

EXAMPLES OF FAMILY FARMS AND BUSINESS IDEAS IN CZECH SUSTAINABLE AGRICULTURE BY AGROPUZZLE 3 PROJECT EXPERIENCE

Maria TOADER*, Gh. V. ROMAN*

**University of Agronomic Sciences and Veterinary Medicine of Bucharest, Romania
Corresponding author: Toader Maria, e-mail:mirelatoadervali@yahoo.com*

Abstract

Education, vocational training and more generally lifelong learning play a vital role in both an economic and social context. The opportunities which the European Union (EU) offers its citizens for living, studying and working in other countries make a major contribution to cross-cultural understanding, personal development and the achievement of the EU's full economic potential. This paper focuses to present some aspect of sustainable agriculture from Czech Republic learned by "Agropuzzle 3" Erasmus plus project experience.

Key words: *agribusiness, Czech family farms, education, sustainable agriculture, vocational training.*

INTRODUCTION

To connect education with labour market for better employability of graduates from vocational schools and universities is a priority today. The topic of small family farms contains the aspect of linking the elements of agro-business, regional production, rural community, traditions of our ancestors and the great need to have them nowadays. It represents solutions in a professional journey of young people, improving interpersonal relations and the labour market which faces a large percentage of people nowadays with lack of a particular idea, specifications and actual implementation.

In Europe nowadays, the topic of agriculture (farming) is rather neglected. But it is still very important. In the era of globalization, we are really missing a story of families that jointly run their businesses and affect the rural community. There are also small farms timidly developing; those which allow integration of disadvantaged groups of people who compensate their various forms of disabilities by being in the countryside (physical or mental disabilities). Inclusion of these people shows a good example of solidarity and tolerance of each community within the EU countries.

From the societal viewpoint, the most important asset of family farms is their contribution to fulfilling the concept of a multifunctional character of agriculture (internalising the effects of business particularly into own farmland and country living – the subsidies are potentially cheaper for tax payers) (<http://www.fao.org/family-farming/countries/cze/en/>).

Family farms also represent a certain specific way of life with a long-term focus on own family and its homestead, which is not only a particularly important contribution to preserving the country life, but also for the care in relation to soil fertility, contentment of kept animals and building maintenance, which can be a substantially positive factor in regard to landscape appearance.

Amongst the negatives there are, especially concerning the small farms, a lesser degree of using the size advantages and in connection with this, a potentially lower efficiency of factor utilisation and sometimes a more difficult access to external resources for development (credit).

MATERIAL AND METHOD

Our paper focuses to present some aspect of sustainable agriculture business ideas from Czech Republic learned by Agropuzzle 3 mobility experience. By participating in this program have been completed and developed skills about which presupposes the concept of sustainability and introduce new innovative policies in the field of sustainable agriculture in order to reduce the negative impact on the environment by means of pollution prevention through rational use of land and conserve natural resources.

The project “Agropuzzle 3 - Puzzle for businessmen in agriculture carrying business in a permanently maintainable way III” is a project of partnership in the Erasmus plus program, Key Action: Cooperation for innovation and the exchange of good practices, Action Type: Strategic Partnerships for vocational education and training aimed at developing, updating and supplementing profile specific skills and training in sustainable agriculture and agribusiness. There are partner organisations from Poland - Agrarian Chamber of Opole; Portugal - Regional Agency for Rural Development RUDE; Spain - Agency for Rural Development ESNEPI; University and Agronomic Sciences and Veterinary Medicine of Bucharest USAMVB, Romania; University of Ruse, Bulgaria, and also, the team also includes the Czech environmental education non-profit organisation called “Natura Opava”.

This project prepares relevant conditions and encourages individuals in the field of agribusiness and farming. Also, it is aimed at exchange of experiences as well as increase of practical self-confidence, promotion of professional development and growth of the participants who will work together on the issue of farming, support of rural environments, agro-business in selected small family farms, their stories and background. It is desired to identify examples of good practice for all participated countries, while drawing inspiration which it can then forward to the people in different region as well as the local or regional community of seven partner organizations.

