

Organic Farming: A Historical Perspective

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Received: 29.08.2018; Accepted: 26.11.2018; Published Online: 30.12.2018

ABSTRACT

Organic farming has been among the most popular concepts for more than three decades. Despite being a rapidly growing sector, certified organic agriculture occupies only less than 1 percent of lands and 1-2 percent of food sales in the world. Evaluating the development of organic farming movement from a historical perspective will be more explanatory to understand what organic farming is and which direction it is evolving. The history of organic farming can be investigated in three different stages. The beginning of organic movement traced back to the early settlement of farming era. Early attempts in this stage have been reviewed into two main activity lines as studies on soil fertility and activities as a reaction of industrial agriculture. The second stages have been coined as the institutionalization and commercialization period that includes the growth period of this movement in different lines. The last stage was named as the period of from commercialization to conventionalization–bifurcation, covering a period from growth stage to present. When evaluating all development in the agro-food chain related to strict safety control, a strong rapprochement tendency seems inevitable between farming alternatives, including organic farming.

Keywords: Organic farming, Institutionalization, Commercialization, Conventionalization, Bifurcation

INTRODUCTION

Organic agriculture has different meanings from different point of views. One sees organic agriculture as a protest movement to mainstream conventional agriculture. The other view sees it as a unique form of agricultural production, with its own principles and rules. Another perspective is the market interpretation that sees organic agriculture as a set of market opportunities that originated changing consumer consciousness towards food safety. On the other hand, there is a misconception and misunderstanding about what the real meaning of organic food is. Some overvalue the importance of it, while others undervalue.

There are great concerns for organic farming among not only scientists, officials, entrepreneurs and but also the public as the consumers of organic food and fiber. A remarkable amount of literature now exists related to different aspects of organic agriculture. These interests have been growing as well as experienced global threats on the environment and all living beings have been grown. Besides, organic farming is certainly a strong initiative and promoter for the development other sustainable agricultural practices that were seen as competitors to it. Nowadays it seems one of the challenges that these alternatives progressively being more safety and friendly for humans and environment. However, a contradiction between the ideals of the organic movement and its worldwide implementation has been observed through the developments in capitalist markets. As the organic market matures, these developments alter the main targets of the movement. One of the main arguments is that organic farming has been moving away from its historical roots and main philosophy of it. These changes include the convergence with the mainstream agricultural structure, which is so called conventionalization and appearing as a dual-structure in organic farming named as bifurcation.

This paper aims to present a general overview and focus on organic farming from a historical perspective with a belief that it is the best way to understand what the real organic agriculture is, and what has been really happening in this sector? First, a short description of organic agriculture is given. Afterward, paper presents a brief historical development of organic agriculture from its origin to the present status with a short conclusion.

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THE MEANING OF ORGANIC FARMING

The term of organic is originated from Greek **organikos** 'relating to an organ or instrument. The original meaning of organ was related to an organ of the body (Oliosio, 2008) There was an understanding before the 18th century that the substance material of living organisms was fundamentally different from that of non-livings. Materials and products received from living organisms were considered organic, while non-living things were mineral or inorganic (Rehber, 2011). The scientists realized that this traditional distinction is not rational and all material substances are constructed from the same set of chemical elements with the invention of chemistry in the late 18th century. Nowadays the word organic is used to describe all complex carbon based molecules without depending on whether they are actually products of an living organism or products of laboratory synthesis. **Then, the idea of only some crops and cows are organic, while all others are not is not realistic** (Silver, 2007). **Under this discussion, it would be better to consider the subject production system as ecologic or biologic instead of being organic** (Rehber, 2011). However, the concept of organic farming is used in this paper, in accordance with the worldwide usage.

