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ORGANIC AGRICULTURE IN CONTEMPORARY SOCIETY

Diploma Thesis

Author: Jana Kuttichová

The Diploma Thesis Supervisor: Ing. Lukáš Zagata

Thesis Declaration

I hereby declare that I have written this thesis “Organic Agriculture in Contemporary society” on my own, only with the help of acknowledged literature and data sources.

In Prague, 15th April 2009.

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Jana Kuttichová

Acknowledgement

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ORGANIC AGRICULTURE IN CONTEMPORARY SOCIETY

EKOLOGICKÉ ZEMĚDĚLSTVÍ V SOUDOBÉ SPOLEČNOSTI

Souhrn:

Tato diplomová práce se zabývá ekologickým zemědělstvím v České republice, jeho hlavními trendy a problémy. Práce se zaměřuje na příčiny nedostatku biopotravin v ČR a snaží se identifikovat faktory, které nabídku biopotravin ovlivňují.

Práce je rozdělena do dvou tématických celků. Literární rešerše se zabývá vznikem a vývojem ekologického zemědělství, jeho charakteristikou a hlavními principy, kterými se řídí. Hlavní důraz v této části je kladen na zmapování současného stavu organického sektoru u nás, zejména na identifikaci slabých stránek a determinantů dalšího rozvoje organického sektoru.

Praktická část této je věnována biopotravinám, a to zejména těm, které na českém trhu chybí. Případová studie zaměřená na producenty zeleniny, se snaží odhalit konkrétní příčiny, které zemědělcům brání při výrobě těchto primárních produktů. Na základě analýzy dostupné literatury se práce snaží najít doporučení, kterými by se jejich současná situace farmářů dala zlepšit.

Klíčová slova:

Multifunkční zemědělství, ekologické zemědělství, konvenční zemědělství, bioprodukt, biopotravina, kvalita, státní podpora, inspekce, certifikace.

Summary:

This paper is concerned with organic agriculture in the Czech Republic, its major trends and problems. The thesis focuses on causes of insufficient supply of organic food in the CR and tries to identify factors influencing organic food supply.

The thesis is divided in two thematic units. The literature overview concentrates on origins and development of organic agriculture, gives its brief characteristics and major principles it abides with. Within the scope of this part, the main emphasis is placed on mapping the current state of the Czech organic sector, particularly on identifying week points and determinants of future development of the organic sector.

The practical part is addressed to organic products, namely those missing on Czech commodity market. The case study, centred on producers of vegetable, tries to reveal main causes inhibiting farmers from production of these primary products. On the basis of the study of available documents, this paper tries to come out with recommendations for improvement of their current situation.

Key Words:

Multi-functional agriculture, organic agriculture, conventional agriculture, organic product, organic foodstuff, quality, state support, inspection, certification.

Contents:

Acronyms:

AEM	Agri-Environmental Measures
AP	The Action Plan
CAFIA	The Czech Agriculture and Food Inspection Authority
CEE	The Central and Eastern Europe
CR	The Czech Republic
CSA	The Community Supported Agriculture
EAFRD	The European Agriculture Fund for Rural Development
EC	The European Commission
EEC	The Council of the European Communities
EU	The European Union
FiBL	The Research Institute of Organic Agriculture
GMOs	Genetically Modified Organisms
HRDP	The Horizontal Rural Development Programme
IFOAM	The International Federation for Organic Agriculture Movements
KEZ	The Organic Farming Control
MoA	The Ministry of Agriculture of the Czech Republic
MoE	The Ministry of Environment of the Czech Republic
MoEYS	The Ministry of Education, Youth and Sports of the Czech Republic
MoIaT	The Ministry of Industry and Trade of the Czech Republic
NGO	Non-Governmental Organisation
OA	Organic Agriculture
QLIF	Quality Low-Input Food
RDP	The Rural Development Programme
SAIF	The State Agricultural Intervention Fund
SoEL	The Foundation Ecology & Agriculture
SVA	The State Veterinary Administration of the Czech Republic
WWOOF	The Working Opportunities on Organic Farms

1 INTRODUCTION

This paper is concerned with the current state the organic agriculture in the Czech Republic, its current trends and problems, from sociological perspective. It focuses on factors which influence organic food supply in our country and tries to identify causes of the insufficient supply of domestically produced organic food. By looking at existing exploratory studies on the organic agriculture the paper tries to reveal some factors which cause the underdevelopment of the sector in certain areas and subsequently tries to find solutions which could help to improve the current situation.

In order to understand importance of this topic, we must have a look at the current world from the more comprehensive perspective. It is necessary to realize, that lately there comes to many negative changes in the world which surrounds us which directly or indirectly influence our lives. There comes to the depletion of the natural resources, to negative changes of the climate, starvation of people in third world countries, depopulation of rural areas and to the loss of employment of many people, including those working in agriculture. The fore passed agricultural management systems have negatively reflected into current state of agricultural landscape and the countryside and led to the outflow of agricultural workers into the cities and dilapidation of agricultural infrastructure. The intensification connected to the use of heavy mechanisation resulted into the devastation of the natural environment, exhaustion of the natural resources and destabilisation of the ecological balance. It also influenced negatively the quality of foodstuffs and welfare of domestic animals.

Currently we have to face all of these problems and it is our obligation to seek for ways which would moderate the impact of these negative changes and which would show us ways towards sustainable development of the live on our planet. In is necessary to search for the ways of sustainable production of sufficient amount of the quality and healthy foodstuffs for the growing world's population. And exactly the organic agriculture could represent one of these ways.

The organic agriculture represents a sustainable production system that uses environmentally friendly methods of weeds, pests and diseases control, bans the use of synthetic pesticides and fertilizers, emphasizes animal welfare in animal breeding and takes care of the overall harmony of the agri-environmental system, its biological diversity and the responsible use non-renewable resources. Its main mission is possible to see in the production of quality and healthy foodstuffs. It also fulfils non-production functions which consist in the environmental protection, maintaining the natural character of rural

landscape and stability of settlement and creation of the employment possibilities in a country. This agricultural system is very closely tied with the structural policy of the European Union and it is evident that in oncoming years there will be a strong trend to promote the organic sector. In the Czech Republic, as well as in other European states the organic agriculture develops exactly thanks to the stable support from the EU funds. Since 1990's there has been a spurt growth in areas organically farmed land in the CR, however, there also remained some areas of underdevelopment, such as low level of production, processing, distribution or marketing of organic products. There is also an insufficient demand of Czech people for organic foodstuffs. From statements of organic farmers it is also possible to judge about even more serious problems persisting within the sector.

So that it organic agriculture could develop successfully in its all aspects, in addition to the stable and effective support, it is necessary to monitor current state of organic sector, to detect possible problems, to try to reveal their causes and look for the ways to their resolutions. There must be identified certain phenomena which influence demand and supply of organic products as well as causes of these phenomena, so that some efficient changes could be done. The aim of this paper is to contribute to these ongoing discussions.

The paper is structured into two parts – the literature overview and the empirical study. The literature overview is concerned with the development of the human-land relation and with the origination and development of the organic agriculture in the world countries and in the Czech Republic. This part also provides with a detailed definition of the organic agriculture, its principles, functions and its significance in contemporary society. The major emphasis of this chapter is placed on the description of the current state of the organic agriculture in the Czech Republic with a view to its weak points.

The empirical part comprises the case study with organic farmers (producers of organic vegetables) and describes the main factors which influence organic food production and farmer's views on the current state of the sector. The ascertained results are subsequently supplemented by the results of other existing studies on the organic agriculture in the Czech Republic, and they point at other factors which negatively reflect into the current state of the sector. The paper is closed by recommendations of the author.

2 OBJECTIVES OF THE THESIS AND METODOLOGY

2.1 Objectives of the thesis

The purpose of this paper was to map and analyze current state of organic farming in the Czech Republic, to describe its development, characteristics, major principles and role it plays in current society. The main objective of the thesis is to identify factors which influence organic food supply in the CR. Using the case study method the paper tries to clarify the low level in supply of organic foods from the domestic production.

The part of the study aim was to find responses to the following questions:

- What are the factors supporting/constraining organic production?
- What are their impacts on organic production?
- What effect they have on a final state of organic sector?

Based on the evaluation of the current state of organic sector in the CR, the subsequent aim of this paper is to provide concrete proposals which could lead to some improvements in sector's development.

2.2 Methodology

The study applies qualitative methods. For the fulfilment of study aim, a combination of primary and secondary data collection methods was used. The empirical study part was based on a multiple case study method which allows study of a few cases and enables their mutual comparison. In order to get a rich picture of the situation, interviews with vegetable producers from different regions were held, using semi-standardized interviews as the main data collection technique. The overall character of the study was explorative.

The object of the empirical study was concerned with the following topics:

- characteristics of the organic enterprise
- structure of demand, distribution and marketing opportunities
- inspections and state support
- perceived barriers to organic production

The study was combined with additional document study enabling further comparison and recommendations.

3 LITERATURE OVERVIEW

3.1 Development of the human-land relation

Every human activity is in essence driven by some world opinion that means by a set of shared values, thoughts, ideas, major evaluations and norms. These are usually called “culture” or “civilization”. Basic attitudes (norms) are institutionalized in every organized society and they are decisive for the choice of production factors and methods. This chapter, based on the work of Petr and Dlouhý (1992) describes, how different notions of nature developed throughout humankind history and how they were reflected in human activities in relation to the environment.

Agriculture was closely tied with humans since the times of Neolithic revolution (10 to 7 thousand years BC) when people started to cultivate land in order to obtain food. In hunter-picker society people lived in immediate contact with nature on which they were directly dependent and whose resources they could not control. This dependence caused people felt responsible for their natural environment which was treated in a friendly way and with respect.

These considerations also were reflected into moral rules of people which caused that nature was personalized and venerated. We can find multiple examples in Eastern philosophies, such as in a Chinese philosophy or Taoism. Tao is a principle of cosmic harmonic order. It assumes that humans are integrated with nature who as aspects of the same order, conform to the same principles. The human as the receiving partner treats nature in a friendly way what for he is given a possibility of existence. Such approach is sometimes referred to as holistic.

In humankind history however, different notions of nature occurred (Ancient Greek philosophy, Christianity). The Stoic and Epicurean philosophic school highly appreciated technical achievements and a human interference into the course of events. They were of the opinion that nature was created intentionally in order to serve humans. Similarly the Christianity considered nature as a source that humans have to reshape and itilize for own purposes. According to the Genesis (the first book of the Bible of Judaism and of Christianity), the God created the human and the earth in own image and gave him rule over the world and its inhabitants. Human was meant to be superior to nature. Since nature was not regarded as venerable, people had no moral responsibility to it. For this mind, the Christianity can be designated as one of the most anthropocentric religions.

During the 16th and the 17th century and especially in the18th century (so called the Enlightenment era), the utilitarian mechanical materialism became to be dominating world opinion in the European culture. On its base, human had an obligation to acquire a full predominance and power over nature and to subordinate all things to human needs. All organisms were regarded as inanimate machines who the human from his position could treat without constrains. By this way, nature was fully separated from humans and moreover, it was degraded to a single raw material for satisfying human needs.

Together with this strengthening anthropocentric mechanical thinking, an opposing natural philosophy of the German Romanticism started to develop during the18th century. Romanticism considered nature as an entire unit – everything in the nature was mutually related and no form of live was derogated. This philosophy on the contrary considered human and nature to be an entire unit which underlies the same dynamic principles.

The predominant tendency to arrogant and regardless attitude towards nature culminated in European mind during the 19th century in the Marxist philosophy. According to the so called dialectic materialism, nature was regarded as a factor of production and source of raw materials only, wholly to the disposal of human. By means of scientific and technological progress, man had to gain the power and rule over nature. Socialism finally, in its attitudes to land, represented just a more racial exploitation of nature.

From the previous historical overview it is possible to conclude that conventional agriculture, in a way practiced during the past century, was determined by the anthropocentric (or human-centred) philosophy in which human is superior to nature and has no moral responsibility towards its state.

By a similar way it is possible to claim, that the organic agriculture which became a “hot issue” in last forty years, is based on the holistic approach where human and nature are equal and it is the moral and ethical responsibility for people to act according to natural principles.

3.2 Origins of organic agriculture and its development

3.2.1 Origins of organic agriculture in Central and Western Europe

Origins of organic agriculture date back to the beginning of the 20th century. Already at this time it became increasingly apparent that agriculture as practiced was struggling to feed people adequately and was causing a considerable damage to the environment (Conford, 2001). Widespread soil erosion occurred not only in Europe but also in the USA, South Africa and Australia. At the same time the continued food shortages started to appear in many parts of the world caused many to fear the inadequacies of the agricultural systems. These problems led many agricultural scientists and rural thinkers began to look towards solutions to these problems. (Holt and Reed, 2006).

Although some concepts of organic farming predated his work, today sir Albert Howard (1873-1947) is regarded by most as *the founder and pioneer of the organic movement* (Steiner, 1958; Conford 2001; Gyerin, 1999). The British botanist educated in Cambridge, became professor of agricultural science at the University of Wye in 1903 - 1905 (Gyerin, 1999). He then moved to India where, for twenty-six years he directed several agricultural research centres and studied agricultural practices of local farmers. After his return to England he published the book *An Agricultural Testament* which became central to organic farming. (Hackman, 2007).

Together with Sir Albert Howard, also Lady Eve Balfour cooperated on the development of organic farming methods. In the year 1946 she initiated foundation of the Soil Association in London which till nowadays represents the most significant association of organic farmers in Britain (Urban and Šarapatka, 2003).

In German speaking countries, origins of organic agriculture are adherent to the work of Rudolf Steiner. The German philosopher started with the series of lectures presented on a farm in Kobewitz in 1924. Main principles of his biodynamic agriculture are based on anthropocentric, holistic theory which comprehends all live organisms as a well-balanced unit. This is on contrary of the physical-mechanic, analytical thinking dominating at that time (Urban and Šarapatka, 2003). Steiner emphasized farmer's role in guiding and balancing the interaction of the animals, plants and soil. According to his teaching, healthy animals depended upon healthy plants, healthy plants upon healthy soil, and healthy soil upon healthy animals (Paull, 2007).

3.2.2 Development of organic farming in last decades

The early 1970s saw an upsurge in the development of the organic movement. In 1973 the Californian organic movement not only introduced standards but a system of third party inspection as well, and that year the Soil Association did the same. Simultaneously the first international discussions were initiated to form an alliance of organic farming organizations across the world (Holt and Reed, 2006).

In 1972, the International Federation of Organic Agriculture Movements (IFOAM) was founded in Versailles, France. This umbrella worldwide organisation for organic movement, currently uniting more than 750 member organizations in 108 countries (IFOAM, 2005), had a major influence of the official recognition of organic agriculture in Europe.

On its field in 1991, EEC Regulation No. 2092/91 on organic production and labelling of organic products and food was adopted. The regulation represented the first legal norm defining main production procedures of organic agriculture, and in particular, mandatory mechanisms for inspection, certification and labelling. Thanks to its adoption a considerable protection for both producers and consumers was achieved (Šarapatka and Urban, 2003).

The same year 1991 saw establishment of the IFOAM European Union regional group, representing the sector's interests before the European Commission. The IFOAM European Union regional group became a competent partner in all questions relating to the development of the EU regulation on organic farming.

The launch of the BioFach trade fair, which has been held since 1990 in Germany, marks another milestone in the history of European organic farming, demonstrating the growing importance of the market for organic products. Today it is based in Nuremberg, and it has become the biggest trade event for organic products, not only in Europe but world-wide (Willer and Yussefi, 2003).

The last twenty years brought the most turbulent period in organic agriculture development. This was mainly the cause of supporting programs of the European Union (e.g. utilizing EU regulation 2078/92 for organic farming subvention), a significant role was also played the consumers' demand for organic products. The development culminated on the brake of the millennium, when it came to the professionalization of organic farming structures (consultancy, processing of organic products and marketing). At this time, organic methods became also subject of specialized research and educational institutions (Šarapatka and Urban, 2003).

In July 2007 Council Regulation (EC) No. 834/2007 on organic production and labelling of organic products was published and it came into force on January 1, 2009. It repeals the former Regulation (ECC) No. 2092/91. In September 2008, its implementing rules were published as Commission Regulation (EC) No. 889/2008 of 5 September 2008. The aim of this implementary regulation is to lay down detailed rules with regards to organic production, labelling and control.

3.2.3 Development of organic farming in the Czech Republic

In the Czech Republic the movement for organic farming began its formation from the mid 1980's. The first impulse came up from consumers who started to worry about their heath in reaction to articles in technical papers adverting to a bad health state of the Czech population compared to some Western European countries. Subsequently, there arose vegetarian and alternative food oriented groups which showed the way out from the excessive nutrition norms of that time prescribing high meat consumption. The trend to eat healthy diet made of "non-chemical foodstuffs" initiated formation of the pioneer organic enterprises (Šarapatka and Urban, 2006).

The first three organic farms in the Jeseníky Mountains and the White Carpathians began changing over to OF in 1989. In the period 1990 – 1991 five organic farming associations arose. Later several of them merged and formed presently acting PRO-BIO Association of Organic Farmers in Šumperk, and the LIBERA Association in Prague. The PRO-BIO Association works throughout the CR and has eleven regional centres and two professional branches. It is a non-government, non-profit organisation whose mission is to promote organic agriculture and organic food, to work with consumers and to assert right of its members (PRO-BIO, 2009).

Since 1990 the first financial supports were paid out, which were rescinded in 1992 without a substitute and then renewed in 1998. In 1993 a unified system of control was introduced. From that time organic products and food has been libelled with the united graphical logo BIO. In 1995 the control and certification was accredited by the IFOM and the contract was signed on supervision in accordance with Council Regulation (EEC) 2092/91 with an authorized control organization. This enabled Czech organic products to be exported and increased the international prestige of Czech organic farming. Subsequently in 1999 the Ministry of Agriculture entrusted all of the controls on organic farming to the public benefit corporation KEZ (Organic Farming Control) which, till 2005, has been the only control organization in the Czech Republic (Červená and Dytrlová,

2006). Later on, in 2006 other two organizations were entrusted organic inspections and certifications.

