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Bachelor Thesis

Title: European funds and their management in the Czech Republic

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Declaration

Hereby I declare that this thesis titled “European Funds and their Management in the Czech Republic” represents my own original work and effort. All other sources of information which have been used in this work have been acknowledged and are to be found in bibliography.

.....
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**Evropské fondy a jejich management
v České republice**

**European funds and their management
in the Czech Republic**

Souhrn

Hlavním cílem této práce je provedení analýzy Evropských fondů a posouzení jejich managementu pro využití v České republice a na příkladu finančních fondů určených pro realizaci Společné zemědělské politiky (CAP) ukázat, zda neinvestiční podpory poskytované do zemědělství jsou využívány efektivně.

Za tímto účelem byla provedena nákladová analýza jak vybraných rostlinných a živočišných komodit tak modelových farem a stanovena jejich míra nákladové a souhrnné rentability. Výsledky ukázaly, že díky vysokým provozním dotacím (přímé platby a LFA platby) dosahovaly modelové farmy ve všech výrobních zaměřeních kladného výsledku hospodaření. Velmi důležité zjištění však je, že podniky zaměřené na převažující polní výrobu vykazují pozitivní rentabilitu celkové produkce i bez přispění dotací, zatímco zbývající podniky zaměřené na smíšenou výrobu nebo na chov dojníc a skotu bez tržní produkce mléka by bez přispění provozních dotací nebyly schopné přežít.

Závěrem lze proto konstatovat, že pro zajištění efektivního rozdělování dotací v zemědělství je nezbytné zavést diferencovaný způsob přidělování dotací tak, aby dotaci dostali pouze ti farmáři, kteří ji opravdu potřebují.

***Klíčová slova:** Evropské fondy, LFA podpory, Nákladová rentabilita, Nákladové šetření, Produkční oblasti, Provozní dotace, Přímé platby, SZP, Zemědělství*

Executive Summary

The main objective of the thesis is an analysis of the European funds and assessment of their management in the Czech Republic and to show, using an example of the subsidy funds intended for implementation of Common Agricultural Policy (CAP) whether this non-investment support provided to agriculture is used effectively.

Therefore, a cost analysis of selected crop and livestock commodities was made as well as cost analysis of model farms and their total profitability was simulated. The results showed that, according to high operating subsidies (direct payments and LFA payments), the model farms were profitable in all production areas. The calculations proved that the farms maintaining field production were fully competitive even without financial support while the other farms specializing in combined production or extensive livestock production would not have survived if they had not been supported via CAP subsidies.

It can be stated that, in order to ensure an effective management of CAP funds, it is necessary to differentiate the way of fund distribution so that only the farmers in need of support would really receive it.

***Key words:** Agriculture, CAP, Cost Management, Cost Profitability, Direct Payments, European Funds, LFA Supports, Operating Subsidies, Production Areas*

Table of Contents

1. Introduction.....	5
2. Objectives of thesis and methodology.....	5
2.1 Objectives of my thesis	5
2.2 Methodology	6
3. Literature overview – European funds	8
3.1 Regional Policy	8
3.1.1 European Funds.....	9
3.2 Who uses the resources from the European Union?	10
3.2.1 Operating Programmes in the 2007-2013 period available for the Czech Republic	12
3.3 Common Agricultural Policy	14
3.3.1 European Agricultural Fund for Guarantee.....	16
3.3.1.1 Single Area Payment Scheme	17
3.3.1.2 Top-up payments.....	18
3.3.2 European Fund for Rural Development	18
3.3.3 Less Favoured Areas Payments	22
3.3.4 Agro-Environment Measures	23
3.4 Use of farmland in the Czech Republic	25
3.5 Macroeconomic and other factors affecting agriculture	27
3.5.1 Gross Domestic Product.....	27
3.5.2 Prices of agricultural products	27
3.5.3 Exchange rate.....	28
3.5.4 Natural conditions	28
4. European funds and their management in the Czech Republic	29
4.1 Management of CAP financial instruments in reality	29
4.1.1 Plant production	29
4.1.1.1 Which areas receive subsidies and which do not?	32
4.1.1.2 Distribution of Agro-environmental Measures supports.....	34
4.1.1.3 Plant farms during past 5 years	36
4.1.2 Livestock production.....	37
4.1.2.1 Situation of subsidies for livestock breeders.....	39
4.1.3 Management of the European funds supporting agriculture	41
4.2 Future of the management of CAP funds.....	45

5. Results and discussion.....	47
5.1 Comparative analysis of commodities	47
5.1.1 Results of crop production	48
5.1.2 Results of livestock production.....	49
5.1.3 Summing up	50
5.2 Comparative analysis of farms.....	51
5.2.1 Possible solutions how to increase competitiveness of farms	53
5.3 Discussion	55
6. Conclusion.....	57
7. Bibliography	60
7.1 Internet Resources.....	61
8. List of figures, graphs and tables.....	63
8.1 Figures.....	63
8.2 Graphs	63
8.3 Tables	64

1. Introduction

In the year 2011, there are 50 states in Europe. Twenty seven of them belong to the European Union. Due to the increasing number of Member States, the Union boasts one of the most complex territorial, political, judicial, and financial system in the world.

The Czech Republic has been part of the European Union since May 1, 2004. Since its accession, our country went through many changes, affecting Czech economy either directly or indirectly. We became part of the EU single market and its Common Agricultural Policy (CAP), strongly influencing our economic situation and development of Czech agriculture.

The EU single market has been facing high fluctuations of good prices not only since 2004. A significant price decrease of agricultural products had a huge impact on Czech food producers, their economic situation, competitiveness, and also their relationship to the environment. The European Union provides financing not only to support development and competitiveness in particular sectors. The purpose of financing is also compensation of losses that the market unification caused and, since the EU intends to protect the environment, conservation of our natural resources.

In my thesis, I would like to discuss the funding system of the Czech Republic. At first, I would like to shortly describe all European funds that our country can use resources from. After the management of funds is described, I am going to continue in focusing on the CAP funds that are associated with Czech farmers, food retail sellers, and others being active in agriculture. The following section of my thesis is aimed at the examination of funds management and discussing its effectiveness. I would like to deal with the European funding system in the next programming period as the European Union has already prepared some new strategies.

2. Objectives of thesis and methodology

2.1 Objectives of my thesis

The main objective of the thesis is an analysis of the European funds and assessment of their management in the Czech Republic. My intention is to make a research which would fairly monitor management of all European funds including amount of money which the Czech Republic was allocated from these funds. After the importance of all

funds is described the thesis concentrates only on analysis of subsidies supporting Czech agriculture from the European Agricultural Fund for Guarantee and the European Agricultural Fund for Rural Development. To state whether the supports provided by these two funds are distributed effectively, I am going to make cost management of particular commodities and model farms that include all operating subsidies. By comparison of selected commodities and their profitability with and without EU payments I am going to state which subsidies are not being distributed effectively. By comparison of competitiveness of model farms that receive subsidies with the same farms that are not being subsidized the efficiency of funds is going to be discussed.

2.2 Methodology

In order to study efficiency of European funds, I analysed distribution of CAP subsidies in years 2005-2009. I selected 16 most common agricultural commodities including 8 crops such as winter wheat, winter barley, spring barley, corn, sugar beet, oilseed rape, perennial fodder, corn for silage; 6 commodities concerning livestock production such as calves, heifers, pregnant heifers, dairy cows, bulls and suckler cows and also commodities such as meadows and pastures. From Czech Institute of Agricultural Economics and Information, I obtained data concerning production of all of these commodities relating to three production areas.

Based on these data I examined annual total costs of production which was composed of seed (own and purchased), fertilizers (own and purchased), plant protection preparations, cultivation costs, other direct costs, salaries and personal costs, and fixed costs in case of crop production. Total costs concerning livestock production included feed (own and purchased), medicines and disinfectants, mechanization costs, other direct costs and services, salaries and personal costs, amortization and fixed costs concerning livestock production.

Annual yield considering all crop commodities was production of a given crop in tonnes per hectare. Annual yield on dairy cows were litres of milk a year while yield on the rest livestock commodities were kg of meat per year. Based on data from Czech Statistical Office concerning average annual market prices of selected commodities I calculated gross annual revenues by multiplying the average price by the annual yield of a given

commodity. Therefore, this model considers that “each produced tonne was also sold” in given year. This condition is considered due to SOT subsidies.

Based on the data provided by Czech Institute of Agricultural Economics and Information I was able to derive amount of operating subsidies which farmers were drawing. It included SAPS and Top-up payments, LFA subsidies and AEM supports.

I calculated cost profitability in percentage of every selected commodity by dividing gross revenues by total costs minus the number one representing 100%. Consequently, I also calculated total profitability which included all operating subsidies. The equation where [GR] represents annual Gross Revenues, [TC] annual total costs and other abbreviations stand for annual amount of money drawn from particular funds is shown below.

$$\text{Total profitability} = \frac{GR + SAPS + Top-up + LFA + AEM}{TC} - 1$$

When the total profitability was negative the particular commodity was not profitable even with the financial support from the EU while positive total profitability indicated that the production of particular commodity was profitable in given year. I compared cost and total profitability which fairly monitored whether the production particular commodity needed subsidies for being profitable.

Based on data concerning the occurrence of 10 most common crops and 6 most frequent livestock, I created a model representing profitability of an average farmer during the particular five years. The formula for, for instance, average total cost is as follows:

$$TC_A = TC_1 * S_1 + TC_2 * S_2 + \dots + TC_{10} * S_{10} + TC_{11} * q_1 + TC_{12} * q_2 + \dots + TC_{16} * q_6$$

Where [S₁ – S₁₀] represent the hectares (from the sum of 1 hectare) “earmarked” for ten most common crops and [q₁ – q₆] are the quantities of six kinds of livestock living on a hectare. This formula deals with the average hectare and numbers included in it differ for each of three areas.

I also calculated cost and total profitability of model farms and compared them between each other. From these calculations, I derived conclusions concerning competitiveness of model farms and efficiency management of subsidies that they receive.

3. Literature overview – European funds

3.1 Regional Policy

The European Union is one of the richest parts of the world. Nevertheless, there are some significant differences between its regions. In order to ensure an even industrial and social growth of all Member States, the European Union has introduced its **Regional Policy**. Its purpose is to eliminate economic and social inequalities between rich and poorer Member States. The Regional Policy supports rural development, industrial and economic growth, employment and competitiveness among the regions of Member States (or, in some cases, accession Member States). More than one third of the EU budget goes to Regional Policy, making it quite important.