Presently organic farming is a well-defined concept and a movement that has been based on a strong legislations and institutions. Lady Eve Balfour indicated some basic criteria of organic farming in her statement in the first IFOAM Conference in 1977. **Real organic production is a process claim rather than a product as a regulated and a certified activity. Certified organic products mean that the products are produced according to the standards related to growing and processing methods established by the authorities. Generally a third party inspection is an important part the whole story. On the other hand, it is also confusing that an organic label does not refer to residue free healthy food.** When the concept and principles of organic farming are concerned, indigenous products, which are called **organics by defaults** and products that are collected in the wild named as **wild collected product** beside the organically grown certified products have to be considered. **Organics by defaults** have been practiced in many less developed countries in Africa and Asia. For example, a study indicated that 65% of the country-cropped areas in India are organic by default (Bhagat and Bhagat, 2004)). It is also argued that in some developing countries many farmers have been practicing organic by default, a lower level use of chemicals (fertilizer and pesticide) application, because of the decline in subsidies on agriculture and imports under the restructuring and trade liberation policies (Murphy and Trauger, 2005.). Those who have been using these farming methods are also termed as **de-facto organic farmers**. They cannot be considered **real organic farmers** because their way of farming is sometimes soil depleting and unproductive. The **wild collected or indigenous products** like medicinal plants and herbs, wild mushrooms etc. are harvested from non-cultivated areas. This term covers not only plants or parts of plants but also land animals such as wild bees and some aquatic organisms etc. (Anonymous, 2007).

HISTORICAL DEVELOPMENT OF ORGANIC FARMING

When evaluating development of organic farming movement from a historical perspective, it would be more explanatory to investigate this process into different stages. The beginning of organic movement traced back to the early settled farming era. The period between this beginning and its efforts in realizing organic agriculture as an alternative to the mainstream agricultural activities can be assumed as the first stage of organic movement. Attempts in this stage have been reviewed into two main activity lines as **studies on soil fertility** and **activities as a reaction of industrial agriculture**. The second stage has been coined as the **institutionalization and commercialization period** that includes the growth period of this movement in different lines. The last stage was named as the period of **from commercialization to conventionalization-bifurcation** covering a period from growth stage to present.

EARLY ATTEMPTS (PIONEER STUDIES)

Studies of this period were the main drives behind the development of the organic movement that can be evaluated in two main lines. The first line studies of organic farming movement are related with soil fertility (**preservation soil structure and soil building**). This period almost had begun with the settled agriculture. Naturally, early farming activities were based on only land and labor and real organic. As announced by the Organic Institute, **all agriculture was generally organic until the 1920's** (Korcak, 1992).

The farming cultures of the Far East influenced the experiences of the people in the early stages of organic farming (Vogt, 2007). For example, **Franklin H. King** traveled to Japan, Korea and China and came back with some ideas of organic culture from his travel and prepared his best-known book; **Farmers of Forty Centuries**. He described a kind of agriculture what he called **permanent agriculture** based on crop rotation, green manuring, intercropping, soil conservation and recycling of organic matters (Paull, 2006).

Ewald Könemann was the pioneer of 'natural farming' in Germany. Conservation tillage, composting, application of rock powder, green manuring were the main subjects of his studies. "Viehloser Ackerbau – naturgemäße Bodenbearbeitung" (Farming without Animals – Natural Soil Cultivation) was published in the **Life Reform journal** in 1925 as his first article (Vogt, 2007).

Louis Bromfield was a prolific author of 31 fiction and non-fiction works, including the 1927 Pulitzer Prize-winning **Early Autumn**. He continued to write fiction throughout the 1920's and early 1930's. In that period of the time a kind of **back to the land** or **country life movement** began among the people who lives in city dwellers chose to move to the country in favor of a simple and quite life. Some books of Bromfield including **Pleasant Valley**, focused on soil conservation and other farming issues (Beeman, 1995).