An appreciate shift came in 2000 through the acceptance of the Act on Organic Farming No. 242/2000 Coll., which fully harmonized the Czech organic farming standards with those of the EU. Year 2000 was also the year, in which the CR entered the “List of Third Countries”, enabling domestic organic products to be exported into the EU countries.

The year 2004 the government saw the adoption of the strategic document “Action Plan of the CR for Developing Organic Farming by 2010”, which was aimed at creating instruments for resolving problem areas of the organic farming sector. (Červená and Dytrlová, 2006). The document was finally revised in 2007 by the adoption of the “Organic Farming and Organic Food Program” which outlined the future orientation of the sector policy into the oncoming period.

Milestones of the organic farming development can be summarized into following points:

Subsidies for OF, based on investments approach, were provided by the Ministry of Agriculture which were available until 1992.

1993: Methodological Instruction of the Ministry of Agriculture for Organic Farming No. 655/93-340 became effective as a first national directive; inspection and certification system was established and state label “BIO – Organic Farming Product” was introduced

1998: Renewal of the state support for OF within the non-productive functions of agriculture

2001: Act No. 242/2000 on Organic Farming came into force and the MoA entrusted KEZ o.p.s. with inspection and certification

2003: Action plan for OF was implemented as a part of Agri-environmental measures within the new HRDP

2005: Act No. 553/2005 (amended the Act 242/2000) came into force to omit all provisions which were duplicated in the EU regulations

2007: The Organic Farming and Organic Food Program was approved by the Czech Government and launched in 2008 (Hrabalová and Wollmuthová, 2008).

3.3 Organic agriculture and its principles

3.3.1 Definition of organic agriculture

Organic agriculture, also known as ***"****Biological"* or "*Ecological*" represents an exactly defined and controlled system of farm management and food production which is based upon a set of processes resulting in a sustainable ecosystem, safe food, good nutrition, animal welfare and social justice (IFOAM, 2002).

The International Federation of Organic Agriculture Movements (IFOAM) defines organic agriculture as

"*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, 2007).

According to the new Council Regulation no. 834/2007 on organic production and labelling of organic products, organic agriculture pursues following general objectives.

One of them is to establish a sustainable management system that

- respects nature's systems and cycles and sustains and enhances the health of soil, water, plants and animals and balance between them,
- contributes to a high level of biological diversity,
- makes responsible use of energy and the natural resources, such as water, soil, organic matter and air,
- respects high animal welfare standards and in particular meets animals' species-specific behavioural needs;

However, the major objective of organic agriculture consists in sustaining its production function. As well the conventional production system, it is aimed at the production of a wide range of quality and healthy foodstuffs and other agricultural products that will respond to consumers' demand. This should be achieved through the use methods regardful of the environment and by methods strengthening the human, plant and animal health and welfare. In addition to the production function, the organic agriculture fulfils also non-production functions, mainly in the environmental and social area. These will be explained a subsequent chapter.

3.3.2 Principles of organic agriculture

The main contributions which organic agriculture has to the world can be understood from its principles. They concern the way people interact with living landscapes, relate to one another and shape the legacy of future generations.

The IFOAM defines four main principles of organic agriculture as follows:

The principle of health 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 does not mean just the absence of illness, but immunity, resilience and regeneration of all system components. The role of organic agriculture, whether in farming, processing, distribution or consumption, is to sustain and enhance the health of 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.

The principle of ecology states that production is to be based on ecological processes, and recycling. Organic farming, pastoral and wild harvest systems, for example, should fit the cycles and ecological balances in nature, which are universal, but 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.

The principle of fairness 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 with a good quality of life, and contribute to food sovereignty and reduction of poverty.

In relation to living animals, this principle insists in providing them with the conditions and opportunities of life that accord with their physiology, natural behavior and well-being. With regard to natural and environmental resources, these should be used in socially and ecologically just way and should be held in trust for future generations. Fairness requires systems of production, distribution and trade to be open and equitable and account for real environmental and social costs.

The last principle of care stipulates that organic agriculture should be managed in precautionary and responsible manner to protect health and well-being of current and

future generations. Since organic agriculture is a dynamic system which responds to internal and external demands, the new technologies and methods can be used in order to increase efficiency and productivity. This, however, should not be at the risk of jeopardizing health and well-being. Science which is necessary to ensure that organic agriculture is healthy and safe must be supplemented by practical experience, accumulated wisdom and traditional knowledge in order to offer valid solutions. Organic agriculture should prevent significant risks by adopting appropriate techniques 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 (IFOAM Principles, 2005).

3.3.2.1 Technological principles of organic agriculture

Food production principles

The base of the organic crop production is a healthy soil. The fertility and biological activity of the soil should be maintained and increased by multi-annual crop rotations including legumes and other green manure crops (able to bound air nitrogen), by the application of livestock manure and materials from organic production. The use of mineral nitrogen fertilizers, synthetic pesticides and herbicides is not allowed. Prevention against pests, diseases and weeds is ensured by means of natural methods - natural enemies, choices of resistant species and varieties, crop rotations, cultivation techniques and thermal processes. Genetically modified organisms (GMOs) are inconsistent with organic farming principles and therefore must not be used (Council Regulation No. 834/2007).

Animal husbandry principles

Livestock production is fundamental in organic production since it provides the necessary organic matters and nutrients for land cultivation. Animals on the organic farm are kept separate from other livestock and treated in a way to avoid environmental burden. Their numbers are limited with a view of minimizing overgrazing, poaching of soil, erosion, or ground water pollution. For the same reason, feed for organic livestock must be primarily obtained from the farm or holdings from the same region. The breeding technique should strive for the highest animal welfare and respect species-specific developmental, physiological and ethological needs. Animals must have permanent access to open air areas, preferably pasture, whenever weather conditions and state of the ground allow. Tethering or isolation of livestock is prohibited unless for individual animals for a limited

period of time or when it is justified by safety or veterinary reasons. Any suffering, including mutilation, should be kept to a minimum during the entire life of the animal, including at the time of slaughter.

With regard to the reproduction, natural methods are used. Artificial insemination is however allowed, with the exception of cloning and embryo transfer. The choice of breeds should take account of animals' capacity to adapt to local conditions; the choices of suitable breed contribute to animals' vitality and resistance to disease or health problems.

Disease prevention is based on keeping the animals in optimal conditions by appropriate sitting and stocking density, application of good husbandry and management practices, high quality feed, and breed and strain selection. Chemically synthesised medicals including antibiotics may be used under strict conditions, when the use of phototherapeutic, homeopathic and growth stimulators in prohibited. (Council Regulation No. 834/2007).

Processing and storage principles

Organic products must be processed and stored through the way their quality was ensured to the most possible extend and the possibility of contamination from undesirable substances was excluded. The preparation of processed organic food must be kept separate in time and space from non-organic food. In case of parallel storage of organic and conventional products, these must be separated from one another by a physical partition preventing them from mixture or commutation and they must be carefully labelled. During whole course of storage, manipulation and processing, organic products must be exactly identifiable (Šarapatka and Urban, 2003). Organic products must be produced mainly from ingredients of agricultural origin. Only additives, processing aids, flavourings and other substances authorized for use in organic production are allowed. Substances and techniques that are misleading as to the true nature of organic products must not be used (Council Regulation 834/2007).

3.3.3 Agriculture in multi-functional conception

The new multi-functional model of agriculture has emerged as a series of responses to the earlier modernization paradigm. Until the early 1990s', the large-scale enlargement, intensifications, specialisation and, within some sectors, a strong trend towards industrialisation emerged in the agricultural sector. The rural exodus precipitated by declining farm numbers and a sharp drop in employment opportunities was seen as the inevitable outcome of this paradigm. In addition, regional disparities increased and tensions grew between farming on the one hand and landscape, nature, environment and product quality on the other hand (Douwe van der Ploeg, 2000).

In connection with the necessity to solve these issues it came to the formulation of the Common Agricultural Policy (CAP) of the European Union into its current form. The Czech Republic with its accession to the EU in year 2004 joined the European model of agriculture, which major feature is so called "sustainable development" (Tichá, 2008).

The 1987 report of the Word Commission on Environment and Development (the Bruntland Commission) brought following definition of sustainable development:

"It is the development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

Organic agriculture builds on the above conception and thus it is considered as multifunctional model of management, to which, in addition to the production function, also non-production functions are being attributed (Tichá 2008).

Following Hediger (2004) the concept accounts for the fact that agriculture is an economic activity which beyond its primary function of supplying food and fibre provides various non-market outputs to society. These comprise a wide range of benefits, such as:

- environmental benefits: recreational amenities and aesthetic values of the rural landscape, non-use values of biodiversity and habitat protection, intrinsic values of ecosystem and watershed functions
- socio-economic benefits: food security, food safety, animal welfare, rural employment and the viability of rural areas, cultural heritage

These non-market benefits that may constitute potential sources of market failure and therefore some theoretical argument for public intervention and financing of organic farming is provided.

Multifunctionality is than an intricate mix of private goods (commodity outputs) which serve to the growth of community and public goods (non-commodity outputs) which serve for the market and society. The wider and larger is the combination and the amount of those goods, the higher the level of rural sustainable development reached (Casini et al., 2004).

Because organic agriculture through its character meets the multifunctionality concept, it represents a certain platform or model of management which may represent a viable alternative to the conventional modernisation model. For this reason, organic agriculture became a stable part of EU and Czech agrarian policy which supported through the agri-environmental programmes. The principles arguments why organic agriculture should be supported are following:

- OA is one of the fastest growing agricultural branches in the Czech Republic
- OA is environmentally friendly thanks to its methods and emphasis on agro-biodiversity and its regard to the multi-functional role of countryside
- OA increases animal welfare beyond the framework of applicable laws
- OA is a solution for the excess food production due to its diversion from quantity to quality and market stability
- OA contributes to the expansion of the food market and it enables consumers a choice between organic and conventional products
- OA promotes economic and social development of marginalized rural areas
- OA enhances requirement on human labour and thus contributes to a job creation in
- OA thanks to a well-operation control and certification system significantly increases export opportunities of the domestic organic produce and food to the EU and other counties (MoA of the CR, 2004).

3.3.4 Comparison of organic and conventional production system

Conventional agriculture is an industrialized agricultural system which can be characterized by mechanization, monocultures, and the use of synthetic inputs such as chemical fertilizers and pesticides, with an emphasis on maximizing productivity and profitability (Eicher, 2003).

The general differences which distinguish conventional system from organic have been summarized in the following table.

Figure Chyba! Nenalezen zdroj odkazů.**: Major differences between conventional and organic agriculture**

	Conventional agriculture		Organic agriculture
1.	Emphasis on quantity	**1.**	Emphasis on quality
2.	Emphasis on profits	**2.**	Emphasis on biological diversity
3.	Highly specialized production	**3.**	Diversified production
4.	Alike and inflexible crop rotations	**4.**	Diverse and versatile crop rotations
5.	Utilization of synthetic fertilizers	**5.**	Utilization of organic fertilizers
6.	Utilization of pesticides	**6.**	The system itself prevents losses from pests, diseases and weeds

Source: Petr and Dlouhý, (1992).

From the above comparison we can conclude that conventional and organic agriculture represents two marginal agricultural management types. Despite of having some interconnection, they differ significantly in the way they fulfil principles of sustainable development. In order to make such judgement, it is useful to compare them with regard to the environmental, agro-ecological and social aspects on which basis one can predicate about sustainability of a system. For such a comparison, several indicators have been chosen:

1. Soil quality

A very serious global problem attributed to agriculture is the soil degradation. The excess use of agrochemicals and mechanisation in plant production results in erosion and

acidification of soils. We can find multiple examples in developing countries, where thousands hectares of agricultural land disappear every year due to improper management practices. The same problem is in the Czech Republic, where almost 40 % of land is endangered by soil erosion (Šarapatka and Urban, 2003).

Organic agriculture methods are more regardful to soil, because more organic materials and fertilizers is put back into the land and more diversified management techniques are used. Such approaches protect quality of soils and thus have a higher potential for sustaining soil fertility.

2. Water sources quality

The biggest polluter of waters is agriculture. A significant part of environmental pollution, including pesticides, chemical fertilizers and animal dejecta comes from this source. These matters are drifted out from fields by rain, get into water sources and influence negatively their quality. Since conventional agriculture uses these matters in a larger extend, it is a large contributor to this kind of pollution.

Organic agriculture on the other hand is not so risky in terms of water contamination. Because organic farmers do not burden the soil with mineral fertilizers, do not use synthetic pesticides or high concentrations of animals, the surroundings of organic farms have much lower pollution of underground and surface water. Organic farming also plays a significant role in flood prevention – sound soil with high infiltration ability retains much more water and thus reduces the risk of excessive floods (MoA, 2009).

3. Non-renewable resources and energy inputs

The conventional agriculture tries to maximize profits through the increasing use of inputs in form of irrigation water, fertilizers, pesticides and energies which are used for production of these fertilizers. The mentioned inputs usually come into the agro-ecosystem from outside and have a character of non-renewable resources. Non-renewable resources' quantities are limited and will be depleted in a certain time horizon.

Organic agriculture strives for minimisation of these inputs and this is why organic enterprises show to have lower energy consumption than conventional (Šarapatka and Urban, 2003). From this respect organic agriculture appears to be a better alternative for conservation of non-renewable resources.

4. Biological diversity

The common practice of conventional agriculture is monocultures. Growing a single crop on wide areas presupposes meadows, bushes and single trees which surround small fields to be eradicated. With the loss greenery it comes to irrevocable loss natural habitats of animal and plant species and thus to their gradual extinction.

Organic agricultures practices are in a contrary to conventional. Through the use of multifarious sowing regimes, planting of mixed crops and well-considered landscape management, an increased number of animals and plants occur on organic fields and their surrounding. The recent researches show that on organic plots there is by 85 percent higher number of plant species, by 25 percent more earthworms and by 5 percent more birds than on conventional plots (Alföldi, 2006). Organic agriculture also plays a significant role in the maintenance of genetic resources - it is one the means for planting or local regional strains and breeding of old utility breeds (MoA, 2009).

5. Employment and maintenance of settlement stability

With the development of intensive agricultural systems and specialization, it comes to a dramatic decrease in numbers of organic enterprises, mainly in developing countries. The trend is however apparent in almost all countries of the world. The more mechanisation and chemical inputs are used in agriculture, the fewer workers are needed. This results in a growing unemployment of farmers who leave the country and move to cities. Growing mechanisation and specialisation, which is the feature of conventional agriculture, thus have a negative impact on rural areas which are left behind in development. This finally results in growing regional disparities and finally it may contribute to the “big city problems”, such as criminality, poverty or sickness.

Since organic agriculture is characterized by a higher need of human labour, it may represent an alternative path to avoid these problems. Because organic agriculture creates more working places per an organic holding or per one hectare of agricultural land (Václavík, 2008), it positively influences employment and the settlement stability or rural areas. People living in a country help to maintain the landscape, build the infrastructure and social networks what contributes to the rural development. It is also necessary to realize that keeping people in a country is crucial to avoid problems of big cities and primarily, for sustaining sufficient food production for the growing word’s population.

6. Economic efficiency from the long-term perspective

Many consumers buy conventional foodstuffs because they are cheaper than organic. However, if the true cost of conventional food was calculated and all hidden costs (externality costs) were included, the price of conventional food would be many times higher. The price of food produced at large conventional farms and monocultures does not reflect the true costs which burden the whole society but which producers do not pay – the cost of energies and water dumped over during production, the cost of wasted fuel during transportation of food at large distances, the cost of greenhouse emissions from animal waste and car transport, the cost of losses on biodiversity or the cost of treatment for obese and diseased people. These costs in their final result must be paid by citizens from their taxes. Society and states may avoid such negative externalities by promoting local production and local markets. If food is produced at small family farms and consumers start to eat locally, society can prevent from many of these troubles.

On the basis of the previous discussion we can conclude that conventional agriculture appears to be a non-sustainable system and organic agriculture on the other hand as a platform which could be applied to replace it. The question whether organic agriculture should be just a component to conventional system or as a full-value alternative for the solution of problems of current agriculture (e.g. environmental problems, overproduction, unemployment or negative externalities) is a subject of discussion of many scientists and it is out of the focus of this paper.

This paper is on the contrary based on assumption that organic agriculture represents an equivalent, fully-functional model which is sustainable from the long-term perspective and therefore it should be effectively supported by the agricultural policy tools. By the effective support is meant a support of all system functions – both production and non-production.

At the same time it is supposed that the organic system may be fully functional only when its potential conventionalisation will be avoided. This means, that the organic agriculture must not reproduce the conventional agriculture, to grow into its intensive form and to bear its negative features or practices.

3.4 Organic food and its quality

3.4.1 Organic products and organic foodstuffs definition

Definitions and rules for organic products and foodstuffs are embedded in the Czech and the European legislation, i.e. in the Act On organic farming No. 242/2000 Coll. and the Council Regulation No. 834/20007 on production and labelling organic products.

Organic product can be defined as a raw material of crop or animal origin which is obtained from organic farming and intended, on the basis of certification, for production of organic foodstuffs. However, breeding animals and materials for non-food utilization, such as cotton or roping flax can be also certified as organic products. As other organic product, also organic feed, seed and planting material are regarded. Other organic products are considered as a sub-group of organic products because they fulfil the requirements placed on organic products.

By an organic foodstuff, it is than meant a foodstuff produced under specific conditions listed in the Act on organic farming no. 242/2000 Coll. and which fulfils special requirements on quality and health unobjectionability given by other legal regulations (Act No. 110/1997 Coll., Decree No. 304/2004 Coll., Decree No. 305/2004 Coll.).

