ALTERNATIVE FARMING SYSTEMS FOR A SUSTAINABLE AGRICULTURE

[1]SELMA KARABAS , [2]OSMAN KARKACIER

[1]Karatekin University/Turkey, [2]Akdeniz University/Turkey
E-mail: [1]slmkrbs55@gmail.com, [2]okarkacier@gmail.com

Abstract - This study has on agricultural sustainability, and its relationship to various alternative agricultural systems. the importance of sustainable agriculture has risen to become one of the most important issues in agriculture. The nature of the interrelationships between agricultural production and the natural environment means that we are far from knowing which methods and systems in different locations will lead to sustainability. It is extremely difficult to determine whether certain agricultural practices are sustainable or not. Organic agriculture and good agricultural practices (GAP) are the most suitable options for a sustainable agriculture. These two systems are described in the study.

Keywords - Agricultural Sustainability, Organic Agriculture Good Agricultural Practices (GAP).

I. INTRODUCTION

This paper has on agricultural sustainability, and its relationship to various alternative agricultural approaches. In recent years the importance of sustainable agriculture has risen to become one of the most important issues in agriculture.

Sustainability rests on the principle that we must meet the needs of the present without compromising the ability of future generations to meet their own needs. The goal of sustainable agriculture is to maximize the net benefits that society receives from agricultural production of food and from ecosystem services.

Conventional agriculture is no longer suited to feeding humans and preserving ecosystems. Sustainable agriculture is an alternative for solving fundamental and applied issues related to food production in an ecological way (2). Conventional agricultural practices can reduce the ability of ecosystems to provide goods and services. For example, high applications of fertilizers and pesticides can increase nutrients and toxins in groundwater and surface waters, incurring health and water purification costs, and decreasing fishery and recreational values. Agricultural practices that degrade soil quality contribute to eutrophication of aquatic habitats and may necessitate the expense of increased fertilization, irrigation and energy to maintain productivity on degraded soils. Practices that change species composition or reduce biodiversity in non-agricultural systems may also diminish goods and services, because the ability of ecosystems to provide some services depends both on the number and type of species in an ecosystem (1).

Some of the developments in modern agriculture that have led to doubts regarding the long-term viability of current production systems. Agriculture has come to draw the inputs which it uses from more distant sources, both spatially and sectorally, to derive an increasing proportion of its energy supplies from non-renewable sources, to depend upon a more narrow genetic base and to have an increasing impact on the environment. This is particularly reflected in its heavy reliance on chemical fertilisers and pesticides, its dependence upon subsidies and price support and its external costs such as threats to other species, environmental pollution, habitat destruction and risks to human health and welfare (3)

While conventional agriculture is driven almost solely by productivity and profit, sustainable agriculture integrates biological, chemical, physical, ecological, economic and social sciences in a comprehensive way to develop new farming practices that are safe and do not degrade our environment. (4).

This will require increased crop yields, increased efficiency of nitrogen, phosphorus and water use, ecologically based management practices, judicious use of pesticides and antibiotics, and major changes in some livestock production practices. Sustainable agriculture will require that society appropriately rewards ranchers, farmers and other agriculturalists for the production of both food and ecosystem services.

The supply of agricultural products and ecosystem services are both essential to human existence and quality of life. However, recent agricultural practices that have greatly increased global food supply have had inadvertent, detrimental impacts on the environment and on ecosystem services, highlighting the need for more sustainable agricultural methods.

II. RURAL DEVELOPMENT AND AGRICULTURAL SUSTAINABILITY

The basic assumption of the rural development between town and country social, cultural and economic differences of an acceptable balance is achieved. In other words, the rural population, particularly in immigration and employment issues, which aims to solve kalkindirara unconscious is a choice. The aim of these preferences of the rural population to remain in place will be wrong. Must

maintain acceptable population ratio. Living in rural areas rural development from the agriculture sector, providing individuals and communities facing Human living conditions from rural backgrounds or similar. In this direction, a need to create a sense of moral and financial assistance to them for making an effort and then this emotion of these communities with all the economic, social, and cultural development of providing the hobby.

The increase in global food demand projected for the coming years and food production poses major challenges for sustainability and ecosystem consequences. In the coming years to ensure the sustainability of Agriculture and ecosystem services, new incentives and policies for environmental integrity, or without endangering the public health will be crucial to meet the demands of improving.

III. ALTERNATIVE FARMING SYSTEMS

3.1.Organic Farming For Sustainable Agriculture

Scientific investigation has long been dominated by positivism, which holds that an independent reality driven by immutable laws exists. Consequently, it should be possible to define sustainability in absolute terms (5).

The complex nature of the interrelationships between agricultural production and the natural environment means that we are far from knowing which methods and systems in different locations will lead to sustainability. It is extremely difficult to determine whether certain agricultural practices are sustainable or not. It is only in retrospect that sustainable techniques can be truly identified. The identification of technologies as sustainable today is questionable, since such identification is based on hypotheses regarding the sustainable management of natural resources, maintaining their productive capacity through time. This implies that a constant process of monitoring and reevaluation is required. The focus here is on organic farming, and particularly its relationship with the concept of sustainability. Organic farming is widely perceived as being more environmentally friendly than conventional farming. As a form of sustainable agriculture, it receives substantial support from policy for its contribution to environmental protection as well as the provision of amenities such as biodiversity and cultural landscapes. Consumers are attracted to organic foods as they are produced without synthetic chemicals and comply with higher animal welfare standards. Although organic farming certainly has the potential to fulfil these expectations, studies have shown that some certified organic farms do not.