H. Müller and his wife **M. Müller** were pioneer of organic agriculture in Switzerland and the German speaking countries collaborated with Hans Peter Rusch. One of the politicians, Hans Müller gave an impetus to organic-biological agriculture in 1930s and 1940s in Switzerland. He was planning rather direct and simplified relationship between the producers and consumers. His wife Maria Müller who grew up in the farm as him applied these theories to orchard production (Elzen et al. 2004). **Hans Peter Rush** adapted these ideas and incorporated them in a method founded on maximum utilization of renewable resources.

The importance of compost and lime-rich algae (composting, organic matter in soils, natural fertilizers with algae) was put forth by **Raoul Lemaire and Jean Boucher**. They were pioneers of organic farming in France (Niggli and Shukri 2014).

Lady Eve Balfour was an English farmer who studied at Reading University. She bought a farm with her sister in Suffolk. She was not only a farmer but also an educator, organic farming pioneer. She began to investigate the relationship between food, health and the soil, experimenting with compost on her own farm. She published her best-seller book, **The Living Soil in 1946**, which was a starter of the debate in this field (Balfour, 1977). She founded **The Soil Association** by a group of farmers in 1946 (Rundgren, 2002).

During this period, there were some independent studies in Japan. For example, **Mokichi Okada** began practicing nature farming in 1936. The main idea of Mokichi Okada was "**healthy soil = healthy plants and animals = healthy human beings**".

One of the considerable actions related to soil conservation was observed in the USA. **Henry A. Wallace**, who was the Agricultural Secretary between 1933 and 1940, wrote a book named, **New Frontier**. He established The Soil Conservation Service in 1935. According to Wallace, the main aims of this service were to conserve fertility, prevent soil erosion and promote good land use (Kupfer, 2001).

Edward Faulkner is remembered for his book **Plowman's Folly** (1945) and for his ideas about **permanent agriculture**. He was an experimental farmer. He criticized current farming practices and the negative applications of science and technology. He underlined the soil depletion as a main problem and opened a new era by saying, with the key sentence "the fact is that no one has ever advanced a scientific reason for plowing" (Faulkner, 1945).

The second line studies (activities as a reaction of industrial agriculture) in this stage go to the last quarter of the 19th and throughout the 20th century as a reaction to a series of changes in industrial agriculture. The production of chemical fertilizer was the leading force behind these activities. **Rudolf Steiner** is one of the well-

known scientists whose ideas were an early response to chemical agriculture. The foundation of his research was the science of the spirit that he called **anthroposophy** (Childs, 1996). Anthroposophy is a kind of rationalized mysticism. Anthroposophical Society founded by Rudolf Steiner in Austria in 1912, which currently operates through an international foundation called **Demeter** (Sansavini, and Wollesen, 1992,). He gave lectures based on the idea that the **human being must live in harmony with the environment as the main part of the cosmic equilibrium** (Ullrich, 2000). Biodynamic farming was developed at the end of the 1920s in Germany, Switzerland, England, Denmark and the Netherlands. As a consequence of this movement, a kind of a first organic labeling system **Demeter** was created in 1924 based on the Steiner's ideas. The first standards published in 1928 distinguished between biodynamic products **Demeter I** and conversion products **Demeter II** (Vogt, 2007).

Ehrenfried Pfeiffer was a German scientist, soil scientist, leading advocate of biodynamic agriculture as a student of Rudolf Steiner. E. Pfeiffer moved to USA, consulted with those interested in **biodynamic farming** and helped to form the **Biodynamic Farming & Gardening Association** in 1940. He worked closely with Rudolf Steiner to test and document many of the effects of biodynamic practices. He served as a bridge to convey biodynamic concepts to the English-speaking world. Pfeiffer published his book **Bio-Dynamic Farming and Gardening Soil Fertility Renewal and Preservation** in 1938. It was the first popular book about the biodynamic agriculture (Paull, 2009).