3.4.2 Quality of organic foodstuffs

It is necessary to emphasize that a priority of organic farming is not a quantity of production, but its quality. Quality of organic produce is determined by the quality of the whole agricultural system and the production technology, i.e. through the means the crops were planted, animals bred and products processed, stored and distributed. These processes are subject to a strict legal regulation and even stricter inspections. The controlled way of production thus gives expectations for better quality produce in many aspects.

The quality of organic products is not legally defined, but in general, products of organic farming released into the Czech market have to fulfil requirements of the Act no. 110/1997 Coll., on foodstuffs and tobacco products. The conventional products are subject to the same regulation meaning that the same legal requirements are laid both on conventional and organic products.

3.4.3 Technological quality of organic products

In current scientific practice the quality of food is determined according to mechanical, chemical and microbiological analysis on the presence of various chemical substances. Also in this respect, organic products have to reach the same limits as conventional products for what reason we cannot declare them as of a higher quality. However, a range of European scientific studies have recently been carried out to compare technological quality parameters of organic and conventional products.

One of the most extensive ones was coordinated by Mr. Carl Leifert from the University of Newcastle in Great Britain within the sixth framework project QLIF (Quality of Low Input Food) http://www.qlif.org/research/index.html). The study indicated systematic differences in concentrations of minerals, essential amino acids, vitamins, secondary metabolites and mycotoxins in crops produced in different production systems (Schmidt, 2006).

3.4.3.1 Positive aspects of organic products

Nutritional value

Heretofore results of the study reported that a variety of organically grown vegetables and fruits show a higher average content of biologically active compounds, such as vitamins with antioxidative activity (ascorbic acid – C vitamin, tocophelrols/tocotrienols – E vitamin, some falconoids or arytenoids – beta-carotene). Significantly higher levels of the nutritionally desirable unsaturated fatty acids (such as the main omega-3 fatty acid) were found in organically produced milk and meat. In a number of monitored organic foodstuffs higher levels of health beneficial minerals (such as zinc or ferrum) we found.

Technological quality

Another positive aspect exemplified by several studies was the durability of organic products against mechanical damage and their better storage ability. Organic products generally show lower loses during storage period, apparently because of the lower content of water compared to conventional products produced with the help of mineral fertilizers.

Sensory quality

The significant parameter for organic products' evaluation is their sensory quality. Organic products are classified into quality classes according to their outer characters such as size, shape, weight, colour and outer shape faultlessness. The classification into quality class afterwards determines product's price. At certain circumstances, outward appearance of organically produced vegetable can be worse than at conventional products. For example, potatoes from organic system are generally smaller, with firmer skin and more compact pulp. However, these characteristics improve durability of organic products against mechanical damage (Hašlová J., 2008).

Chemical safety

Discussions directed on chemical safety of organic products are very intensive and often end up with the statement of a lack of quality experimental data. The absence of pesticide residues is nevertheless a great convenience of organic products. Despite the fact that findings of residues in conventional products ordinarily do not exceed 4%, and thus do not represent serious risk, the question of cumulative effects on human health from the long-term perspective remains open (Hašlová, J., 2008). From this respect, organic products represent an advantage over conventional products because they do not contain chemical pesticides or herbicides (unless they were unintentionally imported into the product). Organic foodstuffs also do not contain harmful additives which may cause very serious health problems, such as cardiac diseases, osteoporosis, megrim or hyperactivity. Organic products also do not contain genetically modified organism (GMO) whose long-term effects on human health also were not proved (Tichá, 2008).

3.4.3.2 Negatives and ambiguities of organic products

As a negative aspect of organic products it is possible to mention their higher price compared to conventional products as well as the worse storability of completed products due to the absence of chemical conserving substances (Tichá, 2008). Other negative sides may be viewed in their possible contents of residues (heavy metals, dioxins) or mycotoxins in food processing raw materials or in a risk of possible bacterial contamination of some products (Rambialkowska, 2006).

3.4.4 Symbolic quality of organic products

The quality of produce within the organic system is understood differently than in a conventional system and it has a broader meaning than a single assessment of the presence of chemical substances. From the sociological perspective, it is the symbolical quality what gives value to organic products.

The symbolic quality we can understood as the way consumers and wider public perceive organic products or the reason standing behind of their buying motivation. In economic terms, the symbolical quality can be compared to the valued added to the product because it is the morally, environmentally and socially considerate way of production which creates both symbolic quality and additional value of organic commodities.

Consumers who purchase organic foods are aware of the fact that these foods were produced through ways regardful to the environment, farm animals and people. They become “organic consumers” mainly because it corresponds with their living style or their concern over the environmental protection. Others start to eat organic because of some health limits (allergies etc.); try to improve their nutrition and avoid residues of agrochemicals and conserving agents in food. Many consumers are also aware of the fact that organic products represent an alternative to the pursuit of maximal profits and yields, and on the other hand, that they may contribute to the improvement of living conditions in rural areas and to the landscape management. Last but not at least, it is also the absence of genetically modified organisms (GMOs) what pushes European consumers into the purchase of organic foodstuffs during last years.

3.5 Current state of OA in world countries and Europe

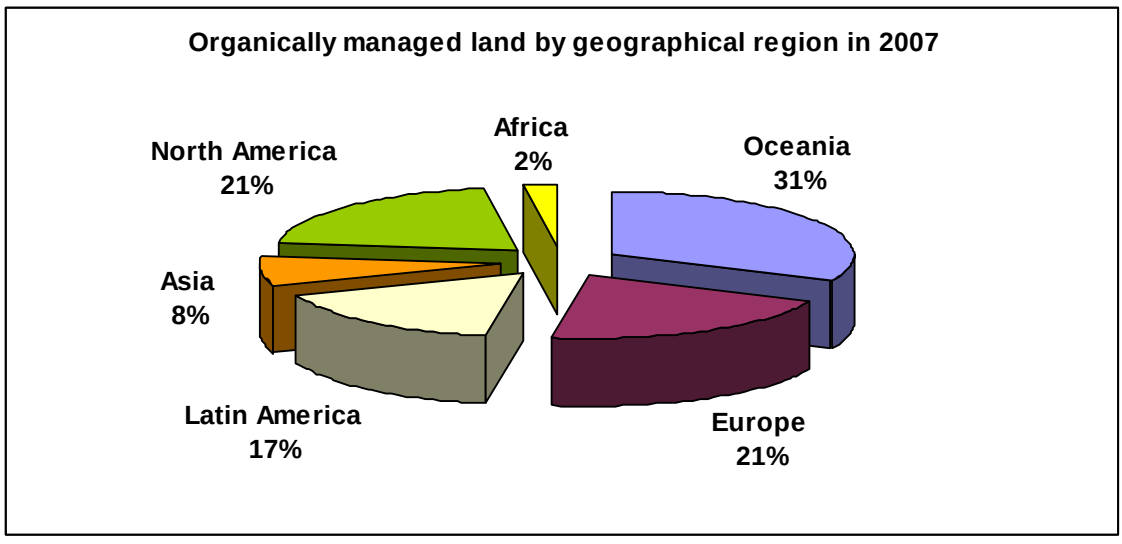
3.5.1 State of organic agriculture in world countries

Organic agriculture is developing rapidly in more than 140 countries of the world. Its share of agricultural land and farms continues to grow in many countries. Furthermore, it can be assumed that uncertified organic farming is practiced in even more countries.

According to the 2009 survey on organic farming worldwide, taken by the Foundation Ecology & Agriculture SOEL and the Research Institute of Organic Agriculture FiBL, as at the end of 2007 about 32,2 million hectares of agricultural land were managed organically by more than 1,2 million organic producers. This represents an increase of 1,5 million hectares compared to the year 2006.

In total, more than one third of organic land is in Oceania (37,6 percent), followed by Europe (24,1 percent) and Latin America (19,9 percent). To the countries with the greatest organic areas belong Australia (12,2 million hectares), Argentina (2,8 million hectares), Brazil (1,8 million ha), the USA (1,6 million hectares) and China with 1,5 million hectares (Organic-World.net, 2009).

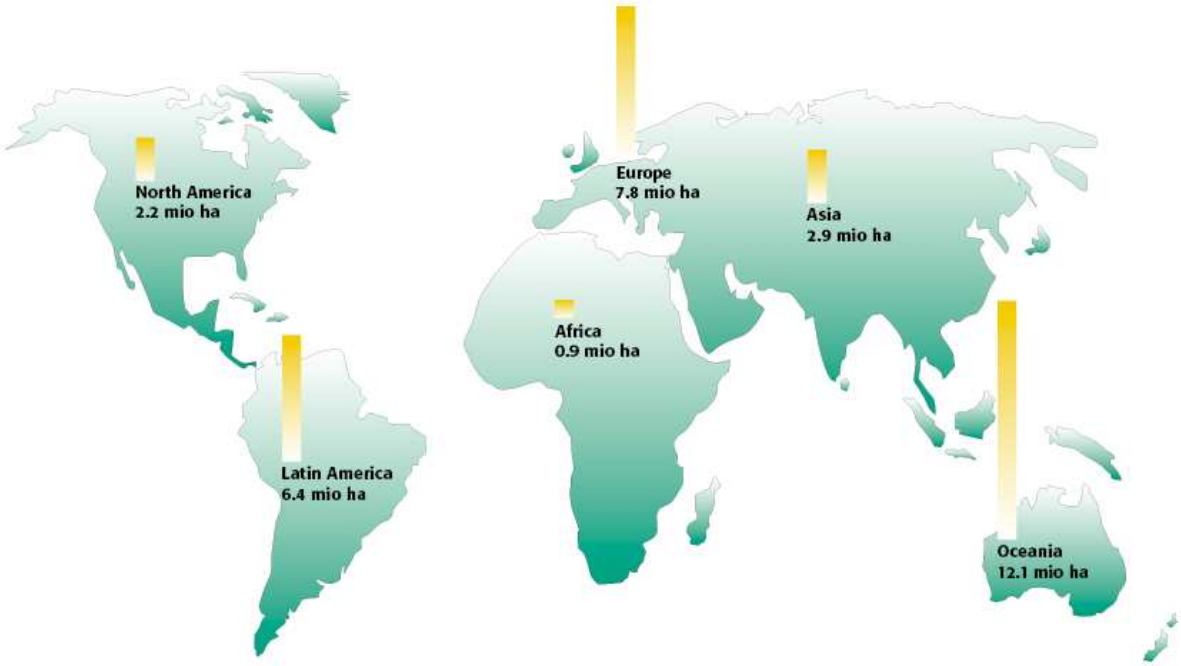
Figure 2: Organically managed land by geographical region in 2007



Source: Willer, 2009.

In the year 2007, there has been major growth of organic land in Africa and Europe - both continents have half a million hectares more each compared to previous year. Decreases were, however noted in China, Chile and Australia (Yussefi and Willer, 2008).

Figure 3: Area of organic land worldwide in 2007



Source: Willer, 2009.

The global market for organic products reached a value of over 46 billion US Dollars in 2007 and is increasing by over 5 billion US Dollars a year, according to Organic Monitor. Consumers demand for organic products is concentrated in North America and Europe; these two regions comprise 97 % of global revenues. Asia, Latin America and Europe are also important producers and exporters of organic food. The global organic food industry has been experiencing acute supply shortages since 2008. Exceptionally high growth rates have led supply to tighten in almost every sector of organic food industry, including fruits, vegetables, beverages, cereals, grains, seeds, herbs and spices (Yussefi and Willer, 2008).

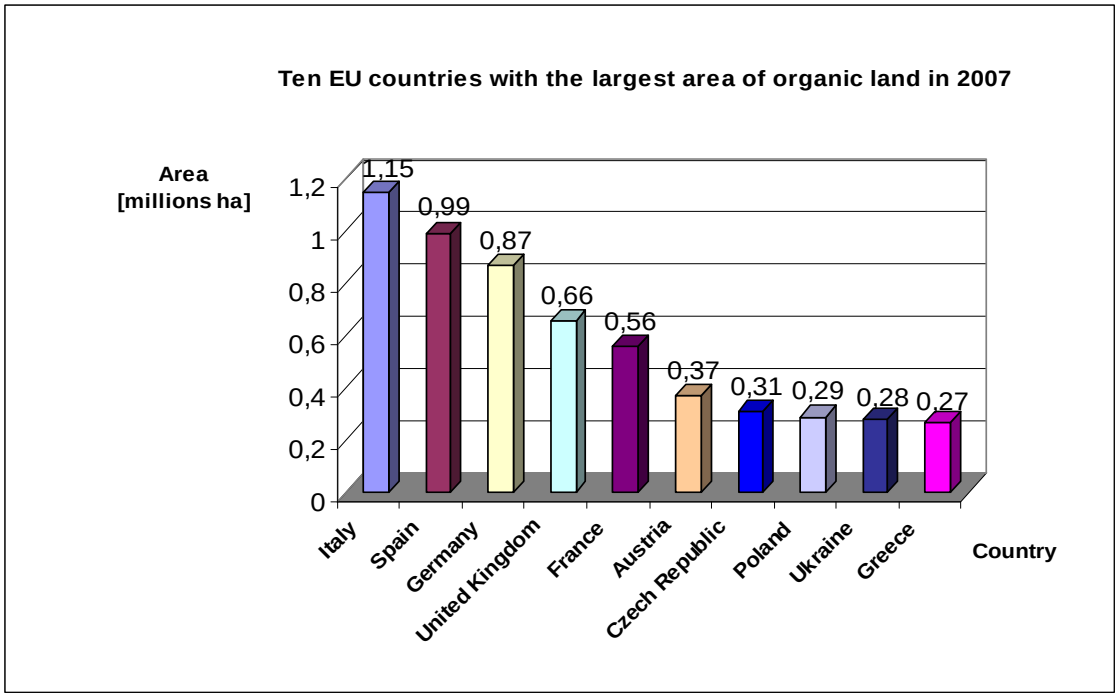
3.5.2 State of organic agriculture in Europe

Since the beginning of the 1990's, organic farming has rapidly developed in almost all European countries. As of end of 2006, 7,4 million hectares in Europe (1,6 % of the total agricultural area) were managed organically by almost 200 000 farms. In the European Union (EU-27), almost 180 000 organic farms managed 6,8 million hectares organically, constituting four percent of the agricultural area.

Compared to the year 2005, the organic land increased by 526 562 hectares (7,7 percent increase). Countries with the largest organic area are Italy, Spain and Germany. Countries with the highest shares of organic land are Lichtenstein, Austria and Switzerland

The European market is estimated to be approximately 14,3 billion Euros (2006). The biggest market for organic products is Germany with an annual turnover of 3,9 billion Euros, followed by Italy (2,4 billion Euros) and by France (2,2 billion Euros). The highest market share of organic products of the total market is in Switzerland with 4,5 percent, and the highest per capita consumption with more than 100 Euros spent on organic food per year and citizen (Yussefi and Willer, 2008).

Figure 3: Ten EU countries with the largest area of organic land in 2007



Source: Organic-Europe, 2009.

3.6 Organic agriculture in the Czech Republic

3.6.1 The legal regulation, inspection and certification system

The main legislation norm regulating organic agriculture in the CR is the Act No. 242/2000 Coll., On Organic Agriculture as amended by the Act No. 553/2008 Coll., and interrelated ministerial regulations. The full statutory text was issued as an Act No. 30/2006 at the Collection of Laws. Organic farming is further regulated by governmental decrees, such as 203/2004 Coll., 241/2004 Coll. or 542/2004 Coll. (Tichá, 2008).

The act No. 242/2000 Coll. establishes conditions of management in organic farming and the conditions for production of organic foodstuffs. It further regulates the system of certification and labelling of organic products and foodstuffs, as well as the performance of inspections on organic farming. The purpose of the amendment by the Act No. 553/2008 Coll. was to delete all of the regulations that are duplicated in the European legislation (Council Directive (ECC) 2092/91 on Organic Farming). This led to the simplification of the legislation on organic farming [Organic Europe, 2009].

Some provisions of the Act on organic agriculture are implemented by Decree no. 16/2006 Coll., which came to force on 1st February 2006. This decree regulates some other conditions of management in organic (e.g. livestock breeding, rabbit breeding, fish breeding etc.). Organic management in the CR is also regulated by the special regulations, to which belongs for example Act No. 110/1997 Coll., On foodstuffs and organic products or the Act No. or the Act No. 77/2006 Coll., On protection against cruelty to animals, as last amended (Tichá, 2008).

Organic farming in the EU has been has been since 1991 governed by the Council Regulation (ECC) No. 2092/91, which sets out the rules for production, processing, certification, control and labeling of organic products as “organic”. Validity of this document ended up as at 31.12.2008 (Tichá, 2008).

With the growth of organic sector, a large number of national governmental and private standards, labels and certification bodies started to appear in the EU countries which raised concern about risk of unfair competition and barriers to the free trade with organic products within the EU. For this reason, legal framework on organic production was reviewed and resulted in the adoption of the new Council Regulation on organic production and labeling, (EC) No. 834/2007 of 28 June 2007. Its implementing rules are based in the Commission Regulation (EC) No. 889/2008 of 5 September 2008 (Jespersen, 2007).

The new legislation gave the rise of the new graphical logo for organic products. At present, organic farming operators can opt to place the EU logo on their produce but from July 1, 2010 it will become compulsory. National and private logos for labeling organic product may continue to be used. Another compulsory rule is to indicate every organic product by the code inspection organisation which carried out the certification. Only products with at least 95% organic ingredients may be labeled and named as “organic”.

Figure 4: European and Czech Logo for organic products and foodstuffs

Source: KEZ, o.p.s., 2009.

Organic farmers, processors and importers must satisfy strict regulations if they want to use the EU or national organic logo. To ensure they comply with these regulations, an equally strict inspection system has to be in place. These inspections are performed at every stage in organic farming supply chain in order to allow consumers a qualified choice of organic products (The European Commission, 2009).