Organic sales in the U.S. totaled around $47 billion in 2016, reflecting new sales of almost $3.7 billion from the previous year. Organic food now accounts for more than five percent of total food sales in the U.S. Organic food sales increased by 8.4 percent from last year, blowing past the stagnant 0.6 percent growth rate in the overall food market. Sales of organic non-food products were up 8.8% in 2016 (6). Overall, the trends in organic food purchasing look as though the organic and natural foods frenzy is sure to continue and expand. Improved infrastructure and increased channels of distribution will pave the way for even greater growth in this area. As large corporations, such as Walmart and Amazon (which recently purchased Whole Foods Market) become greater presences in the organic foods market segment, the availability of organic foods will increase, fueling the fire of exponential market growth. Additionally, catering companies, restaurants, and other hospitality industries have increased their usage of organic foods to keep up with demands. This provides a massive commercial wholesale avenue for organic food suppliers. A modern definition of organic farming provided by Lampkin (1994)(5), an authoritative source, states that the aim is: “to create integrated, humane, environmentally and economically sustainable production systems, which maximise reliance on farm-derived renewable resources and the management of ecological and biological processes and interactions, so as to provide acceptable levels of crop, livestock and human nutrition, protection from pests and disease, and an appropriate return to the human and other resources. One of the most significant expositions of the aims and principles of organic farming is that presented in the International Federation of Organic Agriculture Movements basic standards for production and processing (IFOAM, 1998); these are presented in Table 1. As the this statement makes clear, the scope of the principles extend beyond simple biophysical aspects to matters of justice and responsibility.

Table 1. The principle aims of organic production and processing

To produce food of high quality in sufficient quantity.
To interact in a constructive and life-enhancing way with natural systems and cycles.
To consider the wider social and ecological impact of the organic production and processing system.
To encourage and enhance biological cycles within the farming system, involving micro-organisms, soil flora and fauna, plants and animals.
To develop a valuable and sustainable aquatic ecosystem.
To maintain and increase long term fertility of soils.
To maintain the genetic diversity of the production system and its surroundings, including the protection of plant and wildlife habitats.
To promote the healthy use and proper care of water, water resources and all life therein.
To use, as far as possible, renewable resources in locally organised production systems.
To create a harmonious balance between crop production and animal husbandry.
To give all livestock conditions of life with due consideration for the basic aspects of their innate behaviour.

To minimise all forms of pollution.
To process organic products using renewable resources.
To produce fully biodegradable organic products.
To produce textiles which are long-lasting and of good quality

(4)

3.2. Good Agricultural Practices For Sustainable Agriculture

Good Agricultural Practices are voluntary audits that verify that fruits and vegetables are produced, packed, handled, and stored as safely as possible to minimize risks of microbial food safety hazards. The concept of Good Agricultural Practices may serve as a reference tool for deciding, at each step in the production process, on practices and/or outcomes that are environmentally sustainable and socially acceptable. The implementation of GAP should therefore contribute to Sustainable Agriculture and Rural Development. Good Agricultural Practices (GAP) is a pioneering field level food safety protocol called 'good agricultural practices' currently exercising influence over the global food quality assurance system. Good Agricultural Practices (GAP) as a production system not threatening the environment and the human health has increasingly become common both country-wide and even worldwide. Good Agricultural Practices (GAP) is examined as a production management system. Developed by a consortium of major European retailers, this private standard enforces codes of conduct that address issues of health and safety for producers and consumers, as well as working conditions and environmental management on the farmland.

CONCLUSIONS

There is widespread consensus about the importance of sustainability and its desirability as a goal for agriculture.Two broad interpretations of agricultural sustainability have emerged with different underlying goals: sustainability interpreted as an approach to agriculture developed in response to concerns about impacts of agriculture, with motivating adherence to sustainable ideologies and practices as its goal; and sustainability interpreted as a property of agriculture developed in response to concerns about threats to agriculture, with the goal of using it as a criterion for guiding agriculture as it responds to change. Interpreting sustainability as an approach has been useful for motivating change. However, usefulness of this interpretation as a criterion for guiding change is hindered by a lack of generality of prescribed approaches, a distorted view of conventional agriculture and circular logic. Although interpreting sustainability as a system property is logically more consistent, conceptual and practical problems with its characterization have limited its usefulness as a criterion for guiding change. In order for sustainability to be a useful criterion for guiding change in agriculture, its characterization should be literal, system-oriented, quantiative, predictive, stochastic and diagnostic. (7).

LITERATURE

[1] M Lichtfo,. P. Navarrete,V. Debaeke,C. Souchère,C. Alberola , Agronomy For Sustainable Agriculture: A Reviesustainable Agriculture, 2009 – Springer.

[2] LA. (2008) soils and sustainable agriculture. a review. Agron. Sustain. Dev. 28, 57–64.

[3] D.Tilman,G Kenneth . A Cassman, A Pamela A. Matson, N Rosamond Naylor ,P Stephen., Agricultural Sustainability And İntensive Production Practices. Nature 418, 671-677 (8 August 2002.

[4] D.Rigby, D.Cáceres , 2001, Organic Farming And The Sustainability Of Agricultural Systems. Agricultural Systems, Vol 68.Elsevier.

[5] jules n pretty.,1994.,alternative systems of ınquiry for a sustainable agriculture. ıds bultein, wılley onlıne lıbrary.

[6] url .,ota, organic trade assocation. organik market analysis, www.ota.com/resources/market-analysis

[7] j w hansen,is agricultural sustainability a useful concept, agricultural systems, vol 50. elsivier.

★★★