For the programming period 2007-2013 (a 7-year cycle for which the European Union prepares a budget, objectives, and strategies; the next period will commence on January 1, 2014 and is expected to end on December 31, 2020) there are three objectives prepared for the Regional Policy. The Structural Funds and Cohesion Fund (see the Table 1 on the page 10) represent powerful instruments that the European Union uses to fulfil these targets.

Convergence Objective: Supports industrial and social development of the regions whose GDP is less than 75% of EU average. In the Czech Republic, it covers all regions except for Prague (<http://www.strukturalni-fondy.cz/Programy-2007-2013?lang=en-GB>, 28.12.2010).

Regional Competitiveness and Employment Objective: The purpose of this objective is to help the regions exceeding the Convergence Objective limits to stay competitive and attractive for investors and visitors. It provides funding for the projects improving environment, strengthening employment and investing into human resources. Only Prague can be financed from the funds allocated for this objective.

European Territorial Cooperation Objective: It pursues support of cross-border, interregional, and transnational cooperation of regions. In the Czech Republic, it covers all regions (<http://www.strukturalni-fondy.cz/Programy-2007-2013?lang=en-GB>, 2010).

3.1.1 European Funds

To fulfil, not only, these three objectives, the European Union has introduced European Funds. These powerful instruments are to ensure economic, industrial, and educational growth. They support financially and technically weak or disadvantaged areas or branches in order to eliminate any social and economic inequalities among the EU Members and their regions (<http://www.strukturalni-fondy.cz/Informace-o-fondech-EU?lang=en-GB>, 2010). For the current programming period of 2007-2013, the Czech Republic has EUR 26.69 billion available from the European Funds. In order to have an idea of how big this amount is, we can say that it equals approximately three quarters of the annual state budget of the Czech Republic (<http://www.strukturalni-fondy.cz/Informace-o-fondech-EU?lang=en-GB>, 5.1.2011). The Table 1 represents the most important European funds and their main targets.

Table 1: Most common European Funds accepted for 2007-2013 programming period

Structural Funds	<p>The main instrument to eliminate differences between the regions of Member States. Structural funds boast the highest amount of resources compared with other funds. Hence, they are divided into two separate funds.</p> <p>The European Regional Fund mainly to improve and strengthen industry and the European Social Fund attempting to support employment and education and qualification of social resources.</p> <p>These funds can support Czech agriculture. However, they are primarily intended for other branches (e.g. a financial assistance to the Czech Ministry of Environment).</p>
Cohesion Fund	<p>Contrary to the Structural Funds, the Cohesion Fund was set to support poor states (not regions) and developed to provide resources for particular projects dealing with transportation (construction of trans-European road system, railway renovation works, public transport support) or power engineering. Only the countries whose Gross National Product is lower than 90% of EU</p>

	average can use the fund (the Czech Republic meets this criterion).
European Agriculture Fund for Guarantee	A very important fund for agriculture. Since the beginning of 2007-2013 programming period, it has been acting as a separated programme (it used to be a part of Structural Funds in the last programming period).
European Agricultural Fund for Rural Development	The second important agricultural fund which was also separated from Structural Funds. I am going to discuss it bellow within the European Agriculture Fund for Guarantee.
European Fisheries Fund	Third fund which happened to be separated from Structural Funds. It is mainly to support fishermen and protect “life under water”.
European Union Solidarity Fund	This fund was developed after the flood events in 2002. It was designed as a flexible assistance to Member States (or accession Member States) to manage the recovery from natural disasters.
Instrument for Pre-accession Assistance	The Instrument for Pre-accession Assistance is designed to assist the accession Member States to fulfil the European standards and to become part of the European Union “as fast as possible”. The Czech Republic can no longer use resources from the Fund.

3.2 Who uses the resources from the European Union?

Every Member of the European Union can use resources from some of the above funds. Practically, economically or industrially weaker countries can use more funds and obtain a significantly higher financial support from them (e.g. the Czech Republic, Slovakia or Hungary). The states receiving more resources than they have to pay are called receivers.

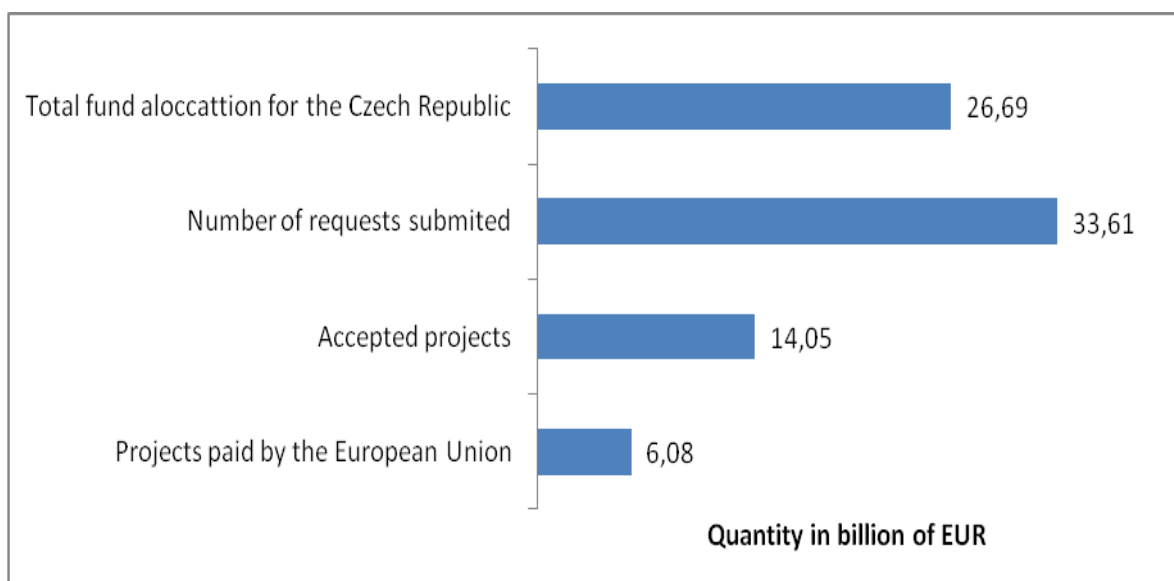
As noted on the page z, there is EUR 26.69 billion available for the Czech Republic. This amount was calculated and accepted by the European Commission using formulas dealing with GDP, GNP, population, and factors affecting industrial maturity. Nevertheless, the amount does not need to be used entirely.

At first, the European Union finances “only” maximum 85% of costs connected with the implementation of European projects. The remaining part of costs (at least 15%) has to be provided by a respective state. It simply means that if, for instance, a Czech entrepreneur needs 100 million Czech crowns to implement his project, supposed the entrepreneur’s project meets the European requirements and is eligible to be financed from a certain European fund, our state has to pay 15 million CZK first and then the entrepreneur obtains the remaining 85 million CZK from the European Union. If our state could not provide 15 million CZK, the entrepreneur would not be able to get the EU support. However, it does not happen often as every government is usually interested in receiving and distributing subsidies. Hence, it considers being able to contribute to the funding system as “an important obligation”.

A more common example of not-using all subsidies is the inability of fund applicants to meet the requirements required by the European Union. The Graph 1 shows how effective the Czech Republic was in using resources from the European Funds on November 3, 2010.

Graph 1: Effectiveness of financing Czech projects by the European funds on November 3, 2010

Source: <http://www.strukturalni-fondy.cz/CMSPages/GetFile.aspx?guid=c8d02824-16e3-49c2-8243-d65530f792ce>, 8.11.2010



As we can see from the Graph 1, the Czech applications do not often meet the European requirements. Only 22.78% of the projects received resources from the European Funds. However, the graph was prepared on November 3, 2010 when even the half of the programming period was not completed. We can expect that other 29.86% of projects are going to be funded (as far as they were accepted) and another considerable number of possible fund applicants have not requested the resources yet. Nevertheless, we can expect that as far as the programming period is in the middle of its length, the Czech projects can receive more than “just” EUR 6.08 billion.

The procedure which each applicant has to follow when it comes to using resources from the European Funds is quite complicated and I am not going to discuss it in detail in my thesis. However, every person requesting resources from the European Union has to choose an **operating program** supporting his or her intentions. The following chapter is going to explain what operating programmes are available and how they are important for the Czech Republic.

3.2.1 Operating Programmes in the 2007-2013 period available for the Czech Republic

Every Member State negotiates its operating programmes with the European Commission. The operating programme is a basic strategic document of financial and technical support for specific areas such as transportation, science and education, employment or environment. It can also focus on cohesion regions such as North-West, Moravia-Silesia, or Central Bohemia.

The Czech Republic has negotiated 26 operating programmes for current programme period of 2007-2013. More detailed information about these programmes can be found in the Table 2 on the next page.

Table 2: Operating programmes in the 2007-2013 budget period

Source: MMR ČR, ODBOR EVROPSKÝCH FONDŮ –MINISTRY FOR REGIONAL DEVELOPMENT OF THE CZECH REPUBLIC, DEPARTMENT OF EUROPEAN FUNDS: Abeceda fondů Evropské unie 2007 – 2013, Naviga 4 s.r.o., Prague 2, 2007, page 9

Operating programmes for 2007-2013		Funds for the European Union	Funds for the Czech Republic
Thematic OP	OP Transport	EUR 283 billion 81.54%	EUR 21 271.1 million 79.5%
	OP Environment		
	OP Enterprise and Innovation		
	OP Research and Development for Innovations		
	OP Human Resources and Employment		
	OP Education		
	Integrated OP		
	OP Technical Assistance		
Regional OP (ROP)	ROP North-West	EUR 4659 million 1.5%	
	ROP Moravia-Silesia		
	ROP South-East		
	ROP North-East		
	ROP Central Moravia		
	ROP South-West		
	ROP Central Bohemia		
OP - Prague	OP Prague - Competitiveness	EUR 55 billion	EUR 372.4 million
	OP Prague - Adaptability	15.95%	1.4%
European Territorial Cooperation	OP CR-Bavaria	EUR 8.72 billion 2.52%	EUR 389 million 1.5%
	OP CR-Poland		
	OP CR-Austria		
	OP CR-Saxony		
	OP CR-Slovakia		
	OP Interregional Cooperation		
	OP Transnational Cooperation		
	Network OP ESPON 2013		
	Network OP INTERACT II		

The Table 2 shows all operating programmes from which the Czech Republic can use the resources. The fields in **green** represent the programmes that are designed for the convergence objective, the fields in **orange** - for the regional competitiveness and employment objective and, finally, the fields in **blue** - for the European territorial cooperation objective.