On 19th to 26th February 2017, a team of students and professors of the Faculty of Agriculture, University of Agronomic Sciences and Veterinary Medicine, were the beneficiaries of education and training courses within the framework of visits to the Czech Republic, organized by Masarykova střední škola zemědělská a Vyšší odborná škola Opava. During this mobility was highlighted contribution of small farmers and family farms to food security, rural development, development of new jobs and management of natural resources and also an opportunity to encourage research and to support protection measures cultural heritage and the environment and maintaining biodiversity.

RESULTS AND DISCUSSIONS

The project “Agropuzzle 3” is generally aimed at keeping the topic of agriculture alive. Agricultural production provides us with our daily bread. It is really necessary to appreciate everyone who nowadays deals with real work that feeds all of us. It is really necessary to teach the next generation to follow those principles. The next generation should be given the opportunity to learn about new trends and innovations from other EU countries so that the young people can compare these aspects and use the experience as inspiration for their own work. Another goal is about linking the know-how of partners from the EU countries, their professional diversity and specificity of individual countries, exchange of experience, possibility to compare the level of supporting the agriculture and farming, working conditions and marketing strategy.

The spectre of partners is stacked in such the way that the organizations mutually discuss and inspire each other; there are representatives of educational institutions (e.g. theoretical organizations) as well as the representatives of professional organizations (e.g. those of open practice area). Having this project, can bind perfect the interdisciplinary

knowledge and experience of the participants, which naturally brings profit to partner organizations and their entire local community.

First mobility organized within this project was in the Czech Republic, near Opava city, respectively, Moravian-Silesian Region. On this occasion we could learn some important data on Czech Republic agriculture and family farms.

The Czech Republic is the western part of former Czechoslovakia and consists of three historical countries: they are Bohemia in the west, Moravia in the east and Silesia in the northeast. The area of the Czech Republic is 78 866 km² (21st place in Europe) and it has a population of more than 10 million (12th place in Europe) (Josef Královec, 2006).

According to the Eurostat Data, a third of the Czech territory, respectively 2,665 thousand ha (34%) is occupied by forests and more than a half, respectively 4,216 thousand ha (55%) is arable land. Also, 75% of total area is occupied of agricultural land, permanent crops means only 2% and meadows and pastures is 23% (Figure 1).

The Czech Republic has the highest average farm size in the EU, respectively, 140 hectares in 2013. Regarding for livestock farms, the number decrease too, registered in 2016, 18,840. The number of farms whose household consumes more than 50% of the final production was 14,000 in 2005 and 5,030 in 2013.

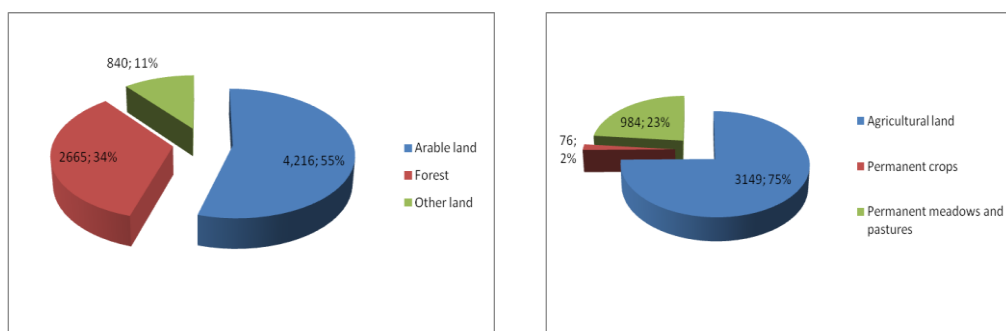


Figure1. Surface of Czech territory by categories of using (thousand ha; %) (Eurostat, 2016)

Czech farmers are showing increasing interest in the production of organic food. As of the beginning of 2012 there were already 646 organic food producers registered in the country, along with 3,920 organic farmers working an area of 482,927 ha, which represents 11.4 % of all agricultural land.