Expanding using chemicals in agriculture and modern plant breeding, improved agronomy changed agriculture in developed world after WW II. This development has been transferred to the developing world by some foundations. William S. Gaud from the USA coined the term **green revolution** to describe this phenomenal growth of agriculture in 1968 (Hazell, 2002). Besides, rapid development in processing and marketing of agricultural-food sector along with the changing structure of farming from subsistence to commercial types was called as **industrial and commercial agriculture**. Almost as parallel to this movement, individuals and related organizations have questioned the sustainability of the intensified agricultural system and considerable efforts have been devoted to give rise to alternatives such as organic farming. There is a common acceptance that the term organic, as a descriptor for a certain ecological agriculture system was first used by **Lord Walker James Northbourn** in his book **Look to the Land**, published in 1940 (39, 40). He was influenced by the thoughts of Rudolf Steiner. The term is used as **organic versus chemical farming** as the heading of chapter three (Kristiansen, 2006).

Jerome Irving Rodale was interested in the work of Ehrenfried Pfeiffer who was a partner of Rudolf Steiner. Rodale came under the influence of the organic movement, in part through the ideas of the biodynamic movement, especially the works of Ehrenfried **Pfeiffer**. He visited Pfeiffer's farm in Pennsylvania to share ideas. He published articles with Pfeiffer (Heckman, 2005). **Rodale** founded **Organic Farming and Gardening** magazine in 1942, (Now it is called as **Organic Gardening**). The first issue of **Organic Farming and Gardening** featured an article by Albert Howard. The magazine was printed 14,000 free copies as the first issue and sent to farmers free of charge. J. I. Rodale expanded his studies on Howard's ideas. He identified a number of good farming practices in his famous book **Pay Dirt** (Kuepper, and Gegner, 2004). He established the **US Soil Association** that was later known as the **Rodale Institute** to encourage and expand researches in organic farming (Jones, 2012). Meanwhile, it might be informative to mention about the world's second organic farming journal **Organic Farming Digest**. Australian Organic Farming and Gardening Society that was founded in 1944 as the first foundation in this field which had published this journal for almost five years (Paull, 2008).

Albert Howard lived in India for twenty-six years and worked in several agricultural research centers. He discovered the linkages between the health of the soil and the health of plants and animals fed by crops, that grown in that soil. These experiences were collected into his book **The Waste Product of Agriculture** (Kristiansen, 2006). In 1943, Howard published a new book titled as **An Agricultural Testament** advocating farming without fertilizer and pesticides. He later published a book named as **A Study of Organic Agriculture** in 1947 which was the first book having the term organic agriculture in the title. **He was referred to as the father of modern organic farming**. Meanwhile it is necessary to mention his counterpart **Robert McCarrison's** studies. **The Medical Testament** was published by the 31 doctors in 1939. It was based on the Howard's work on crop breeding and Robert McCarrison's studies in nutrition (Addison, 2008).

Paul Keene was one of the first organic farmers. Paul Keene and his wife began teaching at the **Threefold Farm**, where they met Ehrenfried Pfeiffer. Keene worked and studied with Pfeiffer there for two years. He learned about farming practices of Howard's work while living in India on a two-year teaching contract in 1939. They bought a 100-acre farm, began organic farming, and founded a mail order organic Food Company in 1946. He mentioned organic practices in one of his books **Fear Not to Sow** (Sligh, and Cierpka, 2007).

The book **Silent Spring** published in 1962 by **Rachel Carson** is considered a key point for modern organic and environmental movements in the 1960's. She discusses the effects of pesticides and the theme of environmental connectedness in her book. The book made a huge impact and have launched to the worldwide environmental movement. Officially banning the use of DDT in 1972 was of the remarkable results of the book. **Silent Spring** has been called one of the most influential books of the 20th century (Kuepper and Gegner, 2004). **Helen K. Nearing** and her husband **Scott Nearing** lived a life experiencing a resistance environmental degradation, economic exploitation and militarism. They moved from New York City to live in a farmhouse on 65 acres in Vermont in 1932. They created organic gardens, handcrafted stone buildings, and practiced living simply on the farm for over 20 years. They are considered among the pioneers of organic farming in the USA. Their book **Living the Good Life** (1954) and other publications as well as their way of living promoted organic farming (Hynes, 2007).