The oldest body providing inspections and certification services has been since 1999 the Organic Farming Control (KEZ), o.p.s. The organisation headquartered in Chrudim arose from the incentive of organic farmers who wanted to export their produce abroad but poor inspections of that time did not allow them to do so. The organisation met its purpose in 2000 when the European Commission added the CR on list of the Third Countries allowing Czech producers to export into the EU countries.

In order to bring competitive environment onto the inspection field, other two organisations were appointed to carry out certification. In 2005, Czech-German inspection organisation ABCERT GmbH of Brno was nominated. It commenced activities on 1 January 2006. From the middle of 2006 a new certification organisation Biokont CZ, Ltd., also located in Brno, started inspection and certification activities as well as education, research and development in organic farming (Valeška, 2007).

3.6.2 State support and policy initiatives

The recent development in organic farming was related to the renewal of state support in 1998. In the period 1998-2003 state support for organic farmers was provided on the basis of a government order, supporting the non-production functions of agriculture. From 2004 to 2006 the conditions for state support were governed by the "Horizontal Rural Development Plan" (HRDP) which included, besides other agri-environmental measures, giving farmers an opportunity to use advantageous point allowances when applying for support from the Operational Programme Agriculture.

Since 2007, support for organic farming has been based on the Rural Development Programme 2007 – 2013 (RDP), which replaced HRDP and support from the Operational Programme Rural Development and Multifunctional Agriculture. Based on the AEM/RDP, organic farming is supported under Government Order No. 79/2007 Coll. (Valeška, 2008).

Figure 5: The rates of financial support in period 1998-2008 (in CZK/ha)

Land use	1998	1999-2000	2001-2003	2004-2006	2007	2008	Growth V/IV	Growth VI/V	Growth VI/I
	I	II	III	IV	V	VI	%	%	%
Arable land		**2 130**	**2 000**	**3 520**	**4 266**	**4 086**	**21**		**85**
Permanent grassland		**1 065**	**1 000**	**1 100**	**1 954**	**1 872**	**78**		**-15**
Permanent crops	**2 200**	**3 195**	**3 500**	**12 235**	**23 369**	**22 383**	**91**	**-4**	**917**
Vegetables									
Special plants		**2 130**	**2 000**	**11 050**	**15 524**	**14 869**	**40**		**575**

Source: The MoA, 2008. (incl. own computations)

3.6.2.1 The Rural Development Programme

Support for organic farmers under the Rural Development Programme 2007-2013 is implemented within Axis II – where a support title "Organic farming" is one of the Agri-environmental measures. The purpose of the Agri-environmental measures implementation is to remedy harms incurred on the landscape and the environment owing to unsuitable

agricultural management during collectivisation era during past fifty years. Main aims of the agri-environmental measures are:

- preventing of fast off-take of the ground water from the landscape,
- lowering soil erosion,
- enhancing ecological stability of the landscape,
- enhancing biological diversity on the farmed land.

Support payments for the organic farmers have form of contributions on one hectare of agricultural land and are paid out annually for the duration of farmers' commitment to organic farming, i.e. for the five years period. The contributions towards the support payments divided between the European Union and the CR (80 percent and 20 percent). The payments are assigned in Euro and paid out by the State Agricultural Intervention Fund in Czech Crowns.

The support payments for the organic agriculture in years 2007 and 2008 were defined according to a different land use as follows:

- Arable land: EUR 155/ha (in 2007: 4266 CZK/ha; in 2008: 4086 CZK/ha)
- Permanent grassland: EUR 71/ha (in 2007: 1954 CZK/ha; in 2008: 1872 CZK/ha)
- Permanent crops: EUR 849/ha (in 2007: 23368 CZK/ha; in 2008: 22383 CZK/ha)
- Vegetables and special herbs: EUR 564/ha (in 2007: 15524 CZK/ha; in 2008: 14869 CZK/ha)

The rate amount in CZK is calculated at the EUR/CZK exchange rate that is determined every year. The exchange rate in 2007 was CZK 27,525 and in 2008 was set at 26,364 CZK which means the reduction of individual payments by 4% compared to 2007. The same amount of payments will be disbursed to organic farmers who have their land in so called transition period. A new source of payments which serves for financing rural development and agricultural programmes is the European Agricultural Fund for Rural Development (EAFRD) (Valeška, 2008).

Currently, the support payments as they are defined within the RDP, are understood as a compensation for economic losses which organic farmers incur due to a different farm management. Within this programme document, it is recognized that organic farmers generally reach lower yields of crops and a lower efficiency of livestock compared to conventional farms. This mainly due to the elimination of the intensification factors, a different structure of planted crops and a different livestock breeding system. There are also considered higher labour costs (there's a higher portion of hand work in organic

system) and higher costs on the work organisation (an increased portion of agro-technological actions aimed at weed, disease and pest regulation) (RDP, 2007). This recognition is subsequently reflected into the design of payment rates based on different crop types – where the amount of manual work and incurred loses as higher, the higher rate is acknowledged to the farmer.

The support payments, however, should be viewed from a different perspective than just compensation for economic losses. The support payments also represent recognition of the significance of the organic farming in general. From this perspective, farmers are remunerated for the benefits they bring to the society, in form of quality and healthy foodstuffs, clean environment, beautiful landscapes and the role they play in the development of rural areas. Last but not at least the least farmers must be rewarded for the good values they pursue and which European society recognizes. For this reason the support programmes for organic farmers should not be just incorporated just among the Agri-environmental Programmes, whose main aim is the landscape and environmental protection. The organic agriculture on the other hand must be recognized in its full importance for the society and for this reason; its primary mission of production of healthy foodstuffs should be reflected into the support payment schemes. If the organic agriculture is to serve for the development of rural areas and local economy, it is also extremely important to ensure that funds designated for organic farming ignition really go into hands of organic farmers and that especially the small-scale farmers have an access to the financial support.

3.6.2.2 The Action Plan for the Development of Organic Farming

The necessity to elaborate the Action Plan (AP) arose from the conclusions of the meeting of the Council of Ministers of Agriculture of the EU which was held on 19 June 2001. These conclusions considered organic farming as a path towards sustainable growth and therefore asked the Member States to prepare own action plans to support organic farming. The preparation of the Action Plan was also a response to a reform of the Common Agricultural Policy stressing the quality of production and environmental protection as the main priorities.

After a through analysis of the state of organic sector, the MoA of the CR came to a conclusion that some areas of organic farming had not been sufficiently developed. These areas included for instance, research and education of farmers, domestic market with organic products or the consumers' informedness about organic farming. For all above

reasons, the MoA of the CR came up to the elaboration of the Action Plan of the CR for the Development of Organic Farming by 2010 which was finally adopted on March 17, 2004.

This strategic document identifies major areas whose support is required to ensure the ongoing development of the organic sector. The AP sets itself an objective to achieve by 2010 approximately 10 percent share of organic farming in the total agricultural land. Its main goals among other include:

- to enhance the position of organic farming in the Czech Republic,
- to increase the positive influence of organic farming on nature and landscape,
- to improve living conditions and welfare of animals kept at organic farms,
- to increase the viability of organic farms and to promote viable ones,
- to increase the competitiveness of Czech agriculture in the EU,
- to increase public confidence in organic farmers,
- to enhance positive perception of the quality of organic food by consumers,
- to expand the market with organic products and to increase the effectiveness of production and processing of organic products,
- to improve specialized consulting, education and research in the organic farming sector.

For the realization of the selected goals, a special interdepartmental group, consisted of deputies of the aggrieved ministries (the MoA, the MoIaT, the MoEYaS, and the MoE), deputies of the regions and ad hoc expert groups, was created to work on solutions of the problem areas (priorities).

The main priorities of the Action Plan comprehended the following: 1) strengthening the relation of the OA towards animal welfare and the environmental protection, 2) strengthening consumers' confidence in organic products and reinforcement of their promotion, 3) stimulating processing and marketing, 4) assuring favourable conditions for business activities for the farmers and enhancing economic viability of organic enterprises, 5) enhancing research, education and advisory and 6) creation of political tools which would give support to OA (e.g. in the area of drawing support from the EU structural funds).

For the reinforcement of the above priorities, many key steps had been done. Among other important steps, the MoA started systematically to enhance promotion of organic products (lately, a promotional project for the period 2007-2009 was created to increase consumers awareness), it set up the Bioinstutut to cover in activities related to research,

education and advisory and appointed a special working group to look at the issues of the animal welfare and the environmental protection.

According to the short-term evaluation of the AP in 2007, there however remained many week points impeding its successful realisation. The problem of processing, sales and marketing was so far evaluated as the weakest point of the AP. The processing sector had not been successfully developed and the promotion of producers' association was not sufficiently promoted either.

Urban (2005) in his report on the fulfilment of the AP sees as the main shortcoming that there were not allocated any financial resources from the state budget on promoting of selected tasks, and it is only in the competence particular actors to raise funds for their activities. He also claims that co-operation among ministry departments and ministries and regions had been very low. There was missing mainly the co-operation between the Ministry of Health (prevention programmes, utilisation of organic food in healthy diet) and qualitatively a better co-operation with the Ministry of Industry and Trade which is in charge of the customers' protection.

3.6.2.3 The Organic Farming and Organic Foods Programme

On May 10, 2007 the Government Council for sustainable Development approved Organic Farming and Organic Foods Program as part of Sustainable Production and Consumption Program. The Program comprises concrete measures which detail the tasks of the Action Plan and it is therefore one of the specific mechanisms for its implementation. The Program's main goals within 2010 time frame are:

- to achieve 10 percent share of organic farming in the total agricultural land area,
- to strengthen awareness of organic farming so that at least 80 percent of consumers knew organic principles, organic logo and major differences between organic and conventional products,
- to enhance development of the domestic market with organic products so that:
- there was a one percent share of organic food consumption on a total food consumption,
- there was a 60 percent share of domestic organic products on a total food consumption,
- at least 25 percent of Czech consumers bought organic food regularly, i.e. once a week (Václavík, 2008).

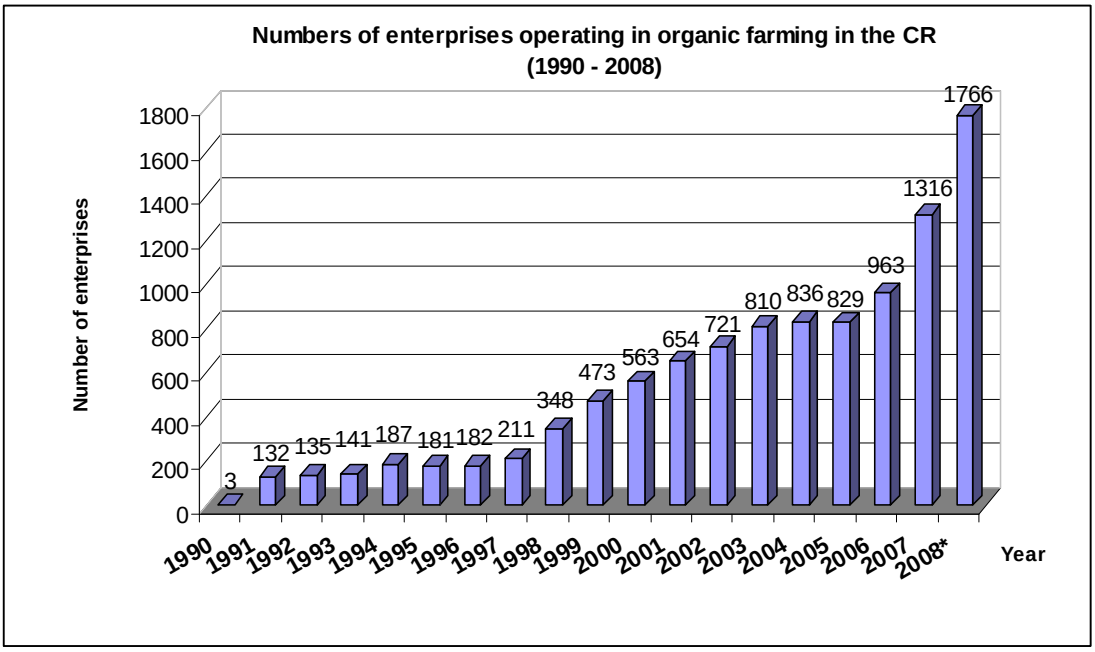
3.6.3 Current state of organic farming in the Czech Republic

Organic farming in the Czech Republic experiences a continuous growth since the beginning of 1990's. Except the year 2005 when there was a slight drop in acreage of organic land caused by reverting or some farms from organic farming, there was regular increase in organically farmed areas and in number of organic farmers every year since 1998 when it came to the renewal of state support.

As at 31st December 2008, there was 341 642 hectares of land registered within organic farming system. This represents approximately 8,04 percent of the total agricultural land area and 9,2 percent increase compared to 31.12. 2007. The number of organic farmers increased in 2008 by 628; as per 31st December 2008 there was a total of 1946 organic farms in the Czech Republic. If we consider that ten years ago, there was about 350 farmers and the share of organically farmed land was about one percent, it is obvious that organic sector came through a very dynamic development.

This upward trend, as depicted on the graph, can be attributed to an increase and stabilization of the state support for organic farming under the Rural Development Programme (RDP), the rising demand for organic raw materials from organic food producers and foreign consumers and last but not at least by the growing consumer demand for domestic organic products and organic food (Valeška, 2007).

Figure 6: Numbers of organic farming enterprises in the CR in years 1990 – 2008



Source: The Ministry of Agriculture, 2007. *Data as per 30.06.2008

3.6.3.1 Development of organic farming structure

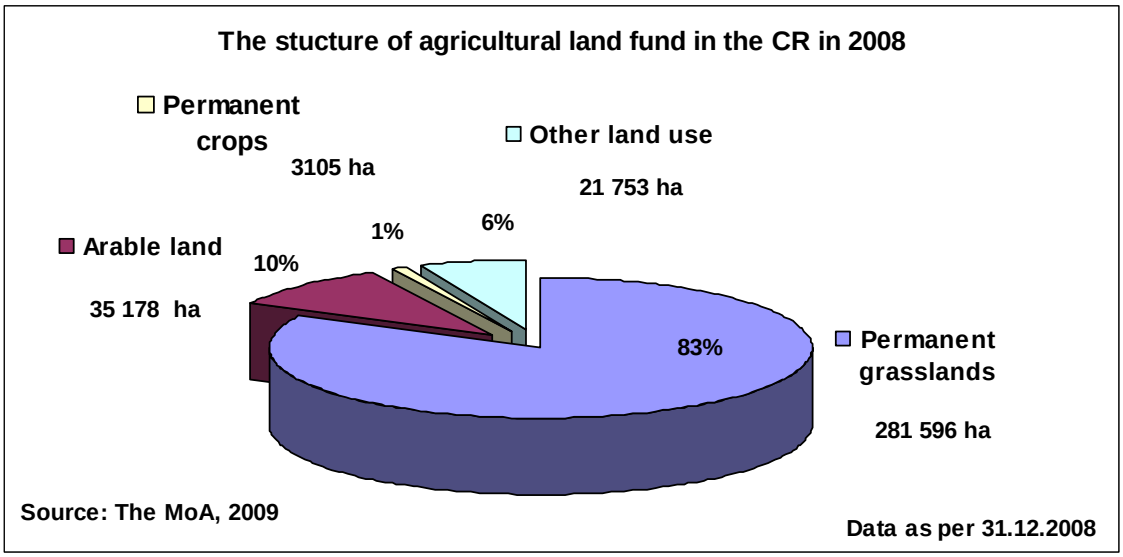
The key feature of organic farming in the Czech Republic is farming on permanent grasslands in mountainous and foothill areas. In the year 2008 permanent grassland areas amounted to 281 596 hectares and reached 83 percent share of the total organic land. Farming on permanent grasslands is mainly focused on landscape preservation and extensive cattle breeding without market milk production.

A strong weak point with regard to production of food is a low acreage of arable land. However, in 2008, it was the first time in the history of organic farming when arable land was growing. In 2008 these areas increased by 5 673 hectares (compared to 31.12. 2007) reached the total of 35 178 hectares (more than 10 percent of the total organic acreage). This increase was likely to continue in subsequent years with the rising demand for organic quality cash crops and in particular due to an increased need for organic feed and seeds.

There was also a relatively high increase in the area of permanent crops, in particular orchards and vineyards. The former reached 2 764 hectares and the latter 341 hectares. This increase was the most possibly determined by a higher support for this production, together with the improved export opportunities and increased demand for organic wine on the European market (Valeška, 2007).

On the following graph the dominating position of grasslands. It is necessary to realize that arable land is mainly used for production of cereals which serve both as feeds for animals and as a raw material for production of foodstuffs. The low acreage of arable land thus predetermines the low production of organic food and animals utilized for production of meat, milk, eggs and other products.

Figure 7: The structure of agricultural land fund in the Czech Republic in 2008



3.6.3.2 The size of organic enterprises

An average size of organic enterprises shows a decreasing trend. Since the year 2006 an average size of organic farms decreased by more than 100 ha to less than 190 hectares. In the Czech Republic, farms with the land area between 10 and 50 ha predominate (345 farms, 26 percent of farms), but they administer only 3 % of the total organic land. The second largest group represents enterprises between 100 and 500 ha (335 farms, 25 % of farms) administering 26 percent of organic land (as per 31.12.2007).

Another 30 percent of land area is administered by enterprises sized between 500 and 1000 ha and enterprises up to 2,000 ha. Almost 60 percent of land is farmed by large farms with prevailing permanent grassland area. Currently, the land area of the biggest organic farm exceeds 2,660 hectares.