Of this, 59,281 ha was arable land, 6,453 ha plantations, and vineyards accounted for an area of 965 hectares.

In the past decade, the number of farms in the Czech Republic decreased by 42,250 in 2005 at 26,250 in 2013. At the same time, agricultural land area was reduced in the ten years from 3.558 million hectares to 3.491 million hectares (Table 1).

Table 1

Czech farm indicators by area, type of farm, legal entity for 2005-2013
(source: Eurostat, 2017)

Year	Farm - number	Utilized agricultural area - hectare	Farm area - hectare	Farms with livestock - number	Farms with livestock - live stock unit	Labour force directly employed - annual working unit	Farms whose household consumes more than 50% of the final production - number
2005	42,250	3,557,790	5,126,190	31,540	2,074,380	151,900	14,000
2010	22,860	3,483,500	5,065,270	15,920	1,722,460	107,990	2,200
2016	26,250	3,491,470	5,076,430	18,840	1,728,360	105,080	5,030

According to the last agricultural survey of FAO, grain production is the main source for crops, Czech Republic even managed to export some of the vintage, while the livestock sector is in decline, the market of animal products (mainly pork and dairy) dominated by imports from other EU member states.

Arable land has reached 2,665 thousand ha, of which over 1,135.91 thousand ha are integrated in the production of cereals, over 419 thousand ha are allocated for growing industrial crops (rapeseed, sunflower and soybean) and 484,84 thousand ha means plants harvested green from arable land (Table 2). Most farms have a mixed activity (6.245 farms), followed by production of cereals, leguminous crops and oil seeds (5.365 farms). Only 3.085 holdings are classified as livestock, dairy cows excluding this increase. Also, only 16% of all farms have non-agricultural activities (Lyddon Ch., 2012).

Table 2

Crops statistics in Czech Republic (thousand ha)
(Source: Eurostat, 2017)

Crops	2012	2013	2014	2015	2016
Cereals for the production of grain (including seed)	1,454.44	1,413.14	1,409.61	1,389.83	1,351.91
Dry pulses and protein crops for the production of grain (including seed and mixtures of cereals and pulses)	20.18	17.85	20.17	33.14	35.63
Rape, turnip rape, sunflower seeds and soya	431.69	446.60	415.15	393.94	419.25
Plants harvested green from arable land	426.71	451.39	454.13	471.87	484.84

According to the EU Agricultural Policy, the Czech Rural Development Programme for 2014-2020 focuses on the following 3 main objectives: supporting the sustainable management of natural resources and encouraging climate-friendly farming practices (with around 25% of agricultural land under contract to protect biodiversity, 11% to improve water management and 12% to protect soil), increasing the competitiveness of agriculture and forestry, and the wider food sector (investment support to 3,500 farms, almost 1,450 investment projects in forestry technologies and 830 projects in the food industry), boosting the

rural economy (creating almost 1,900 new jobs, providing advisory services and training for nearly 19,000 participants).

Czech Silesia is the name given to the part of the historical region of Silesia presently located in the Czech Republic. While not today an administrative entity in itself, Czech Silesia is, together with Bohemia and Moravia, one of the three historical Czech lands. In this context, it is often mentioned as "Silesia" even though it is only around one tenth of the area of the historic land of Silesia.