Masanobu Fukuoka was a farmer and philosopher who was born and raised in the Japan. **One Straw Revolution** written by him was published in 2001. This book is one of the most interesting studies in this field. The main principles of his application were no cultivation. Using chemical fertilizer or prepared compost, weeding by tillage or herbicides and dependence of the chemicals were forbidden (Fukuoka, 2001). This method has been named as **Fukuoka Farming** after him.

THE INSTITUTIONALIZATION AND COMMERCIALIZATION PERIOD

Beginning of the 1970's, a rapid institutionalization had been occurred while the research and practice of organic agriculture had been expanded worldwide along with a considerable increase for the demand of organic products. In this period, some studies in political and economic fields contributed to the organic movement. For example, **Limits to Growth** written by D. H. Meadows, D. L. Meadows, J. Randers, and W. W. Behrens (1972) mainly focused on the consequences of a rapidly growing world population and finite resource supplies. The other well-known book **Small is Beautiful (1973)** by **E. F. Schumacher** who was President of The Soil Association, explained the need for a new lifestyle and economic structure based on ecological and spiritual values (Moss, 2010).

In this period, the main organizations have been established which are presently active and realizing important functions. **Foundation Ecology & Agriculture** (Stiftung Ökologie & Landbau (**SÖL**)) was founded in 1962 by **Karl Werner Kieffer** and has worked specifically on organic agriculture since 1977 (<http://www.soel.de>). Another important organization, **Bioland** was founded in 1972, which is Germany's largest farmers' organization.

Foundation of the International Federation of Organic Agricultural Movements (IFOAM) in 1972 was the important cornerstone in the commercialization period. Currently, IFOAM has close to 800 Affiliates in more than 100 countries. The Research Institute of Organic Agriculture (Forschungsinstitut für biologischen Landbau-**FiBL**) was founded in 1973. FiBL is the world's leading information and documentation center for organic agriculture. The German based FiBL Deutschland was founded in 2001. FiBL exists also in Austria since 2004. One of the organizations involved in organic agriculture is **The Louis Bolk Institute (LBI)** which is one of the largest independent research Institutes in Europe, specialized in organic agriculture (Lammerts et al. 2007).

As a strictly controlled practice, organic farming needs some regulation arrangements. The early norms for organic farming were more in a form of recommendations rather than standards. The federal government of the USA published a regulation for organic foods in 1990 and the EU adopted a regulation in 1991. Most of the standards and regulations are similar mainly because of the referencing of the same basic standards (**IFOAM standards, Codex Alimentarius and EU regulation etc.**) (Kallender and Rundgren, 2008). According the

IFOAM, the number of countries, which have organic regulation, was 87 in while eighteen countries are in the process of drafting in 2016 (Willer and Lernoud, 2017).

IFOAM and FiBL have been publishing a comprehensive book about statistic and trends since 2000 titled as **The World of Organic Farming** announcing it at annually organized BioFach Fairs. According to the IFOAM&FIBL survey (2017), **global sales of organic food and drink reached 81,7 billion US Dollars in 2015**. North America and Europe generate most of the sales having over 90% (Sahota, 2017). **Organic agricultural land had** increased 239.19 % between 1999 and 2009 at an average rate of 11.75 % from 11.00 to 37.23 million hectares.

While there was a stable period between 2004 and 2005, the highest increase was observed between 1999 and 2000 with a 35.46% rate (Rehber, 2011). Despite this rather rapid development, it is estimated that currently only 0.9 % of the world agricultural land is organic. Organically managed area worldwide including in conversion area has reached to 50.9 million hectares in 2015. There was a 6.5 million hectares increase in organic agricultural land in 2015 comparing the previous year, of which 4.4 million hectares are from Australia (Willer and Lernoud, 2017).