As you might have noticed, there are no programmes dealing with agriculture (except for the Operating Programme Environment). In the 2007-2013 programming period, the European Fund for Rural Development and European Agriculture Fund for Guarantee were divided into independent funds (in years 2000-2006, these two funds were part of the Structural Funds). In the current programming period, these funds specialize in fulfilling the objectives of **Common Agricultural Policy**.

3.3 Common Agricultural Policy

The majority of the European Union area consists of farmland and forests (approximately 60% of EU inhabitants live in rural areas covering 90% of EU) while agriculture has a strong impact on the prosperity of rural industries. Farmers act not only as producers of food, they also cultivate landscape, protect the environment or encourage tourism.

Common Agricultural Policy (CAP) was introduced to use the potential of farmers and land in a more efficient way, especially after accession of the new Member States in 2004. After accession of these states, number of farmers in the European Union grew from 6 to 7 million and the area of the European Union increased by 40%. However, current total production of the European Union is only 10-20% higher. Therefore, Common Agricultural Policy has become a very important instrument for using the EU resources effectively. It is a system representing more than 40% of the EU budget, EUR 49.8 billion. Common Agricultural Policy distributes payments for ensuring income stabilization of agriculture workers, environment protection, education of agricultural workers and modernization of capital used in production of agricultural commodities. It also supports market of agricultural commodities by minimum prices guarantees and quotas put on certain goods from states that do not belong to the European Union.

Following the reform of CAP in 2003, the policy focuses on supporting agriculture within a bi-pillar system. The first pillar concentrates on providing basic income support to farmers (called also direct payments subsidies) while it is financed by the **European Agriculture Fund for Guarantee**. The second pillar supports agriculture as provider of public goods in its environmental and rural functions, and rural areas in their development (Office for Official Publications of European Communities, 2006, page 6). The second pillar is financially supported by an instrument called the **European Agricultural Fund for Rural Development**.

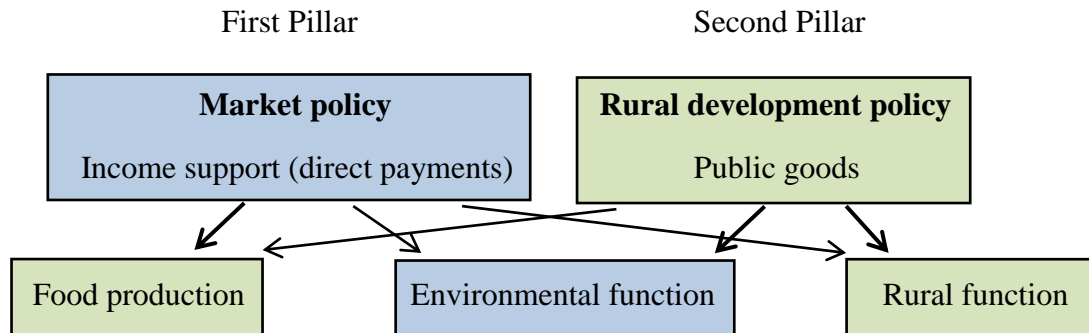
Since Common Agricultural Policy has a high amount of finance available, it provides resources to individuals, companies, or independent areas that:

- **Operate organic farming** (farmer preserves an unpolluted land and its fertility by no usage of chemical fertilizers, synthetic pesticides, herbicides etc. He/she also guarantees a high standard of animal welfare and avoids using antibiotics, GMO, and other additives).
- **Limit pollution of environment** (farmer agrees to adjust his/her production processes. He/she decreases number of animals per ha of land, plants new trees, bushes, and protects soil. In addition, the European Union supports capital innovations preventing air pollution).
- **Operate healthy food production** (farmer is responsible for producing quality food and agrees that his/her financial support might be limited (or cancelled) if he/she does not follow this rule).
- **Are disadvantaged** by lack of financial resources or carry out farming in the disadvantaged areas (e.g. in the mountains, dry areas, or the areas endangered by natural disasters). In addition, the European Union funds rural areas whose GDP is less than 75% of EU average and farmers who are not able to compete with the other ones.

These objectives of CAP are supported by those two pillars whose main functions are displayed by the Figure 1 on the next page.

Figure 1: Management of both pillars objectives

Source: EUROPEAN COMMUNITIES: The EU Rural Development Policy 2007-2013, Office for Official Publications of the European Communities, Luxembourg, 2006, ISBN 92-79-03690-4, page 5



The European Union pays a high attention to the quality of agricultural products. Not all resources allocated for Common Agricultural Policy are used only for subsidies. The European Union invests resources into monitoring of production procedures of particular goods. It controls whether hygienic and safety rules are followed while producing the goods. In addition, the European Union has established the rules for product labelling so that the origin of “bad products” can be found in a cheap and quick manner.

3.3.1 European Agricultural Fund for Guarantee

The fund provides direct payments that are annually provided to the land that farmers protect or, in certain cases, livestock they breed. Their objective is to ensure a stable income for farmers who can plant basically what they want as direct payments are provided to individuals who have at least 1 ha of farmland independently on what they plant on it. The main reason why the direct payments have been developed is the fact that the income of Czech, and basically of all EU farmers, are below the average and their business is usually not profitable, even though production of food is essential. To provide the payments to farmers, the European Union uses the system called **SAPS** (Single Area Payment Scheme).

3.3.1.1 Single Area Payment Scheme

The SAPS payments are mainly to cut the link between support and production. The main points to be mentioned about them are:

- All farmers may apply for them
- The single payment is an annual income payment to farmers
- Farmers may receive direct payments provided they maintain their land in good agricultural condition and comply with the standards set for public health, animal and plant health, the environment, and animal welfare (cross-compliance)
- Farmers who fail to comply with the requirements face reductions in direct payments
- Farmers are free to decide what they want to produce in response to demand without losing their entitlement to support
- All Member States should introduce the single payment scheme to farmers

The payments are available to be used by every Member State of the European Union (Office for Official Publications of the European Communities, 2006, page 9).

Since 2004, the new accession states have not been receiving direct payments in full. The payments had to be phased in during next 9 years. In 2004, the new accession states received only 25% of the amount that the other Members of the European Union obtained, in 2005, it rose to 30%, 35% in 2006, 40% in 2007 and then it started to rise 10% annually. We should receive the whole 100% amount in 2013 so the attractiveness of direct payments for Czech farmers increases every year till 2013. Direct payments are provided only for a farmer whose land is well managed and belongs to LPIS (Land Parcel Identification System). In addition, farmer who uses resources from the SAPS system has to meet the Cross Compliance requirements. It basically means that a respective operator has to protect soil, care about the environment, and look after welfare of animals and plants.

3.3.1.2 Top-up payments

The SAPS payments can be increased by so called **Top-up** payments. These financial resources are paid by the governments of new accession states and their purpose is to match the amount of resources the old Member States obtain through SAPS. The Czech Republic can fund agriculture by 30% - 100% of the Union rate in April 30, 2004. Contrary to the SAPS subsidies, “Top-ups” can be used not only for area funding, they can also “sponsor” livestock. The Table 3 represents all areas funded by the Top-up system in the Czech Republic.

Table 3: Top-up rates in the Czech Republic in 2010

TOP-UP 2010	Rate
Graph	514.10 CZK/ha
Hops	8 126.80 CZK/ha
Ruminants	1 310.10 CZK/large cattle unit
Suckler cows	2 119.60 CZK/ large cattle unit
Goats/Sheep	1 000.00 CZK/ large cattle unit
Potatoes for starch production (decoupling)	465.30 CZK/t
Potatoes for starch production (coupling)	1 631.20 CZK/t

3.3.2 European Fund for Rural Development

Czech agriculture is limited by plenty of Czech or European laws and regulations. The European agricultural funds were also developed to compensate this economic disadvantage. The main instrument contributing to rural development, maintenance and improvement of the environment and landscape, is called the **European Agricultural Fund for Rural Development (EAFRD)** while it represents the second pillar of CAP.

With the purpose of using the resources, the Czech Republic prepared a programme document called Rural Development Programme of the Czech Republic for the period of years 2007-2013. It consists of the measures to meet the objectives of development of rural areas of CZ (<http://eagri.cz/public/web/en/mze/subsidies/rural-development-programme-2007-2013/>, 30.9. 2010). The programme was approved on May 23, 2007 by the Committee for Rural Development of European Commission while the Czech Republic

was allocated EUR 2.8 billion from the European Agricultural Fund for Rural Development, and together with the resources from the state budget, the total amounts to approximately EUR 3.6 billion (<http://eagri.cz/public/web/en/mze/subsidies/rural-development-programme-2007-2013/>, 30.9.2010). The programme consists of 4 basic parts (groups of measures), each of them meeting some of its objectives.

- The **Axis 1** is mainly to improve the competitiveness of agricultural, food, and forestry sectors. The Axis 1 was allocated 22.53% from the EAFRD budget, representing approximately EUR 630.8 million. The Table 4 below shows the administration of applications in 2009. In the left hand column, you can see what priorities are financed by the First Axis of EAFRD. In addition, the table includes distribution of financial allocations and number of projects that have or have not been successful in using the resources.