Smaller farms (under 50 ha) are family-owned farms with mixed production and those with a varied mix of farm animals (cattle, sheep, goats, poultry, horses). In 2008, a significant year-on-year increase (by 76 enterprises) was recorded in case of small organic farms with specialized production on arable land (e.g. vegetables, fruit, herbs). Organic farms over 500 ha are mostly represented by large agricultural cooperatives, joint-stock companies or limited liability companies focusing primarily on raising beef cattle and exceptionally also dairy cattle.

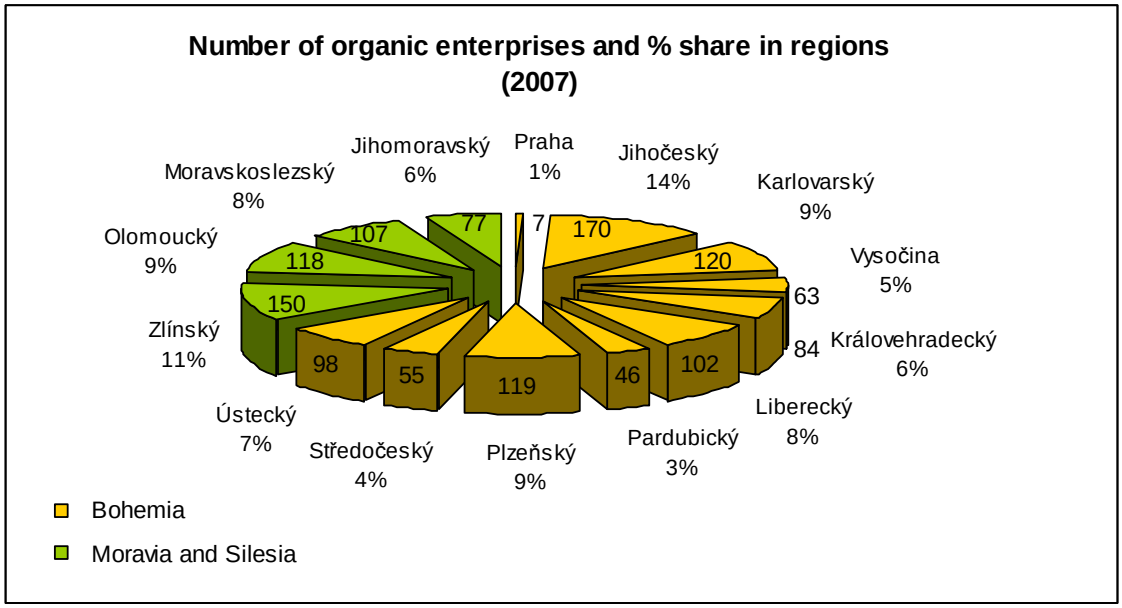
The average size of organic farms in the Czech Republic is significantly larger than in other EU Member States where organic farms are represented mainly by traditional family-owned farms with an average size under several tens of hectares. The average size of the organic holding in the CR is 305 hectares whereas the area of some Western European states (such as Belgium, Denmark, Germany, Ireland, France etc.) varies from 40 to 50 hectares per a holding (Eurostat, 2007). This difference stems from historical context, in particular nationalization of land under the Communist regime, collectivization and subsequent loss of land (Valeška, 2007).

3.6.3.3 Location of organic farms by regions

By looking at the number of organic enterprises and their distribution by region (see Figure 4), the main feature is the unbalanced distribution within the Czech Republic. Mountainous and foothill regions traditionally have the greatest representation within organic farming. Extensive farming on permanent grasslands prevails.

More than a third of organic farmers are in Moravia, concentrated most strongly in the Zlín and Olomouc regions, and more specifically in the Jeseníky Mountains and the White Carpathians. In Bohemia, organic farming is most developed in the southwest, particularly in South Bohemia (Jihočeský), Karlovy Vary (Karlovarský) and Pilsen (Plzeňský) region. In contrast there are few organic farms in the Central Bohemia (Středočeský), Pardubice and Vysočina regions, which are characterized by arable production (Dytrtová, 2007).

Figure 8: Number of organic enterprises and their percentage share in regions (2007)



Source: The MoA, 2007.

With regards to the organically farmed area, the Karlovy Vary (Karlovarský) Region with 54,5 thousand hectares, the South Bohemian (Jihočeský) with 47,5 thousand hectares and the Moravian-Silesian (Moravskoslezský) Region with 38,4 thousand hectares occupy the first tree ranks. The smallest acreage on the other hand may be found in Vysočina, Pardubice, Central Bohemia and in Prague Region (Valeška, 2007).

If we consider the share of organically farmed land in the total agricultural land in particular regions, the highest organic land share has Karlovarský Region (42 percent), Liberecký Region (18 percent), Zlínský Region (15 percent), Moravian-Silesian (13,8 percent) and Ústecký Region (12,5%). In production areas is the representation of organic agriculture ranges between 1 or 2 percent (Pardubický, Jihomoravský, Vysočina Regions).

The given spatial distribution of organic enterprises implies that the most organic holdings are concentrated in less-favoured and non-production whereas production areas are rather exploited by more intensive, conventional methods. With regard to functions of

organic agriculture it is possible to conclude that organic agriculture is currently focusing rather on maintaining nature and landscape than on production of foodstuffs.

An influence on the regional distribution of organic enterprises has also a presence the PRO-BIO association regional centres which work to develop organic farming in these areas and provide farmers with information, advisory, promotion and other services.

3.6.4 Organic food production and processing

In the first half or 2008 there were 375 organic producers what represents and increase by 122 enterprises (more than 48 percent) compared to end of the year 2007. The majority of these enterprises were constituted by conventional producers who due to an insufficient supply of domestic raw materials, had to import them from abroad. Also outlets of retail chains, which bake/finish organic baked food or packed organic meat (mostly beef), constitute a large part or organic food producers.

Figure 9: Numbers of entrepreneurs registered under Act No. 242/2000 Coll., on organic farming

Enterprises by business type	2006	2007
Organic enterprises, applicants for registration	963	1318
Organic food producers (including distribution)	152	253
Persons introducing organic products to the market	57	91
Importers of organic food from third-world countries	13	20
Producers of feed and seed	10	16
Contract processing (independently registered	4	2
Organic bee keepers	1	6
Total number of enterprises	**1 200**	**1706**

Source: The Ministry of Agriculture, 2008.

The domestic organic production remains limited. There are missing mainly basic organic products such as fruit, vegetables, milk and milk products, eggs, poultry meat, pork meat and meat products. According to the MoA (2007), the low supply of organic foodstuffs of the animal origin is primarily determined by the unfavourable situation in area of organic cattle breeding. With regard to a low capacity of particular farms, conventional slaughters are not willing to accept animals from organic breeds; eventually they are not able to apply their meat as certified organic product. Products from organic breeds are therefore very

often realized as conventional, or the organic animals are sold abroad to in order to realize a better redemption prices.

Another reason or a low supply in organic products is according to Rozsypal (2008) an insufficient production of grains on which not only production bread, pastry, pasta and other foodstuffs of the plant origin is dependent, but also production of chicken meat, eggs and pork meat, because grains are primarily used as a feed for poultry and fowls. As he further states, on the production of pork meat subsequent production of meat products made of beef meat is dependent (because pork and beef meat are usually used in combination for production of salami and other meat products).

In the Czech Republic, there are still very few farms processing raw materials directly at the place of their production, i.e. so called farm processors, in particular when compared to the total number of organic farmers. As Rozsypal (2008) further states, this is mainly due to the strict requirement on the fulfilment of veterinary and sanitary norms by the Czech inspection officers. To this it is necessary to state that in the period 2006-2007, the number of organic food producers increased significantly. Moreover, there is an intention of the MoA to modify these requirements placed on organic processors so that they complied with the EU rules and so that they simultaneously alleviated to the farmers.

3.6.5 Domestic market with organic products

According to the estimation coming from the year book “The Czech market with organic foodstuffs 2008”, issued by the Green Marketing agency, the total consumption of organic foodstuffs of Czech citizens reached the level of 1,29 billion CZK. The prognosis says that it should grow by 70 percent in next three years and reach the level of 6,5 billion CZK. By the year 2010 the organic market should thus enlarge five times.

The increased consumer demand will be mainly caused by the information campaign of the Czech Agricultural Intervention Fund named “Organic farming and organic foodstuffs” which spends 25 million CZK on the information activities.

The statistics regarding yearly consumption of organic foodstuffs, however, do not look so optimistic. The average yearly per capita consumption is compared to the Western European countries very low and reaches only 3 to 4 percent of the EU-15 total yearly per capita consumption (MoA, 2007). The statistics of Yusseffi and Willer (2008) state that in 2006 an average Czech citizen spent yearly 3 Euro on organic food, what a significantly lower amount than e.g. in Austria (with 64 Euro), Germany (56 Euro) or France (27 Euro).

Václavík (2008) states that in 2007 the average yearly per capita consumption was only 126 Czech Crowns (approximately 5 Euro).

The number of Czechs who purchase organic foodstuffs regularly grew up from 3 percent in 2005 to 4,8 percent in 2007. Kvasničková (2009) argues that organic food stuffs became more and more common purchase items of Czech consumers. Currently already 98 percent of consumers know organic foodstuffs, 39 percent of consumers purchase organic products and 14 percent buys them regularly. The national logo “BIO”, by which organic products are labelled, is already known by more than a half majority of consumers (according to the research done by Olgivy in 2008, on 500 respondents). The major motives for purchasing organic products are health reasons (organic products do not contain artificial additives) rather then ecological or sustainability motives. The main cause why people do not purchase organic products is their high price, the popularity of traditional brands and a low awareness about organic products.

According to Václavík (2008) the majority of organic foodstuffs are purchased by university educated people younger 49 years and households with at least one child who is younger than 14 years. They have an above average income and live in towns counting from 20 to 100 thousand people or in a small village of 1 to 5 thousand inhabitants. With regard to the fact that the demand for organic products is growing faster than supply, it must be increasingly covered by imports. In the year 2006, the consumption of organic products was from 56 percent covered by imports.

The largest event of the year 2007 was the introduction of organic foodstuffs into the network of discount outlets of the supermarket Plus which became the largest retailer with organic products on the Czech market. The second largest retailer was the Dm Grocery Markt. According to the estimation of the Green Marketing, there were about 3 000 retailer outlets offering organic foodstuffs at the beginning of the year 2008.

The largest category on the market was represented by the processed food which took a share of 47,5 percent on total sales revenues. The second largest category was milk and dairy products with the share of 21 percent. The fastest growing category was the category of fruits and vegetables which reached 200 percent of year-on-year sales revenues. The organic fruits and vegetables, both fresh and processed, will have a big potential to the future. The categories with the highest sales were in 2007 meat and meat products whose 98 percent were coming from the Czech breeds, and pastries which 91 percent were baked domestically.

4 EMPIRICAL STUDY

In the previous parts of this paper, an importance of organic agriculture was stressed. From the definition, principles and mission of organic agriculture we can judge about a very important role it plays for the society, environment and economy. The general assumption of this paper is that organic agriculture represents a functional model on which it is possible to base sustainable production of food. This presumption is coming from the scientific proofs and the overall attitude of ecological and public institutions which promote and support this model.

As it was stressed in the theoretical part that organic agriculture needs more human labour than the predominant modernisation model of agriculture which replaced human labour inputs by chemical inputs and mechanisation. It is also recognized that organic agriculture plays a significant role in enhancing biodiversity and has many positive environmental impacts. These facts all together endorse this general assumption and create additional base for the further promotion of the sector.

The following part of this paper will look on Czech organic sector from the more comprehensive point of view in order to identify its major week points. The case study done with organic farmers is directed to identification of main factors influencing the organic food production. The ascertained results of the case study are subsequently compared and supplemented by the results of other existing studies on the organic farming in the CR - Dittrichová (2008), Heřmanská (2008) and Rozsypal (2008). Based on mentioned studies, this paper tries to demonstrate that the organic sector in the Czech Republic is underdeveloped in certain areas and clarifies which factors contributed to its current state. The case study results and the results of existing studies represent a core of this paper. One of the outcomes of this paper is also an own proposal of concrete recommendations which could lead to the improvement of sectors' development.

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4.1 Starting point for the empirical research

The organic food supply in the Czech Republic is a very complex problem and there are many factors influencing it. At the first place, it is necessary to mention the national and supra-national policy. The state policy represents a major tool for development of the given sector. Within the policy, state provides financial support to organic farmers; it releases funds to enhance research and education, advisory, promotion and other areas. Within supra-national policy, the EU structural funds are available to promote the organic sector.

In the Czech Republic, the three forms of financial support which effect organic production appear to dominate over the other. Firstly, direct payments which state provides to organic farmers on the area of managed land; secondly various stimuli for organic processors and producers to set up production; thirdly resources dedicated to multiple information and promotional campaigns aimed at enhancing consumers demand.

In our country there is excess demand for organic products and foodstuffs over supply. Despite the demand of Czech consumers for organic food is growing, it still remains low – only 14 % of consumers buys organic foodstuffs regularly, i.e. once a week (Kvasničková, 2009). The national demand for organic food is rather than consumers driven by food trading companies (supermarkets and retailers). These offer a spectrum of organic products which, however, usually come from foreign countries rather than from domestic production. This statement can be confirmed by the research of Kaspříková (2007) who studied the structure of assortment of the Czech supermarkets. Results of the study showed that the representation of organic foodstuffs coming from domestic production averaged 39 % of the total organic assortment and in certain supermarkets was actually equal to zero. The results also indicate a low level in supply of organic food coming from domestic production.

Leibl (2009) argues that Czech marketers try to incorporate domestic organic products into their assortment and for that purpose they turn on domestic food producers, but many times without success.

About the low supply of domestic organic products we can judge from the words of Ivan Hruška, the general manager of SPAR Czech trading company, Ltd. which runs a common chain of supermarkets Interspar. He states the following: “Organic products in to our sales network are currently supplied mainly from abroad. The aim of Interspar is to gain more Czech suppliers. However currently, capacities of organic farms in the Czech Republic are not big enough. We conduct negotiations with organic suppliers and hope that

their products will be shortly in our sales network. The public demand so far still exceeds supply and that is why the majority of organic products must be imported."

As Leibl also claims, marketers' demand nowadays represent a significant factor which instigates many conventional food producing companies to include organic products in their production. Conventional producers who inserted organic foodstuffs in their production plans, do however face up to the same problem and constantly wrestle with a lack of organic materials for production. In proof, it is possible to mention the Czech diary works Olma, a.s. which has to import raw organic milk from Slovakia, Austria or Hungary because Czech farmers do not offer enough raw milk for production of market milk, yoghurts and cheeses. Due to a low supply in organic milk, it has to constantly cut supplies of milk products to its customers (Rozsypal, 2008). The similar problem faces the East-Bohemian Bakeries Nopek who cannot find enough spelt flour to make their pastries and thus have to turn on foreign suppliers.

The lack of organic raw materials is a key problem of the Czech organic sector which inhibits both organic production and consumption. This is because it highly determines the amount of organic final products on the Czech market. Smolíková (2006) confirms this statement saying that the chain of organic groceries Albio is constantly lacking chicken meat, sausage products and milk products, such as whole milk, fermented milk, butter or cottage cheese. Many other authors (Toman, 2008; Leibl, 2008) refer to the insufficient supply of certain commodities, such as eggs or vegetables and fruits. They point out that some organic products are not produced at all by the Czech producers and must be imported (e.g. oils or chicken meat). Václavík (2009) claims, that only 43 percent of organic food consumed by Czech citizens came from the domestic production. He states that a number of organic foodstuffs "produced" in the CR, is here only repacked and the organic contents actually come from abroad. The share of purely Czech organic foodstuffs thus remains heavily below a fifty percent share. Based on the previous conclusions, there is opening several research questions to be responded, i.e.:

- Why there is a lack of organic raw materials from the Czech production?
- Which factors support/constrain organic farmers from production?
- How do they reflect into a final state of organic sector?

In order to identify factors which influence organic food production, there was an exploratory study done among organic farmers who assessed their current situation. Farmers' views have been subsequently used as a guide-post for the additional document-study.

4.2 The research aims and methodology

The purpose of the research was to get insight into current situation of the small-scale producers. In order to get a broader understanding of farmers' situation, the qualitative case study method was chosen. Berg (2007) defines a case study method involving systematically gathering enough information about a particular person, social setting, event, or group to permit researcher to effectively understand how the subject operates or functions. He argues that the case study method tends to focus on holistic description and explanation of the studied phenomenon in order to provide understanding of the given phenomenon rather than its generalisation.

The aim of the research was to identify factors supporting/constraining organic farmers from production of organic products. The object of study were producers of organic vegetables, who we were asked to describe their enterprises and production structures, to assess the demand for organic products and to provide opinions whether it is sufficient, and additionally, to provide views on inspections, administration, state support, competition and other aspects. To find as many information as possible, semi-standardized interviews were selected. This data collection technique was chosen because it was not known in advance what sequence and wording of questions will be. At the same time, a certain questioning framework had to be ensured to provide space for mutual comparisons of answers and their subsequent evaluation. The interviews with farmers were held in an informal way and took about two hours each. To ensure validity of the research, the data collection took place at different places, in different times and with different people. The responses were noted down in a paper during interviews and immediately after their end. An independent observer was present at all the interviews to help with clarification of some answers.

4.3 Formulation of research questions

There was a preliminary research done to allow formulation of research questions. The study was aimed at identification of possible factors which could influence organic production. These were identified with the following research topics : natural conditions, the size and specifics of demand, marketing/distribution possibilities, competition, redemption prices and economic expediency of production, the state support/legislation, support payments, experience of organic inspections, administration burden of farmers, perceived

economic situation, rentability of farm operations and perceived barriers to organic production.