There is almost a similar growth trend in **organic animal husbandry** with the development of organic crop production activities. Indeed, it is an expected result when holistic structure of agriculture and nutrient cycling are considered. Public awareness and concerns about safety food along with animal health and welfare were the main initiatives behind organic livestock production. Having about 33.1 million hectares of grassland/grazing areas out of organic agricultural land worldwide (50.9 million hectares) in 2015 shows the importance of livestock production in organic farming. Organic livestock increased dramatically in the USA. Total number of livestock and poultry has reached to 22,389,214 in 2015 (https://www.nass.usda.gov/Newsroom/archive/2016/09_15_2016.php). Total value of the billion in organic commodities sold was estimated as \$6.2 billion. Of which about \$3.6 billion came from organic crops (fruit, vegetable grain etc.), while \$2.6 billion was from organic livestock and poultry and their products in 2015. In many member countries in the EU, livestock production began with beef, lamb, and milk. According to the 2015 survey there were 4.5 million sheep, 3.6 million bovines, 0.8 million goats, 0.9 million pigs, and 41 million poultry (Willer, and Lernoud, 2017). In **Australia**, total land areas fully organic certified and in conversion was about 24 million hectares in 2016. The majority of this area used for beef cattle production. Sheep production for meat and wool has traditionally been a main livestock production in Australia. According to the Australian Organic Market Report the total value of the Australian certified organic industry to be \$1.72 billion in 2014 (FAO, 2009).

Aquaculture is a rapidly growing industry, which it represents an annual growth rate of nearly 7 % from 1950s until 2006 (55). Organic aquaculture is an attempt to mitigate these problems through producing fish and other marine creatures in conditions that are as similar to their natural habitat as possible. Organic farmers and organic farming associations in Austria and Germany first started to develop extensive organic carp production systems in the early nineties (FAO, 2009). While, the first organic carp standard issued in Germany in 1995, IFOAM approved final version of its aquaculture standard in 2005. The organic aquaculture production has doubled, and it reached to about 4 million tons in 2015 mainly concentrated in Asia (80% China) and Europe (20%) (Willer, and Lernoud, 2017).

Despite of the millions of farmers in developing countries, particularly in marginalized areas practice non-external-input agriculture, beginning of the organic farming for the market in most of these countries can be considered in this second period (Rehber and Turhan 2002). For example, organic production in Turkey is started in the 1980s in the Aegean Region by European exporters. Since then, organic production and consumption have increased each year. While the first organic product was only sultana grapes, the number of the organically produced products reached to almost 200. Dried fruits, edible nuts, spices and herbs, fresh/processed fruits and vegetables, pulses, cereals, industrial crops, oil seeds, and other raw/processed products are among those products (Rehber 2011)

There were over 2 million **organic beehives** in 2015 that equal about 2.5% of the world total number of beehives which are mainly located in Latin America (45%) and Europe (40%). Organic animals have to be fed by **organically produced feeds** preferably grown on the farm itself. That is why organic feed production has to be considered an integral part of organic livestock production. There is not a worldwide data of **organically produced**

feeds. However, in some studies shows **the shortage of organically produced feed as** a bottleneck for expansion of organic livestock sector (Green et al. 2009).

Four hundred and forty different **wild collected products** from 71 countries have been reported in recent statistics. The majority of countries (80%) are developing and emerging economies. About 150 and 200 thousands of people are involved in organic wild collection including collectors, local agents and processors. Approximately 39.4 million hectares of wild collection areas have been estimated including beekeeping areas in 2015 (Willer, and Lernoud, 2017).