Table 4: Administration of applications within the First Axis for the year 2009

Source: <http://www.szif.cz/irj/portal/anonymous/eafrd/osa1>, 23.9.2010

Axis 1		Number of projects	Their value (in EUR millions)	Success of projects (%)
Modernization of farms	Registered	1 103	116.21	90.48
	Approved	998	108.51	
Forestry investment	Registered	697	34.69	0
	Approved	0	0	
Adding value to agricultural and food products	Registered	267	39.08	89.13
	Approved	238	32.26	
Landscape adjustments	Registered	178	42.64	0
	Approved	0	0	
Education of unions	Registered	100	2.38	78.00
	Approved	78	1.93	
Introducing of young employers to farming	Registered	693	28.22	56.27
	Approved	390	15.92	

Early retirement of farmers	Registered	153	0.58	56.21
	Approved	86	0.43	
Use of consulting services	Registered	1 312	1.51	92.53
	Approved	1 214	1.37	
Total	Registered	4 503	265.32	66.71
	Approved	3004	160.43	

- The **Axis 2** objective is to increase biodiversity, protect soil and water, and mitigate climate change. The Axis 2 can use resources in the amount of EUR 1.55 billion, equalling 55.2% of resources from EAFRD. Therefore, the Second Axis is the most important one as it was allocated the highest amount of resources. The two strongest instruments to ensure fulfilment of the Second Axis objectives are called **Less Favoured Area Payments (LFA)** and **Agro-Environmental Measures (AEM)**. Since they are very important for satisfying the EU requirements, I am going to discuss them in more detail later in this chapter. The second axis also provides **SOT supports** that “promise” that a particular state buys all livestock, grain, and for feeding used products that farmers are unable to sell on EU market. In the Table 5, there is management of Axis 2 resources and number of successful projects requesting subsidies within the Second Axis. The table also shows which areas are to be funded by the Second Axis of EARFD (the left hand column).

Table 5: Administration of applications within the Second Axis for the year 2009

Source: <http://www.szif.cz/irj/portal/anonymous/eafrd/osa2>, 23.9.2010

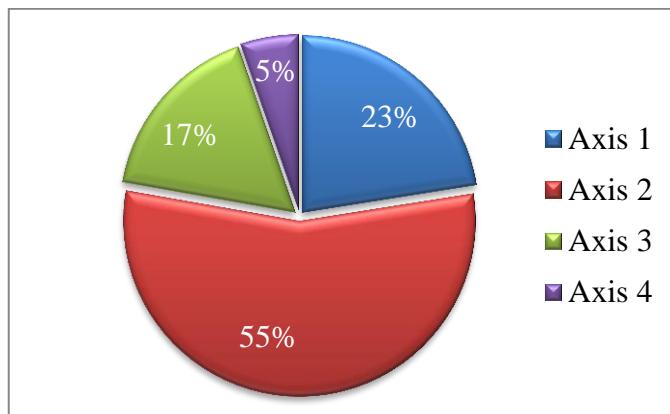
Axis 2		Number of projects	Their value (in EUR millions)	Success of projects (%)
Payments for natural disadvantage	Registered	11 549	102.63	90.91
	Approved	10 499	99.09	
Payments within the NATURA 2000 area	Registered	223	0.41	84.70
	Approved	189	0.38	
Agro-environmental measures	Registered	11 988	0.15	0
	Approved	0	0	

Graph improvement	Registered	755	1.62	34.17
	Approved	238	0.28	
NATURA 2000 payments in forests	Registered	11	0.06	0
	Approved	0	0	
Forestry-environmental payments	Registered	30	0.005	0
	Approved	0	0	
Recovery of forests after natural disasters	Registered	218	11.239	47.77
	Approved	104	4.78	
Total	Registered	24 774	116.12	44.60
	Approved	11 050	104.55	

- The **Axis 3** is to improve the quality of life in rural areas (support of education included) and to encourage the diversification of economic activities in such areas. Creation of jobs, support of renewable energy resources, or protection of national monuments belong to the main priorities. There is EUR 474.6 million available to finance the Axis 3 activities (16.95% of EAFRD).
- The **Axis 4**, as the last part of the Programme for Rural Development, was developed to help the residents of rural micro-regions (applying the principle “from bottom to top”) to work out their local development strategy and to support the projects concerning development of the region they live in, so called LEADER method (<http://eagri.cz/public/web/en/mze/subsidies/rural-development-programme-2007-2013/>, 30.6.2010). The LEADER seems to be a really efficient method of rural development as it connects more subjects requesting resources from the European Union. Active groups using LEADER contribute usually to development and recovery of rural areas and agriculture within them and care about nature and landscape. The Axis can provide more than 5% of EAFRD budget, representing approximately EUR 148.4 million.

The European Agricultural Fund for Rural Development provides EUR 2.8 billion for Czech farmers, agricultural entrepreneurs, non-profit-making organizations, land offices, or individuals meeting requirements set by a particular Programme for Rural Development. The Graph 2 shows how these funds are distributed among all four EAFRD axes.

Graph 2: Distribution of EUR 2.8 billion among four axes of EAFRD



As noted above, the Second Axis is the “most powerful” one. Since there is the highest amount of resources allocated for it, it has more instruments at its disposal. The first one is called **LFA payments** while the second one is known under the abbreviation of **AEM**.

3.3.3 Less Favoured Areas Payments

Since the Second EAFRD Axis boasts the highest budget it contains some other instruments helping to fulfil its objectives. The first one is called the Less Favoured Areas (LFA) Payments and was developed to support “the areas with bad conditions for farming” or simply “less-favoured areas”. These areas differ in every Member State. For example, in Ireland, less-favoured areas are represented by rugged, usually rocky areas in the mountains where almost no farming is possible. In the Czech Republic, as less-favoured areas is classified 50% of the overall utilized agricultural area while 14.6% is classified as mountainous areas, 29.6% as other favoured areas and 5.8% is classified as areas with specific handicaps. The more details about these areas are shown below.

- Mountainous areas’ height above sea level has to be greater than or equal to 600 m or greater than 500 metres with slope exceeding 15% on an area of more than 50% of the total area of land.
- Other less favoured areas are those where population density is less than 75 inhabitants per km² or share of workers in agriculture and forestry is greater than 8%.

- Areas with specific handicaps include territories with an average soil yield less than 80% of the average of the Czech Republic or territories with a slope above 12.3% on an area of greater than 50% of the area of farmland with the grassing greater than 50% of the farmland.

The European Union funds these areas for many reasons. If no subsidies were provided, almost no farmers would operate their businesses in these handicapped areas. It would bring a high risk of land abandonment and thus increasing the risk of biodiversity loss, desertification or erosion (European Communities, 2008).

The funding is carried out in the form of annual payments provided by the European Union for the farmers, forest managers, and other rural area operators managing farmland in LFA and undertaking to pursue their activities for a period of 5 years (European Communities, 2008). The amount of compensations they annually receive relates to a natural handicap of the area they operate.

3.3.4 Agro-Environment Measures

The second largest instrument of the Second Axis of EARFD is called the Agro-Environmental Measures (AEM). As in the case of LFA, every farmer or another land user can use resources from the AEM supports annually if he/she is going to operate his/her business for a period of at least five years. If he/she wants to be supported, he/she has to sign an agro-environmental commitment (the commitment is voluntary and if the farmer does not want to follow the EU requirements in order to use the resources, he/she does not need to sign it). Contrary to the LFA payments, these subsidies can be used by farmers operating their businesses wherever located in the European Union.

Every signing of agro-environmental commitment is subject to certain requirements. For example, a farmer can promise he/she will protect biodiversity in the next 5 years by creating buffer areas. These areas will probably reduce his/her profitability; however, the EU will compensate the farmer's loss the buffer areas will have caused in the next five years. This agreement becomes valid since farmer signs the commitment and the payments that he/she is going to receive might be reduced (or cancelled) whenever the European Union finds out the farmer does not follow all set requirements.

The activities supported by AEM in the current programming period, number of funding beneficiaries, and the amount of resources they receive every year is shown in the Table 6 where “A” represents Organic agriculture and Integrated production, “B” Grassland, and “C” Arable land payments.

Table 6: Allocation of AEM supports for the 6 years period

Source: http://eagri.cz/public/web/file/61102/prv_zmeny_cerven2010_web.pdf, 10.3.2011

AEM supports	Year	Number of applications	Area (Ha)	CZK
A1 Organic agriculture	2004	1 025	232 000	311 000 000
	2005	1 052	224 000	305 000 000
	2006	1 065	215 055	299 706 000
	2007	602	120 923	165 229 000
	2008	581	118 135	156 293 000
A2 Integrated production	2004	x	x	x
	2005	341	17 000	174 000 000
	2006	336	15 109	161 094 000
	2007	108	5 011	50 879 000
	2008	101	4 955	50 300 000
B Grassland maintenance	2004	11 890	723 000	1 910 000 000
	2005	12 538	713 000	1 886 000 000
	2006	12 796	698 151	1 844 000 000
	2007	10 660	557 637	1 450 000 000
	2008	10 391	544 469	1 415 000 000
B4 Permanently waterlogged and peat meadows	2004	57	184	2 237 411
	2005	61	159	1 930 000
	2006	59	199	2 408 000
	2007	41	120	1 463 000
	2008	43	121	1 475 000
B5 Bird habitats on grassland - nesting	2004	133	6 282	32 645 562
	2005	132	6 181	32 000 000
	2006	143	5 996	31 176 000
	2007	115	5 146	26 739 000
	2008	114	5 079	26 375 000
C1 Conversion of arable land into permanent pastures	2004	366	5 756	41 836 577
	2005	814	15 000	110 000 000
	2006	1 356	32 560	236 590 000
	2007	1 649	33 832	245 830 000
	2008	1 648	33 810	245 668 000
C2 Grasslands on steep slopes	2004	3	13	123 003
	2005	12	53	500 000
	2006	13	75	703 752
	2007	15	89	838 366
	2008	15	89	836 290
C3 Planting of buffer	2004	2 995	198 248	907 979 000
	2005	2 963	192 000	880 000 000

<i>crops</i>	2006	3 144	199 719	914 719 000
	2007	3 169	202 317	926 611 000
	2008	3 146	201 109	921 079 000
<i>C6 Buffer areas</i>	2004	42	275	2 928 671
	2005	97	584	6 000 000
	2006	154	1 318	14 009 000
	2007	137	1 191	12 664 000
	2008	136	2 289	12 629 000
<i>C7 Crop rotation in protected areas of caves</i>	2004	1	48	26 060
	2005	1	48	26 060
	2006	1	48	26 060
	2007	1	48	26 109
	2008	1	48	26 109

These are the final amounts of resources allocated for AEM supports. The first allocation was made for the period 2004-2008 as the years 2004-2006 belonged to the former programming period, and in the years 2007 and 2008, these programmes were falling off until their complete cancellation. The second part of the allocation represents the payments allocated for the current period 2007-2013. These supports are not included in the table above as the table would be much larger.

3.4 Use of farmland in the Czech Republic

In the Czech Republic, there are approximately 3 600 million hectares of farmland that can be divided into five agricultural production areas. Each area has its specific production conditions including soil and climatic conditions such as altitude, mean temperatures, mean volume of rainfall, soil fertility, or afforestation. The area division does not relate to cities, towns, villages, or other regional borders.

