
5. Tadı hoşuma gitmiyor
6. Organik ürün bulamıyorum
7. Diğer.....

7) Eğer fiyatlar daha uygun olsaydı daha fazla organik ürün satın alır mıydınız?

1. Evet
2. Hayır
3. Belki

8) Eğer organik yiyecek ve içeceklerin fiyatları organik olmayan ürünlerle aynı olsaydı alış- verişinizin yüzde kaçını organik ürünlere harcardınız?

1. %0-20
2. %20-40
3. %40-60
4. %60-80
5. %80-100

9) "Adil ticaret" ve "genetiği değiştirilmiş" terimlerinden haberdar mısınız?

1. Evet
2. Hayır

10) Genetiği değiştirilmiş gıda tüketimine bağlı olarak yaşanan sağlık problemleri konusunda bilginiz var mı?

1. Evet
2. Hayır

11) Sadece organik gıda satışı yapan marketlere erişim imkanınız olsaydı,

11.1. fiyatların şu anki organik ürünlerle aynı olması durumunda, oradan alışveriş yaparmıydınız?

1. Evet
2. Hayır
3. Belki

11.2. fiyatların şu anki organik ürün fiyatlarından daha düşük olması durumunda, oradan alışveriş yaparmıydınız?

1. Evet
2. Hayır
3. Belki

12) Aşağıdaki tanımlardan hangisini organik ürün ile eşleştirirsiniz?

1. Organik olmayan ürünlere göre daha lezzetli olması
2. İnsan sağlığı için daha faydalı olması
3. Hayvanlar için daha faydalı olması
4. Toz ve böcek bulundurması
5. Çevre için daha yararlı olması
6. Pahalı olması
7. Fikrim yok

13) Aşağıdakilerden hangisi sizin için en uygun tanımdır?

1. Veganım
2. Vejeteryanım (et, balık ve tavuk)
3. Genellikle vejeteryan
4. Vejeteryan değilim

14) Organik ürünleri aşağıdaki unsurlar açısından " 5:çok iyi, 1:çok kötü" olmak üzere değerlendirir misiniz?

	5	**4**	**3**	**2**	**1**
Tat					
Fiyat					
Ulaşabilirlik					
Sağlık					
Çevre					

15) Eğer yemek hizmeti veren yerlerde organik ve organik olmayan ürün çeşitleri birarada sunulsaydı organik ürünleri yine de tercih edermisiniz?

1. Evet (15.1.'e geçiniz)
2. Hayır (15.2. 'e geçiniz)

15.1. Peki hangi sıklıkta?

1. Her zaman
2. Sık sık
3. Bazen
4. Nadiren
5. Hiç bir zaman

15.2. Yukarıda organik ürünleri tercih etmediğinizi belirttiniz, sebebini öğrenebilir miyiz?

1. Farketmedim
2. Organik olup olmamasını önemsemiyorum
3. Tadını sevmiyorum
4. Organik ürünleri tercih etmiyorum
5. Diğer.....

16) Aşağıdakilerden unsurları satın aldığınız tarım ürünlerindeki önemine göre sıralar mısınız? (Diğer seçeneği belirtilirse sıralamaya dahil edilcek yani 1 den 5 e kadar, diğer yoksa 1 den 4 e kadar)

	Sıra
Kontrollü ve izlenebilir olması	
Etiket fiyatı	
Ambalajı	
Çevre dostu olması	
Diğer.....	

APPENDIX B : QUESTIONNAIRE 2 (TURKISH)

AKYAKA BÖLGESİ ORGANİK TARIM ÜRETİCİ ANKETİ

Çalışmanın amacı Akyaka Bölgesi'nde organik tarım üretimi yapan işletmelerle, geleneksel tarım üretimi yapan işletmelerin faaliyet sonuçlarının karşılaştırılması ve organik tarım yapılabilirliğinin ortaya konmasıdır. Katılımınız ve katkınız için teşekkür ederiz.

1) Ne tür üretim yapıyorsunuz?

1. Organik
2. Geleneksel

2) İşletme genişliğiniz ve parsel sayınız ne kadar? (da/dönüm)

1. 0-8
2. 9-25
3. 26+

3) Yetiştirmekte olduğunuz ürünleri belirtirmisiniz?

4) Ürünlerinizi ekim alanları ve üretim miktarlarına gore sınıflandırırmısnız?