FROM COMMERCIALIZATION TO CONVENTIONALIZATION-BIFURCATION

Having a steady development during the last quarter of the 20th century, organic farming has been labeled as being in a process of **commercialization-bifurcation** (Halberg et al., 2005). However, it is not possible to differentiate the period commercialization and conventionalization-bifurcation. **While the concept of conventionalization is used to explain the changing structure of the organic movement towards mainstream conventional (industrial) agriculture, bifurcation refers to the process by which organic farming adopts a dual structure** (Lockie, and Halpin, 2005). There are some theses, which argue that organic farming has been converged through mainstream agro-food sector as long as commercialized. Some argue that conventionalization and bifurcation are simultaneously occurring others evaluate that bifurcation is an outcome of conventionalization (Buck et al. 1997, Konstantinidis, 2014). When we consider widely availability of the de facto organic farming and wild collection activities at least in some regions as in Turkey, especially for the developing world the second view seems more acceptable.

The conventionalization-bifurcation theses are based on two main views. **First view** is related to contemporary development of production and marketing structures in agro-food chain. Second view looks at conventionalization-bifurcation as one of the consequences of strict regulations in organic farming (Milestad, and Darnhofer, 2003). One of the main aims of organic farming is survival of family farms and supplying to local markets. On the other hand, being a part of the globalized food chain is one of the main drives behind the development of the organic movement. **This sounds like a big dilemma**, which is expressed by many scientists who support the main philosophy of organic farming. Today's organic market chains include food stores, gourmet specialty stores and e-commerce allowing a broadened number of products. Producers, manufacturers and supermarket chains of the mainstream agro-food sector have entered the organic marketplace. Multinational firms demand a large amount and rather uniform produce. This demand structure needs monoculture, specialization and larger acreage to provide economies of scale. **These changes will inevitably lead to an organic agriculture that increasingly converges with the conventional food industry** (Klonsky, 2000).

According to second view, certificated part of organic farming is subject to be conventionalized, while un-certificated productions i.e., closed systems and de-facto organic production trying to survive as part of a bifurcated structure. Having a well-established and reliable inspection and certification system is vital for organic farming. However, the high certification costs paid to multinational companies are the main barriers for small farmers. Certification is a challenge for organic farmers not only because of the considerable production cost but also as a hard procedure to fulfill and a large number of documents to complete. That means available regulatory framework and certification system looks highly bureaucratic (Vairo, et al. 2007). Therefore, there is a group of farms has become an industrialized part of the mainstream agriculture. On the other hand, there are the farms, which produce a variety of products and still make their living through niche markets. They are selling their products directly to the consumers in a rather closed system and relying on their personal reputation to ensure product integrity (Lyson et al. 2004) There are different connotations used to describe bifurcation of organic agriculture by different scientists such as **pragmatic-pure**; conventional-artisanal; **indirect markets (organic lite-certified)-direct markets (deep organic-non-certified)** etc. (Constance et al. 2008). The most used definitions are **deep and shallow organic farming** borrowed from ecology movement. (Coleman, 2004) **Deep organic farming**, after rejecting agricultural chemicals, uses freely available natural soil foods like deep-rooting legumes, green manures, and compost **Shallow organic farming**, after rejecting use of chemicals, looks for practical use of readymade organic inputs. Shallow organic farmers are mostly dependent on domestic and international commerce

and industrial agricultural establishments that they treat shallow farmers via chemical farming through controlling their input and output supply (Coleman, 2004).

This conventionalization-bifurcation thesis is not only desk-based assessments, but also **based on the some empirical field studies**. A study carried on in 2005 with a group of small and medium farmers in Andalusia, **Spain** shows that the current strict certification system in organic farming ignores and penalizes the possible transformative potential of the organic sector. Consequently the structure promotes conventionalization and bifurcation (Padilla and Guzman 2009). A research has been realized by **Best (2008)** to test some implications of the conventionalization hypothesis in **Germany**. The study was based on data collected from 973 organic farmers in three German regions during the spring of 2004. The results indicate that there some conventionalization signals in the studied regions. That means it is at the beginning stage. A comparison has been done between Germany and the New Zealand. It finds that recent developments in **New Zealand**, the German case is different. There is no bifurcation into “deep organic” farmers producing for the domestic market and “organic lite” farmers supplying the global market in Germany as in the farmers in New Zealand (Best, 2008). Same observations have been made for the **Netherland** that the influence of conventional agro-food commodity chains on organic agriculture is increasing and that the use of off-farm inputs is getting higher. Therefore, current practices in organic agriculture may have negative effects on issues like energy use, nutrient losses and recycling. It is argued that there are some conflicts with all IFOAM principle especially with the principles of ecology and health looking at the consequences of conventionalization in some sectors of organic agriculture in the Netherlands (De Wit and Verhoog, 2007).