After the year 1996, these conditions were revised while each area got its specific definition including the name that was given after the most frequently grown crop in such particular area. Hence, the area which boasts the best conditions for growing is named “Grain Area”, the “second best” is called “Sugar-beet Area” while it continues with Grain, Potato, and Fodder Areas.

This division was introduced mainly for the purpose of agricultural statistics to compare particular farmers and analysis of their production and econometric conditions (http://www.agrokrom.cz/texty/metodiky/Ram_metod/VYROBNI_OBLASTI.PDF, 5.1.2011). It is also very important for distribution of EU funds as the Czech Republic

entered the European Union. The characteristic of each area is shown in the Table 7 below.

Table 7: Diversification of land in the Czech Republic

Source: http://www.agrokrom.cz/texty/metodiky/Ram_metod/RAM_METOD_CHAR_VYROB_OBLASTI.pdf, 5.1.2011)

Agricultural production area	Corn Area	Sugar-beet Area	Grain Area	Potato Area	Fodder Area
Land relief	Mainly flat	Flat and slightly undulated	Undulated and slightly steep	Undulated and strongly steep	Strongly steep and hilly
Altitude	>250m	250-350m	300-600m	400-650m	>700m
Climatic region	Very warm and dry	Warm and slightly wet	Warm and wet	Slightly cold and wet	Cold and wet
Mean annual temperature	9/10°C	8-9°C	5-8.5°C	5-8°C	0-5°C
Mean annual rainfalls	500-600 mm	500-650mm	550-700mm	550-900mm	>700mm
Percentage of arable land	>80%	>80%	>60%	>60%	<50%
Main crops	Grapes, sugar-beet, grapes, barley and wheat	Sugar-beet, wheat, barley, root vegetable, and hops	Grains, oilseed rape and sugar-beet	Potatoes, sugar-beet, forage crops, sugar-beet and flax	Fodders, potatoes, and then pastures and meadows
Representation	0.8%	24.3%	40.5%	18.5%	10%

In my thesis, I simplified this diversification. I “connected” the Corn and Sugar-beet Areas since the first one represents only 0.8% of Czech farmland and the difference between annual rainfall, altitude, soil relief, and other factors is insignificant. I found the Grain Area very important as it represents more than 40% of Czech farmland but I also connected the Potato and Fodder Areas. The soil relief and climatic conditions of the last two areas are similar and they together represent approximately the same amount of hectares as the first two areas. In addition, many economic and agricultural subjects use

this simplified “three-area model”. For instance, majority of the data that is available from the Czech Institute of Agricultural Economics concerns the “three-area system”. In my thesis, I am going to call these areas **good condition areas** (lowlands), **worse condition areas** (highlands) and **bad condition areas** (mountains).

3.5 Macroeconomic and other factors affecting agriculture

The impact of European funds on Czech agriculture is different every year. When we became Member State, we logically became a part of the European Union that made us more economically dependent on the other European countries. Therefore, the resources that we receive one year may be much more (or much less) valuable than the “same amount” which Czech farmers receive another year. In addition, agriculture is also the only industry which is directly affected by the other “non-economic” factors such as mean temperatures, mean volume of rainfalls, and other natural factors.

3.5.1 Gross Domestic Product

Gross Domestic Product influences mainly the purchasing power of inhabitants of a particular country. When GDP is growing Czech consumer is willing to spend more money on the goods which, for instance, farmers produce. It consequently increases profit of farmers.

After the accession of the Czech Republic, our economic growth rapidly accelerated. It reached its peak in the year 2008 and started falling in the following year. The main reason was a global economic recession. Therefore, from the economic point of view, the year 2009 was the worst year in the existence of the independent Czech Republic. It strongly affected the purchasing power of our inhabitants and, therefore, since the year 2008 was economically the best for Czech farmers, they experienced a huge decrease in profits (or even losses) in the year 2009.

3.5.2 Prices of agricultural products

Another factor mostly associated with the growth of GDP is prices of our agricultural products. When the demand for goods goes up, the price goes up too and vice versa. If the product which farmers offer becomes more “desired” and they increase the price of it, it makes them more profitable (since they sell most of their products). The

whole European Union experienced an increase in demand since the Asian developing countries such as India or China started to be interested in (not only) European products. It drove the prices up mainly in 2008. The prices of agricultural goods were also influenced by GDP and the year 2008 was thus “the best” year followed by the worst one. However, the prices were also affected by the yield of farmers that was influenced mainly by natural factors (see the Chapter 3.5.4).

3.5.3 Exchange rate

The relationship of Czech crown to EURO is also very important. When Czech crown revaluates it has a large impact on Czech agriculture. Not only do imports become cheaper and exports more expensive, it also affects the amount of money which the Czech Republic receives from the European Union.

If we compare the periods 2007-2009 with the years 2001-2003, we realise that Czech crown revaluated at the rate of 22%. Since it has been revaluating from the year 2001, Czech farmers were using gradually less volume of resources from the European Union. In addition, they were receiving lower amount of money when they exported their products. In the year 2009, Czech crown started to slowly devalue. Even though it was good for Czech farmers, it did not balance the losses they experienced as a consequence of lower prices and decreased GDP. In my thesis, I am listing the European money in EUR when referring to the sum which the European Union provides. However, since the money “arrives” in the Czech Republic and farmers can use it, I calculate in Czech crowns in order to eliminate the impact of exchange rate and a possible confusion.

3.5.4 Natural conditions

The development of Czech agriculture was also affected by natural conditions. The years 2004-2009 happened to be above the average if concerns temperature. Rainfalls were usually higher than the average, too. However, they were very unstable and the Czech Republic experienced unusual weather extremes such as heavy rains, floods, or droughts. According to these climatic conditions, the worst year for farmers happened to be the year 2006 when huge rainfalls and floods influenced mainly the quality of grains and oilseed rape (lowering the prices and decreasing the profitability of farmers). Farmers experienced the most favourable weather in the year 2004 and, again, in the year 2008.

4. European funds and their management in the Czech Republic

4.1 Management of CAP financial instruments in reality

Graph in the Czech Republic is owned by a variety, usually private subjects. Every farmer can plant or breed whatever he/she wants so that different farmers receive different subsidies from the European Union (except for direct payments representing the same amount of money per hectare every year). Some farmers receive LFA and AEM supports while the others have to “get by with” the direct payments. The “formula” stating how much money an individual receives and why it differs from farmer to farmer is not the same for plant and livestock farms. I have examined both types. I would like to commence with the plant farms as the calculation of costs and profits is much easier.

4.1.1 Plant production

In the Czech Republic, there is a huge variety of crops that farmers can plant. The most frequent ones are winter wheat, winter barley, spring barley, corn, sugar beet, or oilseed rape. Some of them occur only in the areas with good conditions for planting but the majority of crops are to be found “almost everywhere” in our country. The Table 8 shows the distribution of the most common crops in the Czech Republic.

Table 8: The occurrence of 10 most common crops in the Czech Republic

Source: MZE ČR –MINISTRY OF AGRICULTURE OF THE CZECH REPUBLIC: Zpráva o stavu zemědělství za rok 2009, Czech Ministry of Agriculture, Prague 1, 2010, ISBN 978-80-7084-940-8, page 168

	Good conditions	Worse conditions	Bad conditions (mountains)
Winter Wheat	34.09%	22.29%	15.16%
Winter Barley	2.41%	4.89%	4.47%
Spring Barley	16.32%	10.94%	8.57%
Corn	7.76%	1.42%	0.00%
Sugar Beet	4.64%	0.27%	0.00%
Oilseed Rape	10.86%	12.83%	9.16%
Perennial fodder	5.07%	5.61%	4.82%
Graph for silage	4.91%	8.51%	7.16%
Meadows	3.63%	18.38%	31.47%
Pastures	1.02%	4.66%	10.20%
All	90.71%	89.80%	91.01%

As we can see in the table above, the 8 most common crops together with meadows and pastures form around 90% of all plant production in the Czech Republic.

Practically, every crop in the world needs a special care. The costs “from seed to harvest” necessary to ensure quality and mainly profitability of crop planting as well as market prices of processed crops differ. In addition, the yield of farmer would not be the same in different areas, even if he used the same techniques. Therefore, to ensure equal conditions for all farmers, the EU subsidies are available.

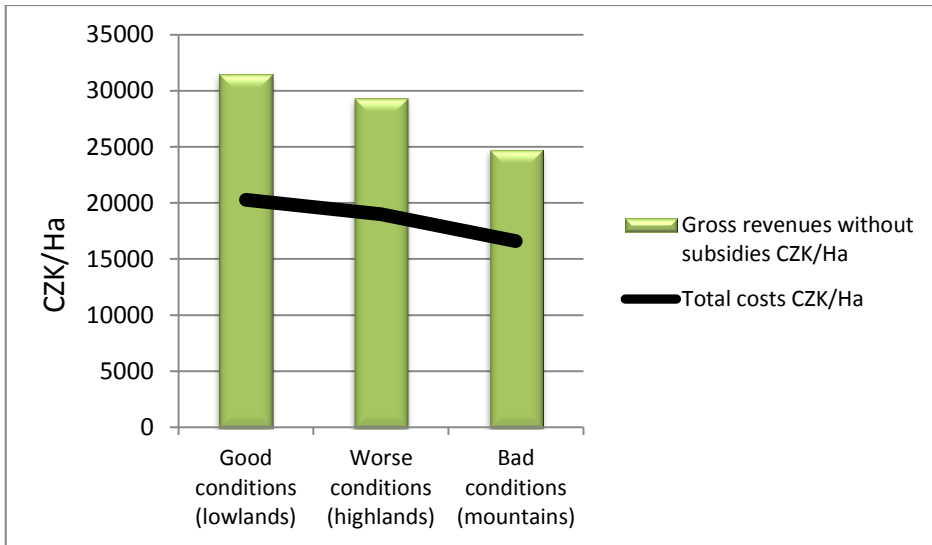
Table 9: The difference between costs and profitability of two crops in 2008