5) Ailenizde bulunan bireylerin yaş dağılımını öğrenebilirmiyiz?

Yaş Gruplarının Dağılımı							
0-6		**7-14**		**15-49**		**50+**	
Erkek	**Kadın**	**Erkek**	**Kadın**	**Erkek**	**Kadın**	**Erkek**	**Kadın**

6) İşletme yöneticisinin özelliklerini öğrenebilirmiyiz?

İşletmecinin Yaşı (yıl)	**Tarımsal Faaliyet Süresi (yıl)**

7) İşletme yöneticisinin eğitim düzeyini öğrenebilirmiyiz?

İşletmecinin Eğitim Düzeyi				
Ok.yaz.değil	**Okur-yazar**	**İlkokul**	**Ortaokul**	**Diğer**

8) Aile işgücü potansiyelini öğrenebilirmiyiz?

Aile İşgücü Potansiyeli	İşletmede Kullanılan Aile İşgücü	Atıl Kalan Aile İşgücü

9) İşletmenizin yıllık Gayrisafi Üretim Değeri ne kadardır?

10) İşletmenizin değişen masraflarını belirtebilirmisiniz?

	Ortalama	**%**
Tohum masrafları		
Gübre masrafları		
İlaç masrafları		
Makine kirası		
Geçici işçilik ücreti		
Sulama ücreti		
Pazarlama masrafları		
Toplam		
Döner sermaye faizi		
Genel Toplam		
Dekara DM		
Organik Üretim DM		

ORGANİK ÜRETİM YAPAN İŞLETMELER

11) Organik üretim yaparken hangi kaynaklardan bilgi alıyorsunuz?

Arkadaş ve Komşular	
Üniversite	
Ark.,Komş. + Ünv.	
Ünv. + Kitap,Gazete, Dergi,	
Ark.,Komş. + Ünv. + Kitap,Gazete, Dergi,	
Ark.,Komş. + Ünv. + Diğer	
Diğer.....	

12) Kaç yıldır organik üretim yapıyorsunuz?

13) Organik üretime devam edecekmisiniz?

1. Evet (13.1'i yanıtlayınız)
2. Hayır
3. Belirsiz (13.1'i yanıtlayınız)

13.1. Organik tarım yapma nedeninizi belirtirmisiniz?

Gelirini Arttırmak	
Sertifika almak ve devam etmek	
Deneyim Kazanmak ve İşgücünü Değerlendirmek	
Diğer Üreticilere Örnek Olmak + Çevre Duyarlılığı	
Üniversite Olanakları+Söz vermek	
Diğer	

14) Üretimde karşılaştığınız sorunlar nelerdir?

Üretim modelinin yeni olması	
Hastalık ve zararlı kontrolü	
Sorun yok	
Fiyat ve pazarlama sorunu	
Diğer	

15) Organik tarımla işgücü kullanımı nasıl değişti?

1. Arttı
2. Değişmedi
3. Azaldı

16) Organik tarımla gelir nasıl değişti?

1. Arttı
2. Değişmedi
3. Azaldı

17) Organik üretimin avantajları nelerdir?

İşgücünün değerlendirilmesi + deneyim kazanma+ gelir artışı	
Sağlıklı ve bol ürün	
Girdi desteği+ damla sulama sistemi	
Diğer	

18) Organik üretimin dezavantajları nelerdir?

Dezavantajı yok	
Diğer ürünler zarar gördü	
Fiyat düşük ve ödemeler geç yapılıyor	
Gelir masrafları karşılamadı	
Hastalık ve zararlıdan büyük ürün kaybı	
Diğer	

19) Organik üretimi diğer üreticilere önerir misiniz?

1. Evet
2. Hayır

20) Organik üretimin yaygınlaştırılması için önerileriniz nelerdir?

Üreticiler diğerlerini etkilemeli	
Pazar sorunu çözülmeli	
Üretim sözleşmeli olmalı	
Organik üretim yapan üreticilerin desteklenmesi	
Peşin ödeme ve yüksek fiyat	
Üniversitenin teknik yardımı devam etmeli	
Diğer	

GELENEKSEL ÜRETİM YAPAN İŞLETMELER

21) Organik üretim hakkında bilginiz var mı?

1. Evet
2. Hayır

22) Organik üretim ile ilgili bilgi kaynaklarınız nelerdir?