Figure 2. Czech Moravian Silesia and located of visited farms
 (Source: [https://en.wikipedia.org/wiki/Czech_lands#/media/File:Czech_Rep._-_Bohemia,_Moravia_and_Silesia_III_\(en\).png](https://en.wikipedia.org/wiki/Czech_lands#/media/File:Czech_Rep._-_Bohemia,_Moravia_and_Silesia_III_(en).png))

Agricultural production in the Moravian-Silesian Region is primarily composed of sugar beets, potatoes and mountain farming. The diversity of these areas is due by the different terrain. The soil cover consists mainly of clay and loam soils. Brown earth is the predominant soil type. There is virtually no maize production in the region. Roughly half of the agricultural land – 50.5% is given to growing potatoes, while sugar beets are grown in 29% of this land, and 20% is for mountain farming. The region has roughly 2 hectares fewer of agricultural land (arable land) per agricultural worker than the national average. The most fertile areas suitable for intensive production are located in the districts of Opava and Nový Jičín and at Osoblaha Hook in Bruntál district, where sugar beets, wheat, malting barley, seed maize, oilseeds, vegetables and perennial fodder crops are grown. In animal production, dairy cows are predominately bred with limited breeding of pigs and poultry. Organic farming is practiced in less favored areas (LFA) and focuses primarily on maintaining pasture for cattle to graze and also for sheep on a limited basis (http://www.msk.cz/en/zivotni_prostredi/agriculture_-_basic-information-and-legislation-64491/).

During mobility organized in the region by the Czech partners, we noticed that all the farms visited used in a sustainable landscape and natural resources of the areas in which it operates and also applies to friendly technologies for crops and livestock.

The first visited farm family was “The Farm of Halfar Family”. It is a small family farm with sheep, goats and poultry, producing own food and selling the products both to distributors and to customers coming to the yard. The Halfar family farm located in Bohuslavice near Opava also offers products made of cow's milk. Ms Anna Halfarová makes delicious threads which are manually pulled steamed cheeses containing only cow's milk, rennet, cultures for a particular type of cheese and salt. It can also enjoy yogurts made of cow's milk, cultures intended for yoghurt production. And there are strawberry or blueberry jams to be used for flavouring. The cream hand-picked from cow's milk is then pasteurized and whipped; it is the basis for soft butter; it is manually filled into traditional moulds.

The next example was “The Bakery Gobe spol. s r.o. (Ltd.)”. The name GOBE comes from colloquial translation of German words "golden" and "Bäckerei" (golden bakery), using the first two letters of these words. Now the company has 26 employees; it has own premises including the area on which it operates retail business for food, while selling the widest range of its own products. The company supplies bakery products to the surrounding districts of Ostrava and Opava, while cooperating with about eight dozens of customers. The company does not try to compete with large industrial bakeries. Instead, it focuses mainly on traditional character, uniqueness and diversity of production. The company's management is convinced of correctly chosen direction when taking into account the fact that the company has regularly ranked in the highest places in the annually held prestigious competition "Baking Saturday", in both non-professional and professional evaluation. In the 18-year history of this competition, this company won the highest prizes as the best bakery within the time period of all 18 years in which the "Baking Saturdays" have been held in the open air museum in the town called Rožnov pod Radhoštěm. Also, it is also known for its wedding cakes which have been baked for years according to traditional home recipes.

Other business family idea was mini-brewery “U Komárků” from Rohov village. This company produces brew beer using traditional non-pasteurized method; it means beer retains all the vitamins B as well as other healthy substances. The beer produced is being sold by its own restaurant, along with other traditional foods. This unit has been baking specialties of own kitchen since 2001, using a special oven (on beech wood only); this oven is called Golem. This is the unique design of the three-chamber oven fitted with two separate outlets into the chimney. The system is protected by the Czech Patent Office as a utility model. It was not easy to build up the oven. It was very difficult to find a oven man who could be able to meet these requirements to make the oven fully functional. It has found such a man in Slovakia. It is interesting that the whole project of the oven is drawn up on the wall already built; the oven man let only his feelings to lead him. And he was very skilled - as we found out later. He comes from the third generation of professional oven men.