Source: IVAN FOLTÝN, IDA ZEDNÍČKOVÁ: Profitability of agricultural commodities: economic-mathematical predictions, ÚZEI - Czech Institute for Agricultural Economics and Information, Prague 2, 2010, ISBN: 978-80-86671-80-2, Attached CD-ROM

winter wheat	Good conditions	Worse conditions	Bad conditions (mountains)
Total costs CZK/ha	20264	18993	16589
Yield t/ha	6.6	6.15	5.19
Market price CZK/t	4773	4773	4773
Gross profit CZK/ha	31 501. 80	29 353.95	24 771.87
Profitability	55.46%	54.55%	49.33%
spring barley	Good conditions	Worse conditions	Bad conditions (mountains)
Total costs CZK/ha	17375	17378	14772
Yield t/ha	5.85	4.59	3.8
Market price CZK/t	4928	4928	4928
Gross profits CZK/ha	28 828.80	22 619.52	18 726.40
Profitability	65.92%	30.16%	26.77%

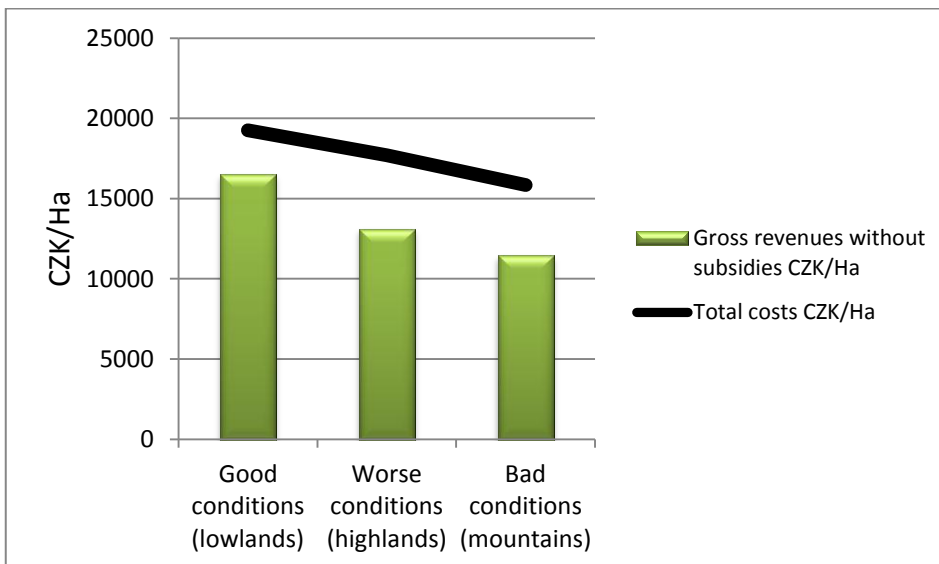
As we can see in the Table 9, profitability of winter wheat and spring barley differed in the year 2008. In the Graph 3, you can see annual profit of an average winter wheat producer (the difference between the black line and the top of each column).

Graph 3: Cost management of winter wheat in 2008



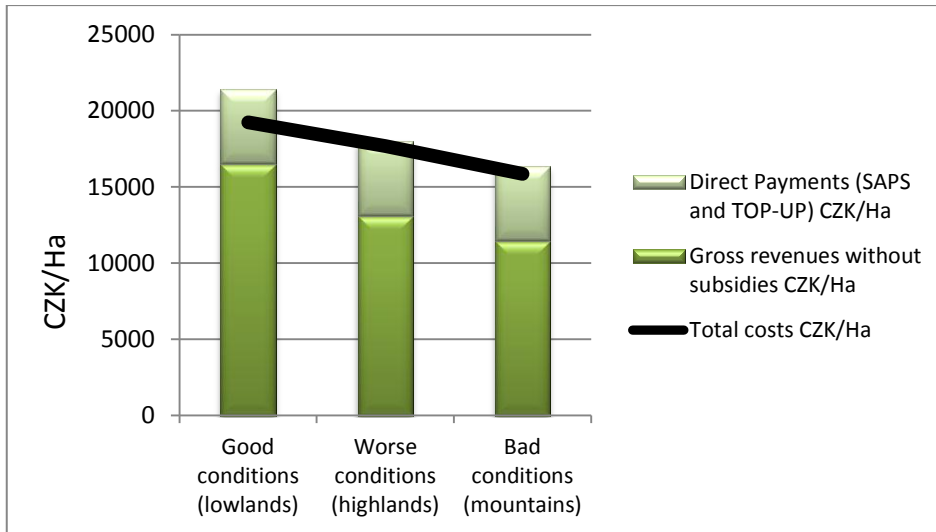
The graph above shows a relatively high profit of winter wheat producers in 2008. However, it does not happen often that farmer earns so that much money per ha a year. For instance, in 2009, when the majority of prices of grains went down, many farmers ended up with losses. The Graph 4 is a typical example of a “bad” year of barley producer.

Graph 4: Cost management of spring barley in 2009



This farmer would probably go out of business if he ended up like this. However, it is not such a big problem since the European Union is willing to support him. The farmer is able to receive SAPS and Top-up payments equalling 4 894 CZK per hectare in 2009 (Ivan Foltýn and Ida Zedníčková, 2010, attached CD-ROM). The situation with subsidies can be found in the Graph 5.

Graph 5: Cost management of spring barley in 2009 with all subsidies



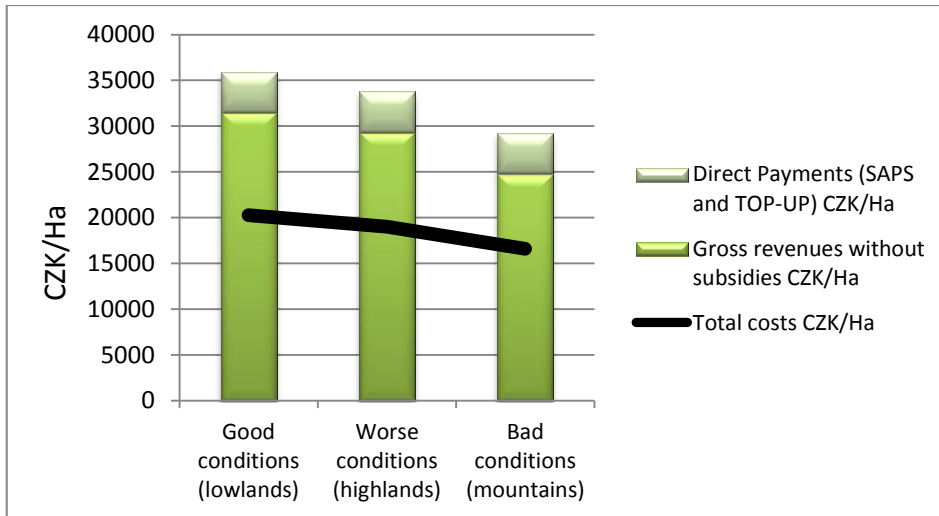
In reality, average farmer operating his/her business in “good” areas ended up with the profit in the amount of approximately 2 168 CZK per hectare. The remaining farmers earned just few hundreds of Czech crowns per hectare.

4.1.1.1 Which areas receive subsidies and which do not?

The European Union specifies the requirements the applicants for funding have to meet in order to receive payments. The direct payments list such requirements as well. However, in practise, every farmer meets these requirements as his/her salary is below the average of the European Union (and the Czech Republic as well). Therefore, every farmer receives the same amount of money no matter what crop he/she plants. In reality, for some farmers, these subsidies represent more a “gift” than necessary help.

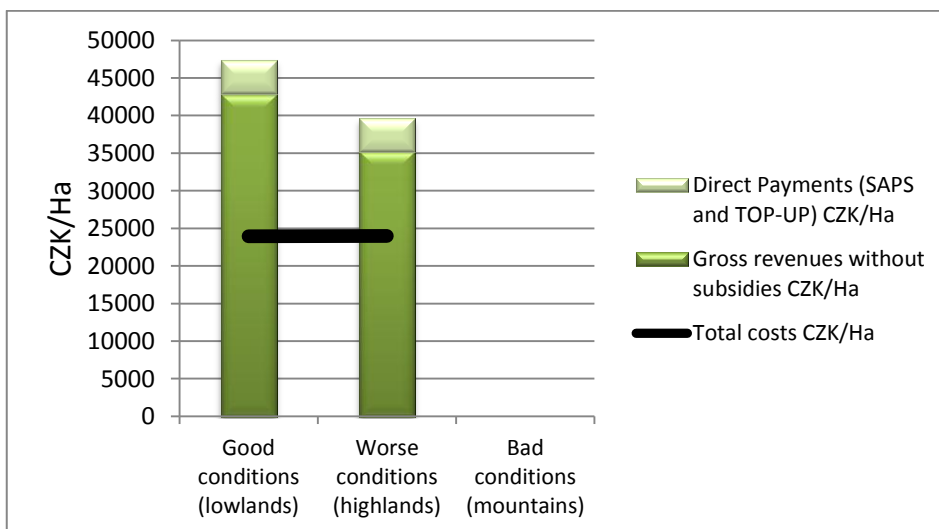
So what about farmers who planted Winter Wheat in 2008? Why do not they receive subsidies, too? They had a profit but the direct payments are to support every hectare of farmland, are not they? The truth is that the farmers who had high profits receive subsidies too. The amount of subsidies paid by hectare was 4 414 CZK in 2008 while it even increased the profit of farmer in that year.

Graph 6: Cost management of winter wheat in 2008 with all subsidies



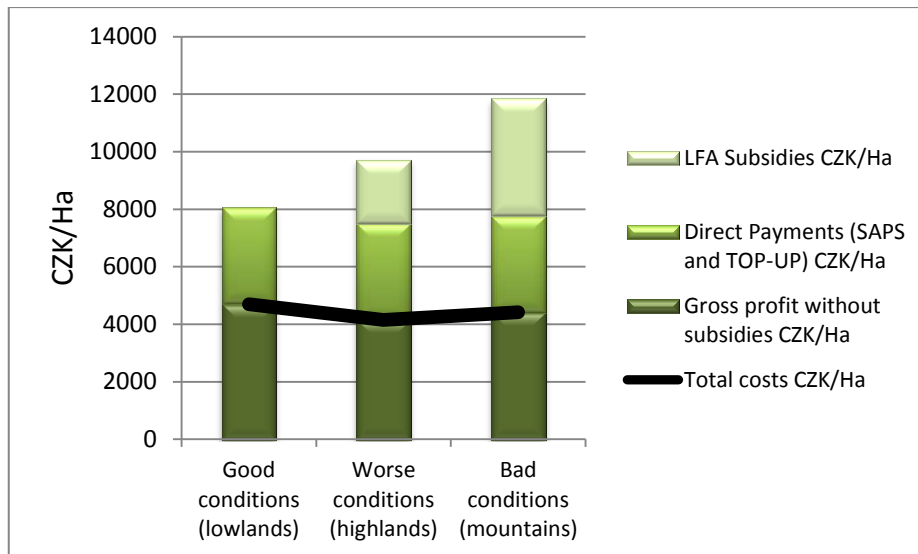
Profitability of winter wheat producers rose approximately by 25% in the first two areas and by 30% in the mountainous areas. Sometimes, farmers receive even “bigger gift”. A typical example is the corn production in 2008 that can be seen in the Graph 7 (as corn is not planted in the mountainous areas for crop production, the last column is blank).