Arkadaş ve Komşular	
Üniversite	
Ark.,Komş. + Ünv.	
Ünv. + Kitap,Gazete, Dergi,	
Ark.,Komş. + Ünv. + Kitap,Gazete, Dergi,	
Ark.,Komş. + Ünv. + Diğer	
Diğer.....	

23) Organik tarım yapmayı düşünür müsünüz?

1. Evet (23.1. ‘i yanıtlayınız)

2. Hayır (23.2. ‘i yanıtlayınız)

3. Fikrim yok

23.1. Organik tarım yapmak isteme nedeniniz?

Çevre duyarlılığı	
Yüksek gelir	
Çevre duy.+yüksek gelir	
Gelecekte önemli olacak	
Deneyim kazanmak	
Diğer	

23.2. Organik tarım yapmama nedeniniz?

Yapmak istemiyor	
Olanakları uygun değil	
Hayvancılık yapıyor	
Organik üretim yapanlar zarar etti	
Deneyim kazanmak	
Diğer	

APPENDIX C: FREQUENCY TABLE OF QUESTIONNAIRE 2

What kind of agricultural activities do you perform?

		Frequency	Percent	Valid Percent	Cumulative Percent
	organik	6	20.0	20.7	20.7
	geleneksel	23	76.7	79.3	100.0
	Total	29	96.7	100.0	
Missing	System	1	3.3		
Total		30	100.0		

How many farmland do you own?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-8	14	46.7	51.9	51.9
	9-25	11	36.7	40.7	92.6
	26+	2	6.7	7.4	100.0
	Total	27	90.0	100.0	
Missing	System	3	10.0		
Total		30	100.0		

Which type of crop do you have?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	vegetable	5	16.7	17.2	17.2
	fruit	2	6.7	6.9	24.1
	cereal products	3	10.0	10.3	34.5
	cereal products+vegetable	6	20.0	20.7	55.2
	cereal products+vegetable+fruit	1	3.3	3.4	58.6
	honey	2	6.7	6.9	65.5
	vegetable+fruit	9	30.0	31.0	96.6
	dairy product+vegetable	1	3.3	3.4	100.0
	Total	29	96.7	100.0	
Missing	System	1	3.3		
Total		30	100.0		

What is the volume of your farmland?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	6.7	8.7	8.7
	2	1	3.3	4.3	13.0
	3	1	3.3	4.3	17.4
	4	2	6.7	8.7	26.1
	5	1	3.3	4.3	30.4
	6	3	10.0	13.0	43.5
	7	1	3.3	4.3	47.8

	9	1	3.3	4.3	52.2
	10	3	10.0	13.0	65.2
	12	1	3.3	4.3	69.6
	13	1	3.3	4.3	73.9
	18	2	6.7	8.7	82.6
	24	1	3.3	4.3	87.0
	25	2	6.7	8.7	95.7
	40	1	3.3	4.3	100.0
	Total	23	76.7	100.0	
Missing	System	7	23.3		
Total		30	100.0		

What is the volume of your production?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	400	1	3.3	7.1	7.1
	420	1	3.3	7.1	14.3
	1000	1	3.3	7.1	21.4
	1500	1	3.3	7.1	28.6
	1750	1	3.3	7.1	35.7
	1800	1	3.3	7.1	42.9
	2000	1	3.3	7.1	50.0
	3500	1	3.3	7.1	57.1
	6000	1	3.3	7.1	64.3
	7700	1	3.3	7.1	71.4
	9500	1	3.3	7.1	78.6
	27000	1	3.3	7.1	85.7
	50000	1	3.3	7.1	92.9
	87000	1	3.3	7.1	100.0
	Total	14	46.7	100.0	
Missing	System	16	53.3		
Total		30	100.0		

Age Group 1 Male (0-6)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	4	13.3	100.0	100.0
Missing	System	26	86.7		
Total		30	100.0		

Age Group 1 Female (0-6)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	3	10.0	100.0	100.0
Missing	System	27	90.0		
Total		30	100.0		

Age Group 2 Male (7-14)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	8	26.7	72.7	72.7
	2	3	10.0	27.3	100.0
	Total	11	36.7	100.0	
Missing	System	19	63.3		
Total		30	100.0		

Age Group 2 Female (7-14)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	5	16.7	100.0	100.0
Missing	System	25	83.3		
Total		30	100.0		