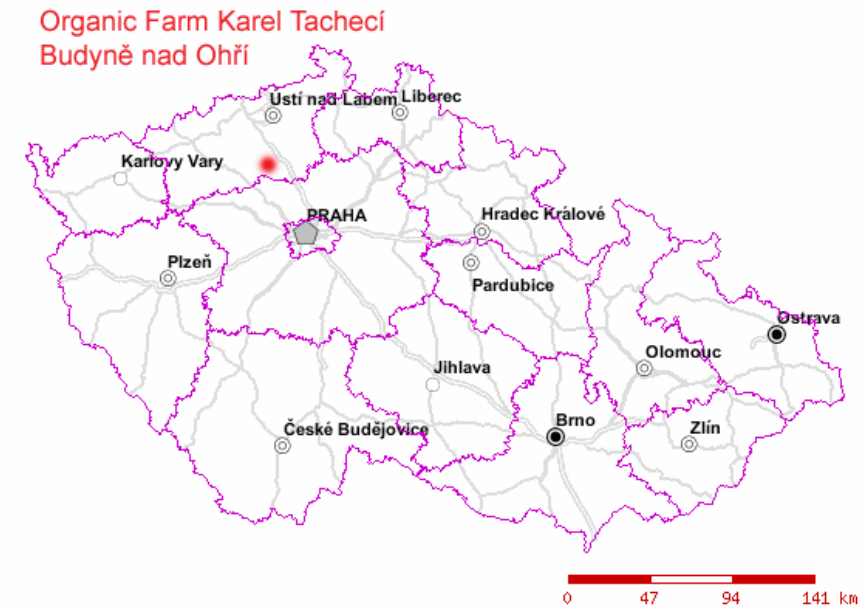
The general research question was formulated as follows: What kind of factors farmers view as supporting and constraining their organic production? How do these factors intrude into the life of organic farmers? The general research question above was narrowed into additional research questions. However, not all of them were asked farmers directly. Some questions characterize rather narrowing of the research topic than direct questions and were modified in various ways. The questions were formulated as follows:

- How natural conditions influence your farming?
- How would assess the demand for organic products, do you think it is sufficient? Do many people demand your organic products? Do they turn on you on their own or do you have to find yourself a market for your products? Who are your customers and what are their specifics?
- How / through what channels do you market and distribute your organic produce? Where do you distribute your produce? Do you thing is more difficult to sell and organic product than a conventional one? Do you co-operate with someone during the sale of your product?
- How do you view your competitors? Is there a rivalry among vegetable producers? Did it happen to you that a retailer refused your product due to a competitor's supply?
- What are the redemption prices of your produce? Are you satisfied with the price you get for your products? Are they high enough to compensate for production costs?
- How do you perceive the complicacy of organic legislation? Do you view the administration requirements / documentation of organic management appropriate?
- What kind of support payments do avail? Are you satisfied with the level of support the state provides to organic farmers? What is your opinion on a current way of remuneration / compensation of organic farmers?
- What is your experience with organic farming inspections? Do you see requirement of inspection officers appropriate?
- Is the organic production profitable? How would you assess your economic situation? Do you plan to expand production?
- What do you perceive as a main barrier to organic production?

4.4 The description of cases

Case no. 1:

Organic farm Karel Tachecí, Budyně nad Ohří



Source of the map: Portal of the Public Administration, 2009.

The organic farm is focused on production of organic cereals and vegetables. It is situated in Ústecký region, 57 km northwest of Prague. The area of the farm extends in the Dolnoooharská Plate, 165 metres above the sea level in a rain shadow of Ore Mountains.

The farm is managed by owner, Mr. Tachecí who started to farm organically in 1998. The owner lives on the farm with his parents; his father runs a conventional farm but the financial management of both farms is separated. The farm employs one permanent worker. During summer season, the WWOOF volunteers come to help with the harvest in exchange of food, accommodation and working experience.

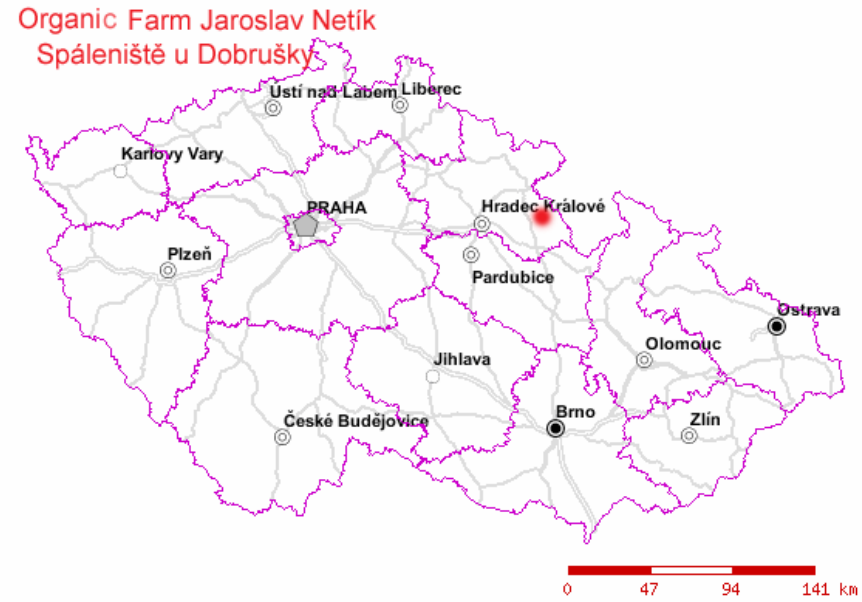
The majority of acreage is formed by arable land (about 74 hectares, thereof 0,2 ha of potatoes and 0,5 ha of vegetables), 6 hectares of land is represented by pastures which are used for making hay for 20 pieces of beef cattle (Fleckvieh breed). The cows are not certified, that is why the milk is supplied into the conventional diary work in Varnsdorn. In addition to cows, a goat, turkey and bees are bred on the farm.

Beside growing perennial and vernal cereals (weed, rye, barley, oat), also mustard, poppy, jointing sleeve, potatoes and various vegetables are grown. These include Hokaido pumpkins, cucumbers, zucchini, onions, carrots, parsley, cauliflower, cabbage, broccoli etc. A substantial part of the acreage is occupied by lucerne and clover which serves as feeds for cattle.

The farm extends its own assortment by offering organic products from other organic farmers and processors. Some goods are also realized from the International Centre for Organic Agriculture of CEE (EkoConnect) in Dresden. The produce is delivered to all bodies that have an interest in its purchase – wholesalers, retailers and customers. Cereals are supplied to the following organisations: Bioland (the German organic farmers association), to organic hog farm in Sasov, to Pro-Bio Association, to the water mill in Křesín nad Ohří, and as a feed to several goat, horse and hog farms. Vegetables and cereals are distributed into specialized organic shops in Prague (Country Life, Albio, Biomarket Vítek, Biotop), to citizen association Ekodomov and into two maternity centres in Prague.

Case no. 2:

Organic Farm Jaroslav Netík, Spáleniště u Dobrušky



Source of the map: Portal of the Public Administration, 2009.

The organic farm is centred on growing vegetables, potatoes and cereals. It is situated on foothills of Eagle Mountains, 37 km eastwards of Hradec Králové, in an altitude of 438 metres above the sea level. The owner Mr. Netík has been managing the farm since 1991; he was declared as the best organic farmer of the year 1995. No permanent employees are currently employed on the farm, only farmer's spouse and four children help with farm operations. Twice a year, people from Brontosaurus NGO come voluntarily to help on the farm in exchange for free food and accommodation.

The farm is run on the acreage of 36 hectares, thereof 12 hectares are arable land, meadows and pastures occupy the remaining 24 hectares. The farm possesses 13 hectares of own land and 23 hectares land are rented for 680 CZK/hectare/year, which makes 15 640 CZK in total.

The arable land is divided into seven large plots, by 1,7 hectares each more distant from the house, where seven major crops are rotated every year: clover, spelt, mustard (used as a green fertilizer), rye, potatoes, spelt and mustard undersowed with clover. Closer to the house 5 smaller plots are situated (each by 0,12 ha) which are used for

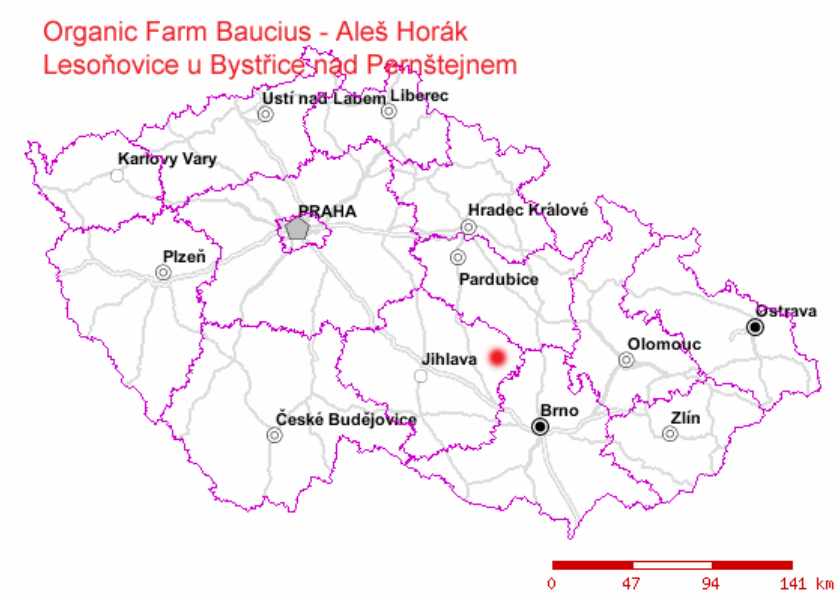
vegetable production. There following crops are rotated: garlic with onions, mustard undersowed with clover, clover, Hokaido pumpkins and potatoes. In addition to mentioned crops, fruit trees, currant and sea buckthorn are planted.

The Netíks raise 3 horses (Hucul breed), 11 pieces of Fleckvieh cattle and fowls. The cows are certified, one cow produces milk which is sold to local people for 10 CZK/litre. Mr. Netík bakes leaven bread and makes home cheese for own consumption.

The organic cereals are sold to Pro-Bio mill in Staré Město pod Sněžníkem, from where it is sold into supermarkets. Spelt is transported to another organic farm in Vysočina region (Organic farm of Mr. Mach) where it is decorticated and afterwards transported back to the farm and sold to customers. The majority of produce is sold from the farm to people from Prague (who come to the area to visit their families), Hradec Králové and Dobruška. Every year the farmer participates on the organic fair trade in Toulcův Dvůr which is organized by LEA (the Pro-Bio League for Protecting Food Consumers and Friends of Organic Farmers).

Case no. 3:

Organic Farm Baucis (Aleš Horák), Lesoňovice u Bystřice nad Pernštejnem



Source of the map: Portal of the Public Administration, 2009.

The organic farm, situated on Bohemian-Moravian Highlands, 52 km northwest of Brno in an altitude of 519 above the sea level. The farm is focused on growing vegetables and cereals. Mr. Horák runs the farm with his spouse who is currently on her maternity leave. They do not employ any workers except hosting WWOOF volunteers in summer.

Horáks farm at the acreage of 40 hectares; thereof 20 hectares represent pastures and 20 hectares arable land. 20 percent of land is rented. On the arable land, cereals, legumes, potatoes and vegetables are grown. From vegetables, the farm cultivates mainly cabbage, carrots, turnip, turnip-cabbage, beet, lettuce, cucumbers and Hokaido pumpkins. From cereals it is barley, spelt, spring wheat, buckwheat, millet and rye. On the balks alongside the plots cherry trees, apple trees, plum trees, mirabelles, currants and goose-berries are grown.

The produce from the farm is supplied to Mr. Weidenthaler (Organic farm “Bio vegetable Velehrad”), to wholesale store of Pro-Bio, to Hnutí Duha Bio-club in Brno, to Růžičkas Bio-club in Prague and to Mrs. Pospíšilová organic farm in Osová Bitýška. The farmer supplements his assortment by produce of other organic farmers. Horáks also regularly participate in a fair in Toulcův Dvůr in Prague.

4.5 The research results

4.5.1 Factors supporting and constraining organic production

Farmers' perspectives on organic farming, including challenges they feel can be summarized as a number of factors supporting and constraining the expansion of organic production. It is important to realize that some factors may be supporting and constraining at the same time. People also do not perceive the world every time the same way. For this reason the research results were not sorted into purely supporting and purely constraining factors, but rather organized according to factor type.

4.5.1.1 Natural conditions

Climatic and soil conditions at a site of the farm are a very important factor because they influence size of yields per hectare, the quality produce, use of mechanisation and in the final effect also the income from operations. The two out of three farmers argue that site-specific conditions of their farms represent a problem for production. The fact that the farm of Mr. Tachecí is situated in a rain shadow of the Ore Mountains means practically very slight rain-falls during the whole year. These affect negatively the yields from cereals and other crops. The problem is that the fields cannot be irrigated because water is missing in the whole area and draughts in some years make the situation worse.

Mr. Netík faces a lack of suitable soil for growing vegetables. Vegetables demands sandy soils whereas soils in Spáleniště are clayey. In order to make his plots more fertile, the farmer has to import some sand on a lorry and add it artificially into the land. As he argues, many loadings would be necessary to improve quality of the soils next to his farm, but such expenses he cannot afford.

4.5.1.2 Demand for organic products

People's demand for organic products showed to be a significant factor influencing organic production. All the farmers accordingly confirmed that they accommodated their production according to what it was demanded. Mr. Horák, for example argues he will plant more Hokaido pumpkins because they were heavily demanded during last year and made him a good profit.

The demand for organic farm produce is constituted particularly from regular customers who make visits on farms; minority of customers is represented by casual buyers who stop by recognizing the BIO logo on the farms' gate. Regular customers usually order products in advance and thanks to this farmers secure sales in oncoming season. The majority of buyers is represented by people from larger cities (Prague, Brno, Hradec Králové), because people from villages, as farmers argue, grow their own vegetables and thus show very little interest in organic products. The people from cities usually come on their own. In case of a bigger order, the produce is brought into the city by the farmer at the expense of higher costs for the customer.

The demand can be noted for several specific features. One of them is seasonality. As farmers argue, the highest demand comes in winter (e.g. for lettuce or broccoli) when there is a lack of organic produce; on the other hand in summer when there's a plenty of products, demand is much lower because people are on holidays.

The second feature farmers mentioned to play an important role was the assortment. The farmers state that customers require a rich spectrum of products to be offered. For this reason they have to cooperate with other vegetable producers – farmers buy their produce and subsequently sell it with profit. Mr. Tachecí even engages in international cooperation with German organic farmers (the International Centre for Organic Agriculture in Dresden) who help him to broaden assortment of organic products.

All farmers confirmed that the level of demand for organic products was sufficient and that they already had to refuse some customers by reason of a lack of organic produce. They also argued there was no need to look for new consumers because they had plenty of regular ones. Mr. Horák in this context remarked: "There is no pressure for those interested in organic foodstuffs. People report for themselves and thus I do not need any advertising. I was several times addressed by various magazines and internet portals and asked to place and advertisement, but I do not stand for it really." As the farmer noted, the increased advertising would only lead to increased demand and he would not have enough produce to accommodate those people.

4.5.1.3 Distribution possibilities

All interviewed farmers stated that they sold organic produce partially from the farm and for the most part they distributed it into Prague (respectively into Brno) where several specialized retailer stores and consumer groups (via organic clubs or maternity centres) were supplied. The farmers argue that direct sales to final customers help to realize better

prices for their produce, but as they argue, this kind of sale is quite demanding on logistics. For a farmer it practically means to send by email an actual offer in the middle of the week, to collect orders during the weekend and in the beginning of the following week to make vegetables ready for the distribution. The consumer groups usually function that way that the goods is packed for particular consumers or families and subsequently delivered to a designated place where they are withdrawn and paid.

The distance of a farm from the larges cities where demand is concentrated also plays an important role. When the distance of the farm is too large, than transportation costs increase heavily and sales cease to be profitable. For this reason Mr. Horák gave up direct deliveries to customers, because this kind of sale was bringing disproportionate financial costs.

Compared to conventional products, it is not mostly difficult for farmers to sell their produce because organic foodstuffs already have their specific clientele. The problem arises when conventional and organic producers sell next to each other at a market place where the organic product (and especially in a smaller town) cannot compete. Mr. Netík states that in the country vegetable is grown by all kinds of greengrocers who sell their produce far cheaper. For example organic potatoes which the farmer was selling for 12 Crowns, competing greengrocers offered for 5 or 6 Crowns). For this reason Mr. Netík discontinued sales at a market place in Dobruška where he was operating between 1996 and 2005.

As he argues, the consumers in the country are still very little aware of the difference between organic and conventional products and do not understand why they should pay higher price for organic products. The fact they have lower disposable incomes than people from Prague, for example, also plays an important role.

As the last means which the farmers mentioned to be selling their produce through were the wholesale store and the trade fair. The fair trade in Toulcův Dvůr in Prague is among the farmers viewed as a very popular cultural and social event where organic farmers from the whole country meet and sell their produce. It was also mentioned by one of the farmers that he also realized there the highest sales from the whole year exactly there. The concentrated offer of organic specialties accompanied by various cultural programs attracts consumers from all over the country. The farmers stated they got to know one another just thanks to this event. They said it is very important to have an opportunity to meet, talk and share experience with one another.

4.5.1.4 Competition between organic farmers

To start with organic production of vegetables is in the CR from many reasons more difficult than in the west of our borders. There are missing qualified labourers (in Western Europe, for example, there are specialized apprentice training centres for organic gardeners and farmers), specialized seeds, mechanisation, storage areas etc. The advantage of vegetable production in the CR is the excess demand over supply and a small competition. The farmers state that since there are only few organic growers, everyone can manage to find his market.