Graph 7: Cost management of corn in 2008 with all subsidies



Production of crops is equally supported “only” by direct payments. However, meadows and pastures receive, except for these direct payments, LFA subsidies, too. The Graph 8 describes the situation of meadows. As the yield from meadows and pastures is not marketed immediately and it is used for, for instance, feeding cattle, their product has no price at that moment and they are considered an “intermediate product”. Their profitability is thus 0% whereas the yield has opportunity cost equalling all other costs as farmer is going to use it for producing other goods, for example, beef.

Graph 8: Cost management of meadows with all subsidies (2005 to 2009 average)



4.1.1.2 Distribution of Agro-environmental Measures supports

Contrary to SAPS, Top-up, and LFA subsidies, AEM supports do not “sponsor” farmers for the same amount per hectare. In addition, every farmer receives a different amount of money. Therefore, the calculation of subsidy that the applicants receive is more complicated. However, I have calculated the average amount that the farmers received in the years 2005 to 2009. For example, in 2009, the farmers who were eligible to use the AEM supports shared the following values:

Table 10: Distribution of AEM supports in 2009

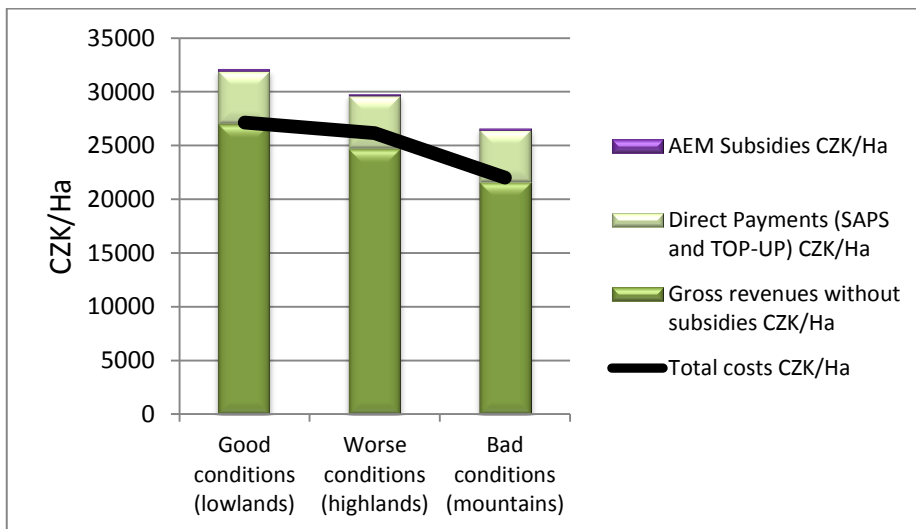
	Supported area (ha)	Money provided (CZK)
Arable land	110 287.76	454 417 625.63
Grassland	732 134.56	2 078 388 643.97
Organic farming	384 451.92	1 264 068 004.86

To satisfy our model listed in the previous chapter, I had to allocate resources from organic farming to arable land and grassland. According to the report “Zpráva o stavu zemědělství ČR za rok 2009 (Situation of Czech Agriculture in 2009)”, organic farming is carried out on grassland in the percentage of approximately 90 while arable land boasts 10% of organic farming. Therefore, in 2009, approximately 1 137 661 204 CZK that were provided for organic farming was received by farmers who carry out their businesses on grassland. The farmers who worked on arable land received 1 264 068 004 CZK more than

it is listed in the Table 8.

In 2009, there was 2 548 029 hectares of arable land and 932 831 ha of grassland (the Czech Ministry of Agriculture, 2009). If we share the subsidies paid on every single hectare (so the very average that every farmer “received” in that year is calculated), we can use it in our model.

Graph 9: Cost management of oilseed rape with direct payments and AEM supports



The AEM supports do not seem to be “crucial” for farmers as they receive much smaller amount of them than they can receive via direct payments (in 2009, the average amount of money every farmer “receives” from AEM was approximately 228 CZK per hectare of arable land following my calculation). However, grassland owners/renters received much more from AEM (approximately 3 447 CZK per hectare in the same year). They are also important for farmers who carry out organic farming and other agricultural producers maintaining mainly extensive farming in the mountains.

Nevertheless, the amounts of AEM supports that I calculated are only rough and imprecise as they are based on the expectation that every farmer used the resources. Furthermore, farmers are unable to use the funds “for free”. They have to follow strict regulations and these “obstacles” reduce their profits. Even though I used the data (total costs, yields, market prices) containing all expenses, and other difficulties and “AEM limits” were already included in the model, the numbers might not be 100% precise. There is no evidence how much money a particular farmer lost after enforcing the AEM

restrictions. Therefore, nobody can certainly define how much money a particular farmer received after subtracting the decrease of profit from the amount received from AEM supports. However, the AEM columns in the previous graph and following ones should provide us with a picture how these payments affect the profits and management of particular farms.

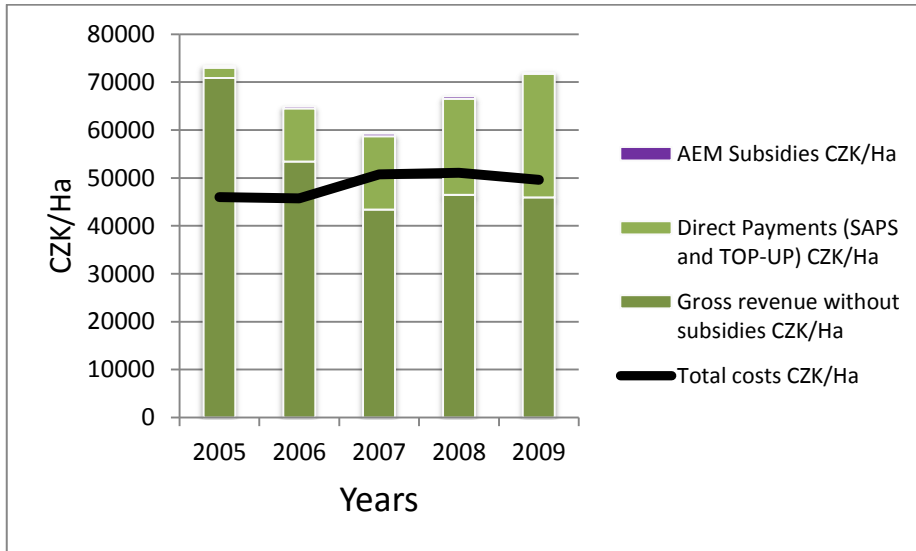
4.1.1.3 Plant farms during past 5 years

The Chapter 4.1.1 showed us the management of Direct Payments, LFA, and AEM supports in particular years. The amounts that farmers receive differ every single year. The SAPS payments started to fund our farmers in 2004. They have been increasing in the past 6 years while they are going to grow till 2013. The Top-up payments are to “balance” the SAPS subsidies during these years. Financial supports from the LFA fund changes a bit every year and their amount strongly depends on the exchange rates between Euro and Czech crown while the amount of EAM payments provided depends mainly on Czech farmers and their capability to meet all EU requirements.

Nevertheless, the subsidies that Czech farmers receive are not the only factor affecting their profit. The other (and sometimes much stronger) important elements are weather, market price of the product that farmers produce (derived from supply and demand for respective products), quotas or other restrictions or supports. We are not able to predict the influence or amount of these factors and, therefore, the subsidies might have been provided very inefficiently last year but their management might be brilliant this year.

For the previous examples, I chose the most “extreme” situations. I used the examples from 2008 as in that year, the yield of Czech farmers was, in the majority of cases, quite good, and the lack of agricultural products from, for instance, Russia, experiencing a draught and fire problem, made the prices of food in the European Union even increasing (it reached the peak of more than last 10 years). Therefore, the majority of Czech farmers experienced high profits in 2008. However, I prepared a graph displaying profits (or losses) that the average sugar beet producer had to deal with during past five years. As we can see in the Graph 10, farmers producing Sugar Beet never ended up with loss as this was compensated by the European funds.

Graph 10: Situation of Czech sugar beet producers during past 5 years



Sugar beet producers have been receiving gradually increasing Top-up payments from 2005. On average, it made them very “successful businessmen” in 2007 and following years as they experienced high profits, despite of ending up with loss in the situation with no money from the European Union.

We could look at graphs representing this situation for every commodity. No commodity would be the same. Nevertheless, even if it might be interesting, I am going to “move forward” as the purpose of this chapter is fulfilled. It contains all elements I was discussing earlier in this chapter and it is quite obvious that business situation of every farmer changes every single year.

4.1.2 Livestock production

Livestock production represents an important branch of Czech agriculture. I created cost managements of dairy cows, heifers, pregnant heifers, calves within 6 year-old range, bulls, and suckler cows. The livestock is divided into these 6 types because each kind receives a different amount of subsidies. The reason why they receive financial support is mainly because they usually live most of the year outside on pastures. The amount of money that every animal receives is calculated by the amount of grass they eat on pastures per year (they basically “eat the subsidies”) plus the amount the farmer receives per animal

head (only suckler cows, goats, and sheep breeders can draw subsidies “per animal head”). The formula of calculation of the subsidies for Livestock is as follows:

$$LCU + q * y * (Sub_{SAPS} + Sub_{Top-up} + Sub_{LFA}) = Sub_{all}$$

Where [LCU] stands for the amount of money paid per “large cattle unit” in CZK per year, [q] represents the quantity of grass the particular animal eats (tonnes per year), [y] is yield of pasture where the animal lives (tonne per year) and [Sub] variables stands for particular subsidies that are supporting every tonne of pastures respectively the amount of subsidies that every animal receives “per head”. Grown animals are considered to be 1 LCU while calves within six years of age are worth 0.3 LCU. Suckler cows draw the additional subsidies that are to support beef production from Top-up payments. These subsidies have to be added to the left side of the equation.