Age Group 3 Male (15-49)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	17	56.7	73.9	73.9
	2	5	16.7	21.7	95.7
	3	1	3.3	4.3	100.0
	Total	23	76.7	100.0	
Missing	System	7	23.3		
Total		30	100.0		

Age Group 3 Female (15-49)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	15	50.0	78.9	78.9
	2	2	6.7	10.5	89.5
	3	2	6.7	10.5	100.0
	Total	19	63.3	100.0	
Missing	System	11	36.7		
Total		30	100.0		

Age Group 4 Male (50+)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	19	63.3	100.0	100.0
Missing	System	11	36.7		
Total		30	100.0		

Age Group 4 Female (50+)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	21	70.0	100.0	100.0
Missing	System	9	30.0		

Total	30	100.0		

What is the age of cheff farmer?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	30	1	3.3	3.4	3.4
	33	1	3.3	3.4	6.9
	34	1	3.3	3.4	10.3
	35	2	6.7	6.9	17.2
	36				
	37	1	3.3	3.4	24.1
	39	1	3.3	3.4	27.6
	43	1	3.3	3.4	31.0
	46	2	6.7	6.9	37.9
	50	2	6.7	6.9	44.8
	51	2	6.7	6.9	51.7
	54	1	3.3	3.4	55.2
	55	1	3.3	3.4	58.6
	56	3	10.0	10.3	69.0
	57	1	3.3	3.4	72.4
	58	1	3.3	3.4	75.9
	60	2	6.7	6.9	82.8
	62	1	3.3	3.4	86.2
	63	1	3.3	3.4	89.7
	65	1	3.3	3.4	93.1
	68	1	3.3	3.4	96.6
	70	1	3.3	3.4	100.0
	Total	29	96.7	100.0	
Missing	System	1	3.3		
Total		30	100.0		

How long have you been in this possesion?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	3	1	3.3	3.4	3.4
	4	1	3.3	3.4	6.9
	5	3	10.0	10.3	17.2
	6	1	3.3	3.4	20.7
	10	3	10.0	10.3	31.0
	13	1	3.3	3.4	34.5
	14	1	3.3	3.4	37.9
	15	2	6.7	6.9	44.8
	20	2	6.7	6.9	51.7
	22	1	3.3	3.4	55.2
	32	1	3.3	3.4	58.6

	39	1	3.3	3.4	62.1
	40	3	10.0	10.3	72.4
	44	1	3.3	3.4	75.9
	46	1	3.3	3.4	79.3
	50	3	10.0	10.3	89.7
	53	1	3.3	3.4	93.1
	60	2	6.7	6.9	100.0
	Total	29	96.7	100.0	
Missing	System	1	3.3		
Total		30	100.0		

What is the educational background of the cheff farmer?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	literate	2	6.7	6.9	6.9
	primary school	25	83.3	86.2	93.1
	secondary school	1	3.3	“3.4	96.6
	other	1	3.3	3.4	100.0
	Total	29	96.7	100.0	
Missing	System	1	3.3		
Total		30	100.0		

What is the work potential of your family?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	4	13.3	13.8	13.8
	3	7	23.3	24.1	37.9
	4	9	30.0	31.0	69.0
	5	1	3.3	3.4	72.4
	6	7	23.3	24.1	96.6
	9	1	3.3	3.4	100.0
	Total	29	96.7	100.0	
Missing	System	1	3.3		
Total		30	100.0		

How many person are involve in your agricultural activity?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	5	16.7	17.2	17.2
	2	16	53.3	55.2	72.4
	3	2	6.7	6.9	79.3
	4	5	16.7	17.2	96.6
	5	1	3.3	3.4	100.0

	Total	29	96.7	100.0	
Missing	System	1	3.3		
Total		30	100.0		

How many person does not contribute your agricultural activity?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	2	6.7	8.7	8.7
	2	16	53.3	69.6	78.3
	3	1	3.3	4.3	82.6
	4	3	10.0	13.0	95.7
	5	1	3.3	4.3	100.0
	Total	23	76.7	100.0	
Missing	System	7	23.3		
Total		30	100.0		

What is your annual turnover in your farmland?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2000	1	3.3	5.6	5.6
	3000	3	10.0	16.7	22.2
	4000	1	3.3	5.6	27.8
	5000	2	6.7	11.1	38.9
	6000	2	6.7	11.1	50.0
	7000	1	3.3	5.6	55.6
	10000	1	3.3	5.6	61.1
	15000	4	13.3	22.2	83.3
	20000	1	3.3	5.6	88.9
	30000	1	3.3	5.6	94.4
	32000	1	3.3	5.6	100.0
	Total	18	60.0	100.0	
Missing	System	12	40.0		
Total		30	100.0		