Also, we visited “The Krahov Rabbit Farm” in Hořtice. This is a small family farm specializing in supplies of fresh eggs, chicken and hens directly to customers. Main production consists in breeding slaughter rabbits - *Hyla* breed hybrids. The farm works on the basis of freshness of products and personal contact with customers. The company holds the selling stand two times a week at the farmers' markets. Domestic rabbit (*Oryctolagus cuniculus f.domesticus*) is a domesticated type of the wild European rabbit. The wild rabbits were bred by the ancient Romans too, using so-called *Leporariums*. The meat was considered as great delicacy. Nowadays, the rabbit meat is very popular. However, it is also a very shortcoming product in shops. The rabbit meat is easily digestible. It has fine muscle fibres, the minimum amount of collagen and low contents of fats. With its texture and composition, it resembles meat of poultry. The advantage of the rabbit meat lies in shorter heat treatment time and better dietary properties.

An example of organic farm was “Biofarm George”. This farm is located in the picturesque environment of Odra hills, near the town called Fulnek, in the adjacent area called Jerlochovice. It manufacture high-quality BIO veal and beef meats, farming on 310 hectares of grasslands with about 200 pieces of beef cattle of the breeds called Simmental and Limousine. There is qualified and experienced personnel educated in the field of agriculture and working with love and exemplary care. The farm is fitted with cutting-edge agricultural technology which is environmentally friendly and allows achieving high productivity. The farm produces the cattle that primarily provide organic veal meat of the highest quality. Small business at the regional level is becoming more and more important, while agriculture industry is being neglected although it provides all of us with our primary needs.

Lukáš Matela is a bio beekeeper who organizes summer camps of Langstroth beekeeping, sells homemade honey and produces other supplementary honey products as mead or honey wine. Along with his father Leopold he presents himself as a hobby beekeeper, in total they take care of 100 bee colonies bred in small units (5, 4). This type of bees is more resistant to varroosis. Lukáš and his father take also part in the project about VSH bees breeding. To prevent varroosis organic acids are used only. Lukáš Matela has been publishing articles about beekeeping in the Czech beekeeping magazine “Modern Beekeeper”. His Beekeeping aim are Testing of the bee colonies’ features and placement of inseminated mothers.

Almond orchards can be found in Hustopeče, from the 18th century. There is long tradition of almond wine production in this region. Vineyards around Hustopeče town had an area of over 1,350 ha. In the 60s of the last century, their area was 89 hectares only. Today, the situation is a bit better and we can find vineyards on 273 hectares. The company produces also other almonds specific products, cosmetics, oil and other traditional drinking alcohol.

“Kovacs Winery” is a small family winery based in the village called Novosedly, Moravia region. The winery continues in the long-time family tradition of growing grapes and production of premium wines focusing on the original roots. Kovacs winery runs its business on the area of 35 hectares of own vineyards; annual production reaches nearly 200 thousand bottles of wine made of own grapes.

In conclusion, after participating in these activities under the project Agropuzzle 3, it was shown that improved living standards through policies and reforms, combined with practical support in terms of capacity, tools, technology, infrastructure and access to services base must become a priority in national and international efforts to preserve environmental sustainability, biodiversity and natural resources.

CONCLUSIONS

By participating in this mobility we can say that was a good opportunity both to develop personal and professional life of the participants by viewing a comprehensive outlook on the importance of sustainable agriculture policies in the economic and labour, pursuing local resources and developing sustainable agricultural activities enabling employment and reduce unemployment in rural communities.

It emphasized the importance of decision makers in the development and promotion of existing resources and local traditions, permanent concern for initiating new business ideas for small farms and permanent contact with the rural community and civil society in the areas visited.

The motivation for participation in such mobility is very important for academic and professional development through the acquisition of innovative practices in education students that emphasize the possibility of applying theoretical knowledge which include specific activities within their areas of training (agriculture, forestry, horticulture, animal husbandry), on the other hand, to see certain patterns of organization of farms and identify ideas for developing business potential.

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