According to their words, the highest competition is in paradox just at the fair in Toulcův Dvůr. Mr. Netík argues that he meets with a different selling strategy of his colleagues who are better marketers than he is and sell their produce for a higher price. Last year, Mr. Weidenthaler, sold there Hokaido pumpkins for 50 CZK per kg and Mr. Netík for 25 CZK, and for this reason he had to increase the price up to 35 CZK so that the price difference was not so high. Mr. Weidenthaler (from in vegetable farm organic in Luční Údolí) is considered to be the best tradesman among organic vegetable growers, because he manages to reach 1 million CZK profit by growing at 2 hectares of agricultural land. As they argue, he never compromises about the price and rather dumps his produce out than selling it for a low price. Mr. Netík on the other hand is always ready to negotiate about final price so that the reasonable compromise between traders was reached.

Another, rather more serious problem the organic farmers face is related to supplies their organic produce into retailer stores. Mr. Horák indicated, he is concerned about the company Čerozfrucht, s.r.o. which is the one of the biggest and the most influential distributors of vegetables and fruit in the CR. As he argued, this company trades with produce all over the CEE and supplies is into local supermarkets, where as a result, it is no more space for small organic growers. The most supermarkets are not willing to reconcile with irregular supplies and therefore they rather arrange for regular supplies of the large wholesale trade companies. The small-scale organic farmer is as a result being refused.

4.5.1.5 Redemption and selling prices of organic produce

The redemption prices of organic produce are higher than at conventional products. Farmers argue they receive a convenient price – for example, Mr. Tachecí says he usually gets by 20 percent higher price than is the wholesale price. Higher redemption prices are at organic cereals. The organic wheat, for example, is purchased for 600 CZK per quintal whereas conventional for 300 CZK per quintal. Farmers claim that in case of vegetable

production the redemption price does not cover their production costs and thus must be compensated by subsidy.

Into the redemption price, a higher portion of manual work (more human-hours spent on the field), costs associated with the organic inspection, lower yields of crops and other factors are reflected. Farmers argue that organic vegetable production is very demanding on manual work which they consider to be one of the major factors distracting conventional farmers from conversion to organic production. Whereas conventional farmers may use mechanisation and spraying of their crops, organic farmers on the other spend hundreds of hours working on their fields. This argument they consider to be the main reason for state compensations.

Selling prices of organic vegetables differ depending upon their kind, yield and season. Concerning direct sales from the farms, the price of organic vegetables is in many cases comparable to conventional produce and sometimes even lower. The final selling price in retail stores, however, may raise us by many tens of percent due to the reflection of additional costs (overhead costs, profit margin etc.). Farmers argue that during sales of their products often apply an ethical aspect – if they know the customer is poorer, they are ready to sell their produce very cheap.

4.5.1.6 Complicacy of organic legislation

The legislation on organic farming is according to farmers' view very complicated. They argue that an organic farmer has to know a thousand of laws in which he must be able to orientate in order to get up to financial support. As Mr. Horák says that the same counts for the administration of organic farming. According to his opinion, not every farmer in his surrounding can neither understand the complicated legislation and nor to process all documents connected to organic management. For this reason he helps other farmers with processing of required documents.

Mr. Horák thereinafter stated: "As the main shortcoming of the organic legislation is in my opinion the fact that legal conditions for financial support allotment are constantly changing. The last year the state promised to support outplanting of fruit trees. I took the money, bought plum trees and set up an orchard. This year the conditions changed and orchards are not supported any more. On account of this I have lost 600 thousand CZK on subsidies."

Based on the additional conversation with the farmer it was found out that things went better at the end and the farmer reached at least at subsidies on permanent grasslands. This year he will not set up new orchards and starting from the year 2010 when the support on orchards will be most probably renewed, he will apply for subsidy again.

4.5.1.7 Financial support of the state

The interviewed farmers avail financial support within the Agri-environmental measures of the RDP: on arable land, vegetables on arable land, other arable land, growing intercrops and pastures.

Two out of three farmers adverted to a wrong system of subsidy redistribution. As they argue, the current system does not reflect the labour intensive work on the arable land and on the other hand makes it advantageous of permanent grasslands owners whose rate of work is incomparably lower.

Mr. Netík argues the following: “The way how pastures are supported compared to the arable land is inequitable. If we take an example of growing onions: they must be set into land by a jig, manually weeded, harvested, purified and in the end carried into the store. With regard to the number of hours spent on the field, the support on arable land would have to be ten times higher so that my labour was equitably evaluated. The farmers on permanent grasslands only mow the grass twice a year and they are finished.”

Mr. Horák holds a similar opinion: “In a fact that many farmers operate their businesses just for the sake of financial support, I see the major problem of our organic agriculture. In addition, those who were growing something cease production because now they are very well supported on pastures. The current legislation, as it is designed, gives advantage to farmers on permanent grasslands who have nothing to do except going by jeeps to control their lands…The state should become wiser and start to motivate farmers to the real agricultural production, because production of local foodstuffs is one of the principles of organic agriculture.”

As farmers accordingly claim, they do not like money redistribution because it always entails some problems. They argue that more than fifty percent of funds designed for support of farmers in fact go into administration of subsidies. They say that these systems were proposed by people not involved in agriculture who do not understand the rightness of the redistribution. For this reason they would prefer a unified payment on a farm or other way of the state support to avoid inadequacies in allotment of the funds.

4.5.1.8 Inspections of organic farming

The two of three organic farmers are registered to inspections of KEZ (the Organic Farming Control), one of the farmers is inspected by ABCERT. It was found out that inspections at farms (except of above mentioned organisations) are also done by the CAFIA (the Czech Agriculture and Food Inspection Authority), the SVA (the State Veterinary Administration of the CR) and the SAIF (the State Agriculture Intervention Fund). The CAFIA is a state administration body subordinated to the MoA, responsible for supervision of safety, quality and labeling of foodstuffs. It is aimed at monitoring of the presence of extraneous substances in agricultural, food and tobacco products. The SVA is the public administration body under the MoA responsible for monitoring the animal health situation and inspection of products of the animal origin. The SAIF is an accredited payment agency, in charge of administration and controls of financial subsidies both from the EU and the national financial funds.

The weightiest comments farmers had in connection with the inspections of the SAIF. They argue that inspectors are people not involved in agriculture who do not understand organic management but they require abidance of the strict rules. One of the farmers was criticized for not having the grass cut, despite the fact that grass was already cut and it inhered to the arable land where regular mowing is not required by the law. The farmer was also requested to provide missing signature in the diary of farm works that is why the farmer had to go far way off to ask one his suppliers for the signature.

Farmers take for very interesting the fact that the SAIF checks the organic fields with the help of satellite photography. “If there is something in disorder with the field, the inspector comes for a visit in a couple of days. It is very remarkable where all the money go,” argued one the farmers.

In connection with the hygienic inspections on of farmers argued: “For common citizens holds that what is not prohibited by the law is allowed. This does not count for the organic farmer... I was penalized for using nettle extract as a natural fertilizer because it was not registered in the list of admissible preparations. I was also prohibited to sell parsley tops because once they are separated from the roots they are not regarded for a vegetable any more.” As the farmer subsequently noted, he views the bureaucratic approach of inspection officers as the main barrier to organic production.

4.5.1.9 Profitability of vegetable production

Organic farmers assess their operations as profitable, namely by virtue of the state subsidies. As they argue, they do not plan to extend their farms because they are fully engaged in current operations.

Profitability of produce differs depending on the kind of crop produced. Since various crops bring different yields, final gains from sales vary to a great extend. Let us provide an example from Mr. Netík. He argues he produces from 50 to 60 quintals of potatoes. If he sells them for 12 CZK per 1 kg, they earn him 72 000 CZK. Unlikely it is with onions whose total yields are only 500 to 600 kg. If sold for 28 CZK per 1 kg (a common selling price the farmer uses), total sales are only 16 800 CZK. This matter of fact in combination with a high intensity of manual work required on vegetable production may the main reason for a small number of vegetable producers in the CR.

4.5.1.10 Living standard of farmers

Two farmers referred to their wage height. Mr. Netík has a gross wage of eighteen thousand CZK per month and as he postulates, if his wife was not working as a teacher, he would not be able to earn living for the family (Netíks have four children). Mr. Horák referred to having above average wage. His spouse is not working at the moment; after her maternity leave she plans to join her husband and work on the farm. Mr. Tachecí lives alone and he did not referred to the wage. All farmers live very modest way and it is apparent that household run is fully subordinated to farm operations. Despite the living standard of farmers could be assessed as rather medium or lower, farmers seem to be very satisfied and enthusiastic about their work. All farmers produce and eat home-made foodstuffs, such as bread, cheese or sauerkraut. Two out of three farmers are vegetarians.

4.5.1.11 Perceived barriers to organic production

As the main barriers to organic production the following factors were perceived: unfavorable natural conditions, weeds and pests making harms on crops, lack of money on investments into farm machinery, limited access to land (neighbor's refusal to rent a plot to the farmer) and an expensive yearly rent, a wrong redistribution of subsidies and a too bureaucratic approach of inspection bodies.

4.5.2 Conclusions of the case study

The case study brought the following results. All indicated factors showed to influence organic food production to certain extends – some of them can be influenced by farmers, other cannot (e.g. natural conditions). Demand, as it was presumed showed to be a very important factor. People's demand for organic produce of farmers is sufficient and in many cases exceeding supply. It is primarily formed by people from larger cities who do cannot produce own vegetables and usually have higher disposable incomes than people from a country. The people's demand for organic products shows seasonality and a desire for the wide assortment of products. To satisfy the demand, a considerable engagement of farmers is required, e.g. by mutually purchasing and selling organic produce or by engaging in other forms of cooperation. The most common distribution channels are a sale from the farm and a sale through a retailer. The smaller number of intermediaries means better redemption prices and higher profitability of the farmer. Farmers also sell to local people (e.g. organic milk) what can have a very positive effect on local economy. An important factor is the distance of the farm from the selling place, because freight costs are also reflected in profitability of sales.

Very important factors which currently threaten sales of small-scale producers are supplies of large distributors of vegetables and fruits. They push out small-scale farmers from supplies into retailer stores what may have destructive effect on local farms in future. Sales conditions of some supermarket chains require regular deliveries what may give a preference to big distributors and lead the loss of markets of small-scale farmers.

The competition between organic farmers is insignificant. More substantial is the competition between organic and conventional producers during sales at a marketplace. By reason of higher selling prices and smaller informedness of consumers in a country, an organic product has practically a minimal chance to compete.

The redemption prices of organic produce are viewed as satisfactory by the farmers. The prices farmers get for their output is increased by the rate of subsidy which brings profitability of production even with smaller yields from produce. When selling organic foodstuffs, farmers are not greedy of gain and often apply an ethical aspect. Diversification of production is required in order to retain satisfactory gains from sales.

According to farmers' views, the high intensity of manual work during vegetable production is not satisfactorily reflected in a subsidy rate. Farmers are embarrassed with the fact that despite intensity of manual work on arable land is much higher, the difference

between the rate on arable land and the rate on permanent grassland (where very little manual work is required) is inconsiderable (approximately 2 000 CZK per hectare).

Farmers say organic that legislation is constantly changing. Frequent changes in legislation inhibit the farmer from effective farm management and may lead to the dismissal of state support. Farmers are mostly unable to follow such a large number of laws and a small omission leads to a sanction for the farmer. Farmers are also dissatisfied with a too bureaucratic approach of inspectors who complicate already demanding work of farmers. Some farmers actually see the inspections on farm as a main barrier to organic production.

Very important role in organic production also plays an access of organic farmers to land. The yearly rents for land are expensive and unwillingness of private owners to rent a plot to organic farmer complicates organic management.

4.5.3 Factors influencing organic food supply – results of associated studies

The existing studies on organic farming in the Czech Republic advert to factors which significantly effect organic food supply and which reflected into the current state of organic sector. The aim of the following part is to have a brief look at some of them because they confirm and specify so far gained results.

As stated by Rozsypal (2008) in his study about causes of stagnancy of organic food production in the CR, a very important role in the current state of organic sector played (plays) state support. He argues that since 1998, organic farming in the CR has been systematically supported by payment per hectare of land without distinct differentiation of payments. The relative ease of conversion from conventional to organic cattle breeding was the main cause of the increase of pastures from 1998 till nowadays. However, even greater differentiation of payments according to land use in 2004 did not bring the expected effect (an increase in arable land areas) and share of permanent grasslands in the total organic land area steadily moved about 90 percent. Based on the previous experience the author argues that even greater differentiation of payments within the RDP probably will not bring considerable change in the land structure.

The author further states that if the MoA wants to reach the objective of 60 percent share of Czech organic foodstuffs on the market (an objective set by Organic Farming and Organic Food Programme), there will have to come to an increase in arable land areas,

otherwise this objective will not be realistic. The author argues that in order to reach the goal, the MoA will have to make the following arrangements:

Not to derive subsidy rate just from economic losses but to reflect in its height the primary interest of a tax payer: to produce organic foodstuffs which are regarded as healthy foodstuffs,

- to develop provisions leading to stimulation of production of the missing organic products and organic foodstuffs (author sees the promotion of demand as the most efficient way),
- to determine the height of an economic loss on the basis of non-impeachable investigation (it must not become a subject of lobby),
- and to enforce a flexible approach of responsible inspection bodies accountable for securing hygienic and veterinary requirements on farm processing of micro enterprises, as it is in other EU member states.

Dittrichová (2008) who has done a one of the most extensive research studies with Czech organic farmers conforms to the above stated findings. She argues that the current way of supporting organic sector will have to be rearranged to assure its successful development. Throughout her paper there is very distinct disagreement with the way the MoA supports organic sector and criticises the current program on organic farming support (RDP) for having little conception. She argues that even the proclamation of the Programme: “Only big farm have a chance to succeed on the market” is in the contrary with the European model of sustainable agriculture whose aim is to promote rural communities and vide spectra of local foods offered through the support of small family farms. According to her opinion, the current agricultural policy (based on the goal or reaching 10 percent share of organic land within the total agricultural land by 2010) resulted into superiority of large farms aimed at permanent grasslands management and beef meat production rather than enhancing small-scale entrepreneurship focused on production of variety of foodstuffs. As also argues that the current way of supporting the sector may be very convenient for large farms managing permanent grasslands and may even lead to their speculative behaviour.

With regards to this claim she states the following: “The Czech Republic in its national ecological programme has decided to subsidize primarily beef meat of the giant owners of very problematically privatised state land....These giant land owners do no copy the market, because they do not need market at all. To be honest: If I own one thousand hectares of permanent grasslands with a subsidy of ten thousand CZK (and more) per hectare, the requirements of the market will be all the same to me. Two hundreds cows

which are the only condition for obtaining subsidies, I leave whole year outside (on a pasture) and ten millions CZK do not make an economic press which would force me to occupy myself with marketing. I will sell a few packages of organic beef in supermarket and gees, dugs, fish, eggs, potatoes and carrot are for me in Bahamas or in Dubai totally exotic terms...And the tax payer expecting and demanding milk products and local fruits and vegetables will not only get them, but also pays 120 CZK for one kilogram of beef meat and hereto adds its selling price of meat in a supermarket."

As Dittrichová additionally explains and proofs in her study, this way of supporting organic sector led in some cases to the speculative conduct of organized groups of entrepreneurs who purchased agricultural land in villages where they neither lived nor ran a business, in order to reach at the subsidy. Owing to some shortcomings of the law 95/1999 Coll., on conditions of transfer of agricultural and forest lands from the ownership of state into the private hands (the privatisation act), some organic farmers and local municipalities inevitably lost access to their agricultural land and thus forever lost possibilities of expanding agricultural entrepreneurship and the development of the public-beneficial life of their villages.

Rozsypal (2008) refers to other set of factors which influenced negatively development of the organic farming sector. He states: "During last six years only two organic farms started with organic milk processing. The reason was the inaccessibility of state subsidies and complicacy of their administration. Also the very strict veterinary and hygienic norms, which were by an orthodox interpretation of responsible bodies, another cause distracting organic farms from the intention of farm milk processing. The essence of the problem does not consist in differences of the EU and Czech legal requirements on organic food production (these are the same), but in the fact that requirements of the Czech responsible bodies (officers) on technical and hygienic fulfilment of these norms are much higher (in comparison with practice in Austria or Germany)…This alibistic practice of Czech inspection officers objectively derogates development of organic food production and of entrepreneurship in rural areas."

Dittrichová (2008) provides with an illustrative example to support the previous argument. There follows an extract from one of her cases:

…This is how practice in a one of family milk processing farms in the spring 2008 looked like: "I have been operating the diary for ten years", narrates the farmer Alois Mejsnar from the diary farm in Trutnov region. "Together with the family we invested in it about six millions CZK in it. We naively thought that we had fulfilled everything what the veterinary administration requested. But the last two years are the proof of the fact I was

wrong. At this moment, for production of approximately 500 litres of milk daily we need one labour force, for doing just administration work. Thereto an audit from the year 2004, which consisted of 9 people, gave us the list of insufficiencies which would be necessary to remedy. They were remedied not for a small amount of money. Indeed in the year 2005 these people were back again. Each their visit costs us many thousands crowns and has a single result – to disgust our undertaking. The last requirement was that if we want to enter our small diary works, we have to wear a coat which was washed in a certified drycleaner's and it has to be sealed into a plastic to the last moment and on the coat-hander must not be the date not older than three days. In Trutnov region we are the last, who process raw milk."

The last problem this paper finds necessary to point out and which has a very forceful impact on the final state of the sector is the position of farmers towards the law. Heřmanská (2008) in her analysis of the main problems associated with paying off subsidies by the SAIF states the following.

"Farmers are subject to an immoderate administration burden. They are obliged to follow very special rules during foundation of their farms, securing their run, certification of organic products and they are required to abide with sanitary rules, veterinary orders, and rules of food and agriculture inspection. Besides that they acquit the duties from the sphere of general entrepreneurship, of the commercial code, of the act on social security payments, of the act on health insurance, of the tax regulations, of the labour code etc.