What is your seed expense in a year?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	100	1	3.3	5.3	5.3
	150	1	3.3	5.3	10.5
	200	1	3.3	5.3	15.8
	300	1	3.3	5.3	21.1
	500	4	13.3	21.1	42.1
	1000	4	13.3	21.1	63.2
	1500	1	3.3	5.3	68.4
	2000	3	10.0	15.8	84.2

	2700	1	3.3	5.3	89.5
	3000	1	3.3	5.3	94.7
	7200	1	3.3	5.3	100.0
	Total	19	63.3	100.0	
Missing	System	11	36.7		
Total		30	100.0		

What is your fertilizer expense in a year?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	50	2	6.7	10.5	10.5
	240	2	6.7	10.5	21.1
	250	1	3.3	5.3	26.3
	300	1	3.3	5.3	31.6
	400	1	3.3	5.3	36.8
	1000	4	13.3	21.1	57.9
	1500	3	10.0	15.8	73.7
	2000	1	3.3	5.3	78.9
	3000	2	6.7	10.5	89.5
	4000	2	6.7	10.5	100.0
	Total	19	63.3	100.0	
Missing	System	11	36.7		
Total		30	100.0		

What is your pesticide expense in a year?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	25	2	6.7	8.7	8.7
	100	4	13.3	17.4	26.1
	150	1	3.3	4.3	30.4
	300	2	6.7	8.7	39.1
	500	4	13.3	17.4	56.5
	720	1	3.3	4.3	60.9
	1000	3	10.0	13.0	73.9
	1500	3	10.0	13.0	87.0
	2000	2	6.7	8.7	95.7
	4000	1	3.3	4.3	100.0
	Total	23	76.7	100.0	
Missing	System	7	23.3		
Total		30	100.0		

What is your agricultural machine expenses in a year?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	60	1	3.3	10.0	10.0
	150	1	3.3	10.0	20.0
	250	1	3.3	10.0	30.0

	500	3	10.0	30.0	60.0
	1500	1	3.3	10.0	70.0
	2000	1	3.3	10.0	80.0
	3000	1	3.3	10.0	90.0
	10000	1	3.3	10.0	100.0
	Total	10	33.3	100.0	
Missing	System	20	66.7		
Total		30	100.0		

What is your temporary labour expense in a year?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	105	1	3.3	12.5	12.5
	150	2	6.7	25.0	37.5
	175	1	3.3	12.5	50.0
	240	1	3.3	12.5	62.5
	500	2	6.7	25.0	87.5
	2000	1	3.3	12.5	100.0
	Total	8	26.7	100.0	
Missing	System	22	73.3		
Total		30	100.0		

What is your irrigation expense in a year?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	50	1	3.3	5.0	5.0
	100	1	3.3	5.0	10.0
	120	1	3.3	5.0	15.0
	150	4	13.3	20.0	35.0
	200	1	3.3	5.0	40.0
	350	1	3.3	5.0	45.0
	400	1	3.3	5.0	50.0
	480	1	3.3	5.0	55.0
	500	1	3.3	5.0	60.0
	600	2	6.7	10.0	70.0
	700	1	3.3	5.0	75.0
	800	1	3.3	5.0	80.0
	1000	2	6.7	10.0	90.0
	1500	1	3.3	5.0	95.0
	3000	1	3.3	5.0	100.0
	Total	20	66.7	100.0	
Missing	System	10	33.3		
Total		30	100.0		

What is your marketing expense in a year?