A research has been conducted by D.H. Constance, J. Y. Choi, and H. L. Ho-Glang in 2008. It examines the conventionalization and bifurcation through a comparison of certified and non-certified organic producers in Texas provides a mixed support for the conventionalization thesis. The research had been based on the data collected from eighty-four farms (50 were certified and 34 were non-certified producers) (Constance et al. 2008).

The conventionalization has been discussed in a working group (2.6) in XXIII Congress of the European Society for Rural Sociology held in Vaasa, Finland in 2009. It is underlined that the debates on the thesis of conventionalization for over ten years yielded some various viewpoints and empirical evidences. Totally 12 papers have been discussed in that workshop. One of the important outcomes of that workshop was that “although conventionalization has not been identified as the dominant trend in organic farming, it represents a threat for organic farming development (Blanc et al. 2009).

J. R. Goldberger (2010) conducted a study in Washington State to evaluate effects on conventionalization. She used multiple regression analysis to investigate how perceived contributions of organic agriculture to economic, social and environmental sustainability. She found that conventionalization at farm level has a significant positive effect on economic sustainability while having a significant negative effect on environmental and social sustainability (Goldberger, 2010).

Some scientists have criticized the methods used in assessing conventionalization in organic farming (Darnhofer et al. 2010). **First** argument is that used data in such studies does not sufficiently reflect the heterogeneity and complexity of organic farming at farm level. **Second**, it is not considering early and late adopters. That means these approaches are fundamentally problematic. Because, they ignore the learning processes that leads to changes in knowledge and behavior of farmers after the conversion period (Padel et al. 2008). A similar weakness can be observed in some studies based on aggregated statistical data and assess changes in the ‘average’ organic farm at two points in time. These studies often conclude that organic farms are now larger and more specialized than they used to be. Darnhofer et al. (2010) shown that methods used in the conventionalization debate do not reliably assess conventionalization, as they tend to focus on structural characteristics (Darnhofer et al. 2010). They advised a comprehensive approach built on the organic principles that are based on some indicators. These indicators have to be comprehensively covering main principles of organic farming defined by IFOAM (2005) and do justice **to the holistic nature of organic farming**.

CONCLUSIONS

It can be argued that after almost more than three decades, conventionalization of organic farming has been an unavoidable result in the contemporary global economic environment. In this structure, there is a need to develop reasonable indicators to measure conventionalization both in respect to size and scope. **In short, we need some criteria which show how many main principles of organic farming have been breached and to what extent.**

If we know that family farming and local production in organic production including closed system are a fact and we are supporting them, bifurcation structure in organic farming also has become a reality. Hence, having a bifurcated structure is an expected result rather than being a problem has to be solved in a highly commercialized environment. On the other hand, recent development in agro-ecologic farming alternatives which respectful to ecosystems, food safety etc. and in sensitivity and having strict control in the field of human, animal and environmental safety issues have created an easily observed rapprochement between farming alternatives including organic farming.

In this case, making stronger of implementation of some measures such as easy access to technical information and some organic inputs, and having an affordable and simple accreditation system have been gaining importance in order to keep family small size farms in the organic sector. Acting in an organized manner, i.e. under umbrella of a cooperative would help small family farms to combat difficulties that they faced in this environment. Supporting of the closed systems like community-supported agriculture is also important to achieve this target.

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