The prerequisite for maintaining existence of a farm is the mistake-free orientation in all forenamed areas of law. The prerequisite for maintaining existence is also an orientation in the sphere of subsidies. Complicated and in many times differently interpreted legal regulations from the area of organic farming associated with the endowment claims seem to be incomprehensible to farmers (and not only to them) with regard to frequent changes of these norms and the intricate explication of their implementing rules.

During application of the claim on state subsidies, farmers from the above mentioned reasons may end up unsuccessfully due to the entirely small misconduct. But even is a case of perfectly handed up request farmers do not have ensured existence means of livelihood, because according to paragraph 11, coll. 3 of the act no. 256/2000 Coll. on the State Agricultural Intervention Fund, there are not guaranteed any time-limits for the decision on provision of a subsidy. From the view of a farmer is therefore the final decision of the administrative body unpredictable and unbounded in time, what my be a cause of collision with other clearly and inexorably defined obligations and duties towards other subjects who are e.g. the social security administration with the sanction of 0,1 percent

from the amount due and a fine up to 100 000 CZK, the health insurance company with the sanction of the same height and a fine up to 50 000 CZK, a tax office with a sanction of 0,1 percent from the amount due, a leasing company with a sanction in an amount of 1 percent daily and with a threat of removing of leasing subject, a bank providing a loan with given sanction interest in a similar height and in addition with a threat of execution of a pawn etc.

In case that the applicant is a small organic farm or a larger farm but with a higher loan burden, an inadequate or unwarranted sanction or a delay in delivery of a subsidy may have a liquidating impact on the farm."

Heřmanská in her study subsequently shows multiple examples of farms where such situation actually happened and provides with the possible legal solutions.

The purpose of summarisation of the above stated examples from existing exploratory studies was to show, that the current situation in the organic farming sector is a result of many mutually effecting factors and cannot be remedied by a single interference. On the contrary, an enhancement of the share of organic foodstuff on the Czech market and the improvement of the current conditions of organic farmers will require a thorough revision of many associated laws and co-operation of many bodies involved in organic farming – the ministry officers, regional and municipal deputies, lawyers, advisors, teachers, NGO members, farmers and all other interested bodies. They all will have to work together to achieve satisfactory changes.

From the undertaken document study is also evident that there must be a systematic, conceptional approach for the organic farming support. There must be clearly set what will be supported and by what means and how many funds will be assigned to the particular support programmes. The conceptional documents for organic farming promotion must not be done by a single hand but have to incorporate views of all the above mentioned parties. There must also be a motivation, willingness and understanding of those working in various institutions intervening in the organic sector. Once people are motivated, have know their competences and the overall importance and overarching objectives of their actions, many positive changes may be achieved. This again will be the task of the Czech ministry officers who have these institutions under control.

5 CONCLUSIONS AND RECOMMENDATIONS

The purpose of this paper was to bring map and analyze the current state of organic farming in Czech Republic with a focus on its trends and problems. The main aim of this paper was to identify factors which influence organic food supply in the Czech Republic. By means of the case study method carried out with organic vegetable producers and the subsequent document study, the paper explained causes of the low level in supply of organic foodstuffs from domestic production. With regard to the summarized results and the proposed recommendations there can be concluded that aims of this paper were satisfactorily met.

There emerged many important findings from the performed empirical study: The Czech Republic is at one of the front positions in areas of organically managed land. The areas of organic land are annually growing mainly thanks to the stable support from European and partially Czech funds. There are growing numbers of organic farms and organic food producers; the market for organic foodstuffs is also growing since the people are more and more demanding organic foodstuffs.

A problem of the sector is a low supply of organic products from the domestic production. The excess domestic demand must be mainly satisfied by exports. Also Czech marketers and food processors face the problem of the lack of organic foodstuffs and they have to search for organic raw materials abroad.

There are several major reasons for sector's underdevelopment. The people's demand is not still high enough to attract more conventional businesses to start up with production of organic foodstuffs. Compared to the other EU member states, the amount of purchased organic food is very low – an average Czech citizen spends only 126 per year for organic food. The Ministry of Agriculture is very much aware of this fact and tries to instigate people's awareness of organic agriculture and to reinforce purchases of organic foodstuffs by funds inserted into various advertising campaigns. The latest surveys however show that despite people become aware of organic products, they do not purchase them, mainly because of their high price or for a little interest. Those who purchase the organic produce are motivated by health reasons rather than ecological and sustainability motives.

Another factor influencing the level of organic food supply is the support policy of the Czech government. Because the support is conceived per area of agricultural land, the areas of organic land are satisfactorily growing whereas the organic production of foodstuffs rather stagnates. The problem especially resists in a high per area payment on

permanent grasslands with contributed to the growth of enterprises aimed at extensive cattle breeding. The high rate of payment may in some cases led to the speculative thinking of entrepreneurs. The relative easiness of agricultural management on permanent grasslands, according to farmers' views, causes that very few farmers want to engage in labour intensive production methods. The rate of subsidy according to their opinion does not reflect the intensity of manual work necessary for production of vegetables and rather makes it advantageous for permanent grasslands' owners.

The access to the state financial support is complicated and large part of funds intended for organic agriculture support is lost in administration of subsidies. The problem inhibiting production and processing are also very bureaucratic inspections and too strict of interpretation of veterinary and sanitary norms. This causes that farmers have to run into debts to meet excessive requirements of these inspection bodies. Last but not the least, there is a very high administration burden laid on farmers. They have to follow a large variety of legislation rules and a very small misconduct causes they are deprived of the financial support.

The enhancement of the share of organic foodstuffs on the Czech market and the improvement of the current conditions of organic farmers will require a thorough revision of many associated laws and co-operation of many bodies involved in organic farming – the ministry officers, regional and municipal deputies, lawyers, advisors, NGO members, farmers and other bodies whose views will have to be considered and reflected into current legislation.

Author's recommendations

To find a solution to such a vide range of associated problems is not in a power of a single person. However, a couple of ideas can be brought into the current discussion.

It is evident that if there is a goal to increase amount of domestically produced organic foodstuffs, the current way of subsidizing the sector will have to be changed. The current support payments are disbursed according to the different land use per one hectare of agricultural land. As a possible solution might be even greater differentiation of payments with a significant decrease of financial support on permanent grasslands. Another, rather more efficient arrangement would be to determine subsidies according to the type of commodity as it is for example in Sweden. Since there is also lack of organic meat products on the Czech market, also organic animal husbandry (e.g. pig and fowl breeding) should start to be supported within the support programmes. Organic farmers could be also supported in form of contributions on social security or health insurance by the government

(this is a common in Poland, also known as KRUS = Kasa Rolniczego Ubezpieczenia Spolecznego). Farmers could also obtain payments to compensate costs connected with certification. In order enhance employment in organic sector farmers might receive contributions on working place creation on a farm.

With regard to problem of low demand for organic products, the most efficient way how to promote people's demand would be to invest into their education. Since here have not been assigned funds for educational projects so far, author's suggestion is to create programmes for supporting educational institutions and non-governmental organisations in schooling about organic agriculture. Because educational projects aimed at environmental education of children already exist, the financial support would help NGOs and other institutions to incorporate education about sustainable production and consumption into those projects.

Another way how to promote consumer awareness and demand is a targeted information campaign, which the MoA already launched. As a part of the campaign, the author suggests to invest more funds into TV promotion, as well as to invest funds into creation of documentary films informing about sustainable production and consumption methods.

In order to moderate impacts of complicated legislation on farmers, a free system of education and training may be created, led by professional advisors where farmers could learn about legal regulations as well as gain working knowledge necessary for their practice. The MoA could also establish a web site/a telephone assisted information service, where farmers could learn all useful information.

As an arrangement for supporting sales of organic products the author suggests to invest into projects aimed at connecting producers with consumers. Such projects can be e.g. organic clubs already existing in big cities (Prague, Brno). Organic clubs associate families or people who want to purchase organic products directly from local farmers. The aim of these projects would be to enhance foundation of these clubs also in smaller towns.

Other kind of projects could be directed towards the application of the foreign experience and promotion of local initiatives on foundation of local organic food markets. Such movements are known as "CSA – the Community Supported Agriculture" and they already successfully function in many states such as the USA, the Great Britain or Austria. The CSA movements are supported by the government and have a very positive impact both on formation local markets, employment in rural areas, quality of alimentation of the school children and the financial stability of farmers.

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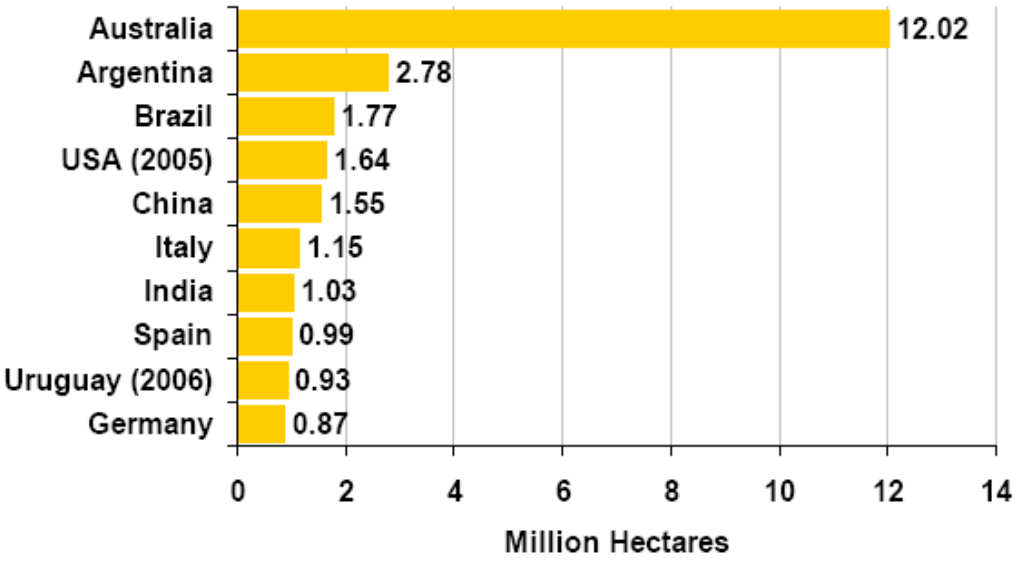
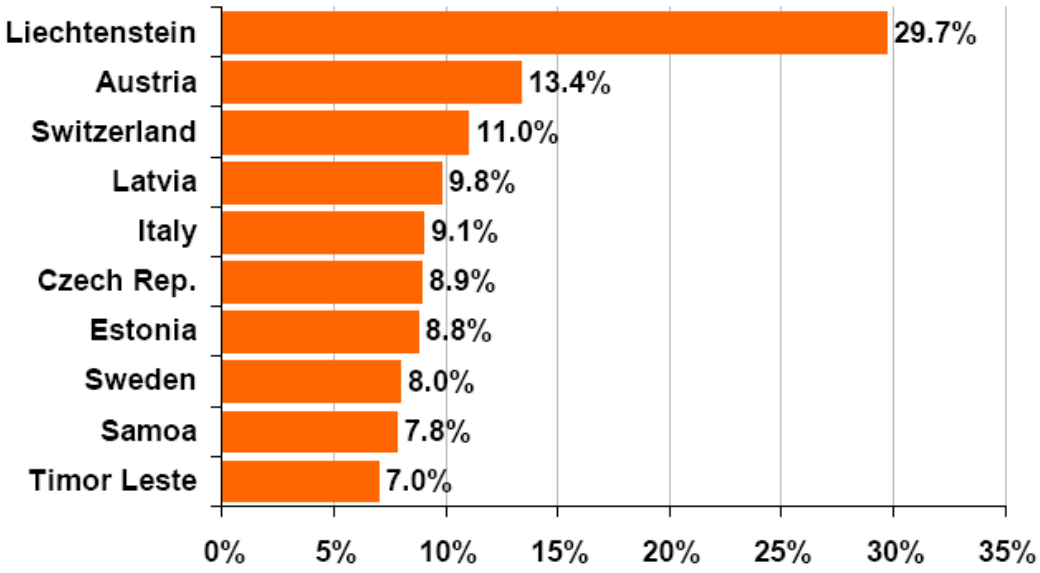
7 SUPPLEMENTS

Supplement no. 1: The ten countries with the most organic land in 2007



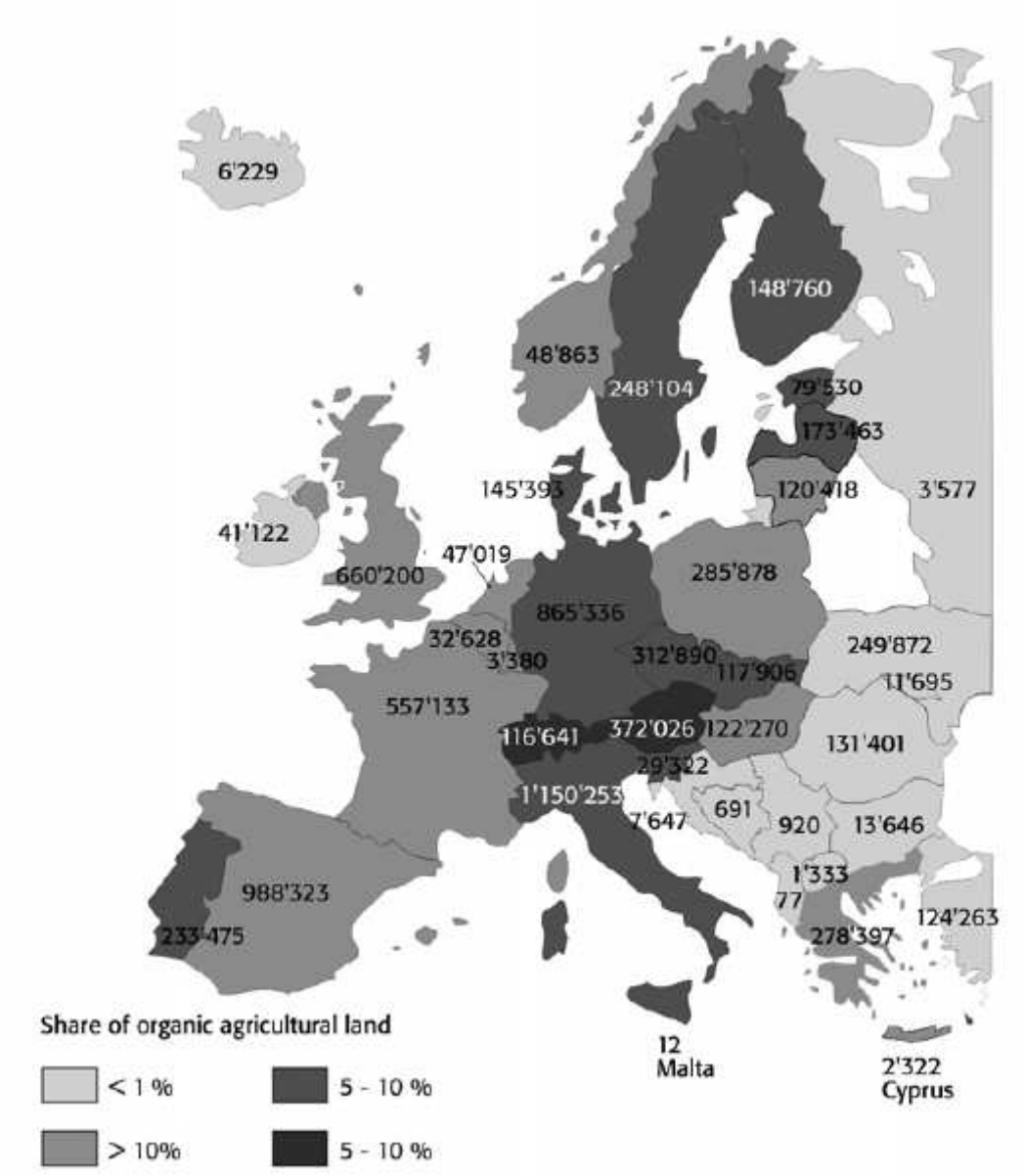
Source: Willer, 2009.

Supplement no. 2: Ten countries with the highest shares of organic land in 2007



Source: Willer, 2009.

Supplement no. 3: The land under organic management in Europe in 2007



Source: Willer, 2009.

Supplement no. 4:

Development of the organically farmed land and the number of enterprises in the CR (1990 – 2008)

Year	Total number of enterprises	Total area under organic management (ha)	Percentage of total organic area
1990	3	480	-
1991	132	17 507	0,41
1992	135	15 371	0,36
1993	141	15 667	0,37
1994	187	15 818	0,37
1995	181	14 982	0,35
1996	182	17 022	0,4
1997	211	20 239	0,47
1998	348	71 621	1,67
1999	473	110 756	2,58
2000	563	165 699	3,86
2001	654	217 869	5,09
2002	721	235 136	5,5
2003	810	254 995	5,97
2004	836	263 299	6,16
2005	829	254 982	5,98
2006	963	281 535	6,61
2007	1316	312 890	7,35
2008	1946	341 642	8,04

Source: Valeška, 2007.

Supplement no. 5:

Development of the organic farming structure in the CR (2003 – 2007)

Land use	2003		2004		2005		2006		2007	
	Area (ha)		Area (ha)		Area (ha)		Area (ha)		Area (ha)	
	Total	%	Total	%	Total	%	Total	%	Total	%
Arable land	19637	7,7	19694	7,5	20766	8,1	23478	8,3	29505	9,4
Permanent grassland	231683	90,86	235379	89,4	209956	82,4	232190	82,5	257899	82,4
Permanent crops	928	0,36	1170	0,4	820	0,3	1196	0,4	1870	0,6
Other land use	2747	1,08	7056	2,7	23440	9,2	24671	8,7	23616	7,6
Total	**254995**	**100**	**263299**	**100**	**254982**	**100**	**281535**	**100**	**312890**	**100**

Source: Valeška, 2007.