		Frequency	Percent
Missing	System	30	100.0

What is your information source for the organic agricultural production?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	university	1	3.3	14.3	14.3
	friends,neighbors+university+book,newspaper,magazine	1	3.3	14.3	28.6
	other	5	16.7	71.4	100.0
	Total	7	23.3	100.0	
Missing	System	23	76.7		
Total		30	100.0		

How many years have you been performing organic agricultural activities?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	5	2	6.7	33.3	33.3
	6	1	3.3	16.7	50.0
	13	1	3.3	16.7	66.7
	40	1	3.3	16.7	83.3
	60	1	3.3	16.7	100.0
	Total	6	20.0	100.0	
Missing	System	24	80.0		
Total		30	100.0		

Do you continue organic farming?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	6	20.0	100.0	100.0
Missing	System	24	80.0		
Total		30	100.0		

What is the reason of organic farming?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	obtain organic production sertficate and keep going on with organic agriculture	3	10.0	50.0	50.0
	gain experience and utilise labor force	1	3.3	16.7	66.7
	be a model of for the other farmers and increase environmental awarenness	2	6.7	33.3	100.0
	Total	6	20.0	100.0	
Missing	System	24	80.0		
Total		30	100.0		

What kind of problems do you encounter during the farming?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	A new production method	2	6.7	33.3	33.3
	pest and disease control	2	6.7	33.3	66.7
	no problem	1	3.3	16.7	83.3
	price and marketing problem	1	3.3	16.7	100.0

	Total	6	20.0	100.0	
Missing	System	24	80.0		
Total		30	100.0		

How does change labour force with organic farming?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	increase	4	13.3	66.7	66.7
	not change	1	3.3	16.7	83.3
	decrease	1	3.3	16.7	100.0
	Total	6	20.0	100.0	
Missing	System	24	80.0		
Total		30	100.0		

How does incoming change with organic farming?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	increase	1	3.3	16.7	16.7
	not change	1	3.3	16.7	33.3
	decrease	4	13.3	66.7	100.0
	Total	6	20.0	100.0	
Missing	System	24	80.0		
Total		30	100.0		

What are the advantages of organic farmimg?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	healthy and bountiful harvest	5	16.7	83.3	83.3
	financial support, drip irrigation	1	3.3	16.7	100.0
	Total	6	20.0	100.0	
Missing	System	24	80.0		
Total		30	100.0		

What are the disadvantages of organik farming?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	income does not meet expenses	3	10.0	50.0	50.0
	loss of product owing to the pest and diseases	2	6.7	33.3	83.3
	other	1	3.3	16.7	100.0
	Total	6	20.0	100.0	
Missing	System	24	80.0		
Total		30	100.0		

Do you recommend organic farming to the other farmers?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	6	20.0	100.0	100.0
Missing	System	24	80.0		
Total		30	100.0		

What is your recommendation for the expanding organic farming?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	solving the problem in this market	3	10.0	50.0	50.0
	support for organic farmers	1	3.3	16.7	66.7
	other	2	6.7	33.3	100.0
	Total	6	20.0	100.0	
Missing	System	24	80.0		
Total		30	100.0		

Do you have an idea about organic farming?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	21	70.0	91.3	91.3
	no	2	6.7	8.7	100.0
	Total	23	76.7	100.0	
Missing	System	7	23.3		
Total		30	100.0		

What is your information source for the organic agricultural production?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	friends and neighbors	5	16.7	23.8	23.8
	university	1	3.3	4.8	28.6
	university + book,newspaper,magazine	1	3.3	4.8	33.3
	tv	14	46.7	66.7	100.0
	Total	21	70.0	100.0	
Missing	System	9	30.0		
Total		30	100.0		

Do you think of performing organic farming?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	8	26.7	38.1	38.1
	no	13	43.3	61.9	100.0
	Total	21	70.0	100.0	

Missing	System	9	30.0		
Total		30	100.0		

What are the reasons for organic farming?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	environmental awareness	2	6.7	25.0	25.0
	environmental awareness+high incoming	2	6.7	25.0	50.0
	becoming important in the future	1	3.3	12.5	62.5
	gain experience	2	6.7	25.0	87.5
	other	1	3.3	12.5	100.0
	Total	8	26.7	100.0	
Missing	System	22	73.3		
Total		30	100.0		

What are the reasons for not performing organic farming?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	poor facility	6	20.0	46.2	46.2
	organic farmers make a loss	3	10.0	23.1	69.2
	other	4	13.3	30.8	100.0
	Total	13	43.3	100.0	
Missing	System	17	56.7		
Total		30	100.0		

APPENDIX D: PHOTOGRAPHS TAKEN DURING THE QUESTIONNAIRE

Some photographs taken during questionnaire period are shown below:

Figure D.1. Conducting survey with local farmers

Figure D.2. Conducting survey with local farmers

Figure D.3. Conducting survey with local farmers

Figure D.4. Conducting survey with local farmers

Figure D.5. Conducting survey with local farmers