We know the numbers of animals from statistical data (see the Table 11 below). Following this calculation, we know how much money the particular farmer receives per hectare.

Table 11: Distribution of livestock in the Czech Republic

Source: MZE ČR –MINISTRY OF AGRICULTURE OF THE CZECH REPUBLIC: Zpráva o stavu zemědělství za rok 2009, Czech Ministry of Agriculture, Prague 1, 2010, ISBN 978-80-7084-940-8, page 192

	Good conditions	Worse conditions	Bad conditions
Dairy cows	11.49	20.60	22.76
Calves younger than 6 months	5.05	8.17	10.35
Heifers	2.51	5.02	6.69
Pregnant heifers	4.25	8.01	9.33
Bulls	2.98	6.51	5.76
Suckler cows	0.17	1.97	4.08
All	26.45	50.28	58.97

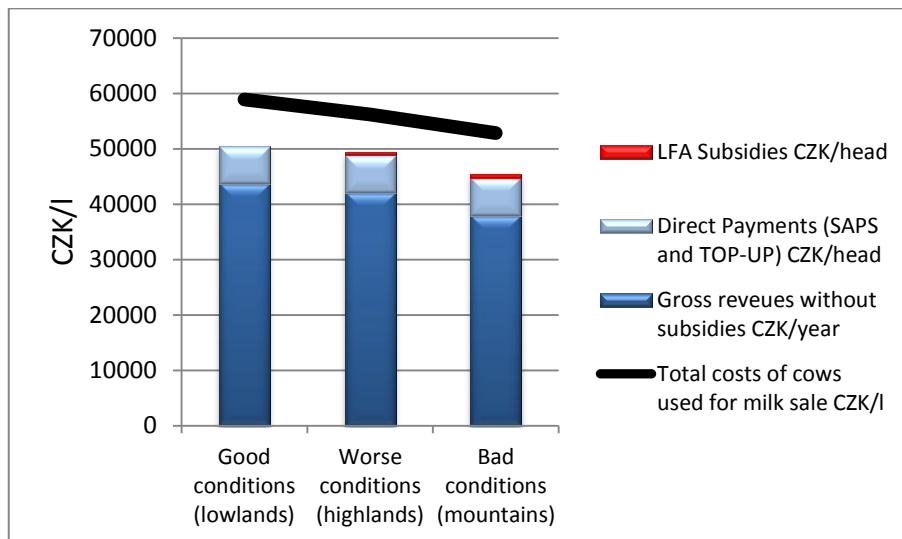
The other livestock that could be considered in my model are pigs, broilers, or chickens. However, these animals usually live indoors so their breeders are unable to get “subsidies for their feed”. In addition, the European Union does not support these animals by payments “per head” and hence, I did not include them in my model (they practically do

not receive any payments apart from financial supports for, for instance, renovation of stables etc. These subsidies are used immediately and do not affect my model).

4.1.2.1 Situation of subsidies for livestock breeders

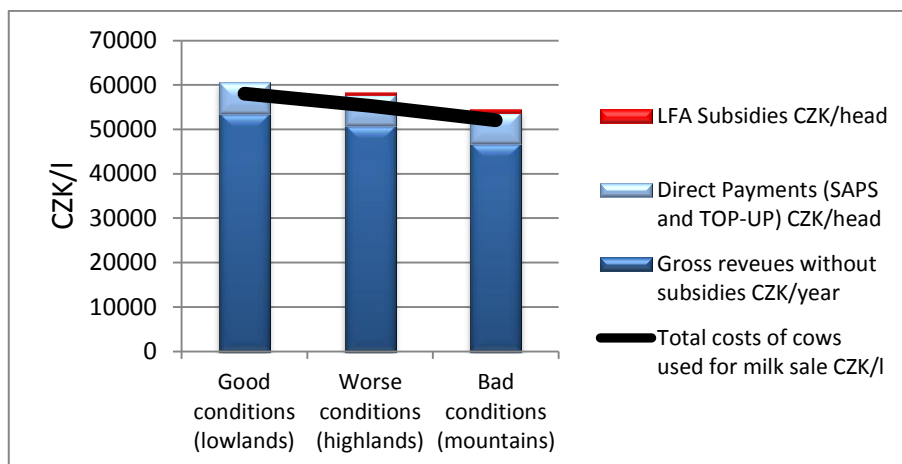
Livestock production is not so “that well supported” as plant production is. This is one of the reasons why many farmers convert from a combined production to plant production. Milk is a good example. The farmers who keep dairy cows came across various problems making them ending up with loss (not only) in 2009. As the price of milk in the European Union was so low that Czech farmers were not able to “generate” revenues that would have covered the total costs, even the subsidies from the Union could not help them.

Graph 11: Cost management of dairy cows in 2009



The year 2009 made many Czech milk producers going bankrupt. They ended up with loss despite of getting funding from the European Union. This is the reason why Czech dairy cow breeders raised a protest against the prices of milk on the Czech market in the last two years. It is a mistake to blame Czech milk producers for not being able to compete with the European market. The prices of milk went so low in that year that almost no milk producer was able to make profits on milk sale. Nevertheless, milk has not been unprofitable since we entered the European Union. The year 2009 was the worst for milk producers and their profitability during the past five years is shown below.

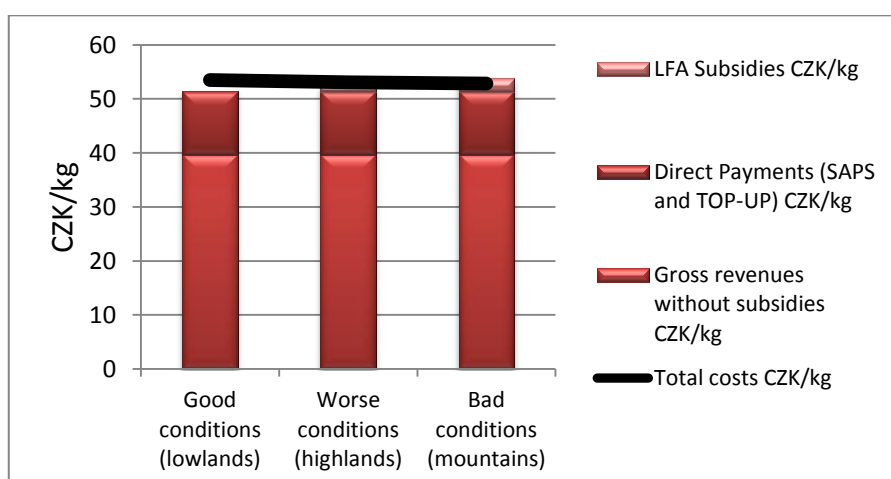
Graph 12: Cost management of dairy cows in the years 2005 - 2009



Even though the five year average does not show that dairy cow breeders do not make profits, their situation is not good and it is getting worse every year. However, nobody knows what the price of milk is going to be in the next years so it is difficult to correctly predict their future situation.

Production of milk is not “the least profitable business” that Czech farmers do. Except for 2005 and 2006, bull breeders dealt with loss every year since the EU accession.

Graph 13: Cost management of bull production during the years 2005–2009

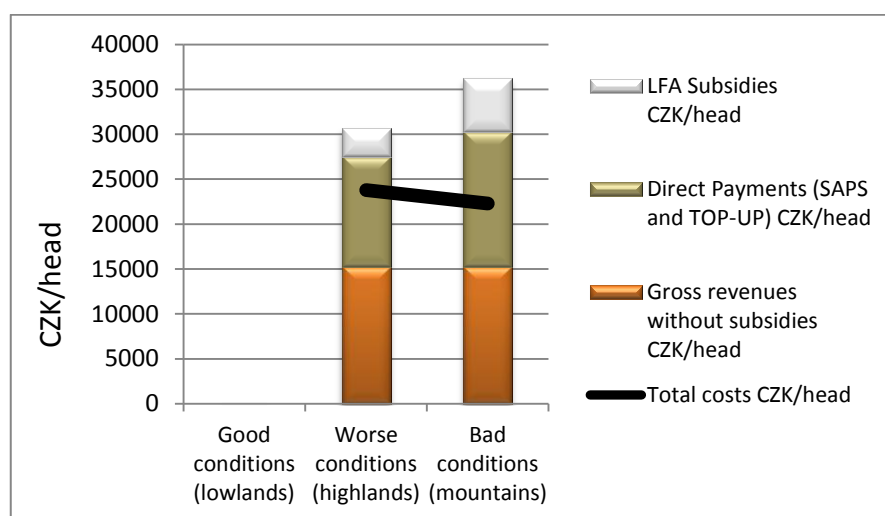


As we can see above, these farmers have not been profiting at all in the first two areas. The worst conditions have not been profitable either even though the farmers did not end up with loss. However, the farmers keeping bulls possess them also for maintaining

reproduction; hence, this loss is partially balanced by breeding cows. Nevertheless, this instable income is an important factor making livestock breeders to convert to plant production.

As to beef production, suckler cow producers depend on subsidies from the European Union more than others as they receive relatively high Top-up payments per cow. They would quit their business immediately without the payments.

Graph 14: Cost management of suckler cow production in the years 2005-2009



Even though suckler cows are not unprofitable during the past five years, Livestock production has been declining in the Czech Republic. The main reason is cheap products from EU countries and the inability of Czech farmers to compete with them. Livestock production does not “suffer so much” in mountainous areas and hence, this is the only area where this production has not been decreasing that much.

In this model, there are no AEM supports. It is because the farmers breeding livestock do not profit that much from these funds. As the AEM payments support an “inefficient” use of pastures and they do not provide funding for “animal per head”, they do significantly not affect this model. However, they are important for giving an idea of the amount of resources going to Czech agriculture as the whole.

4.1.3 Management of the European funds supporting agriculture

In reality, there are only few farmers producing only one crop or breeding just one kind of animal. These are usually the farmers operating only small businesses and

owning/renting just few hectares of land or couple of animals and being unable to use a considerable amount of resources from the European Union funds.

The majority of Czech farmers possessing tens or hundreds hectares of land and a considerable number of livestock usually supply market with various products. A certain farmer might own, for instance, 10 hectares of corn, 5 hectares of meadow, and 15 hectares that he/she uses as pasture for 50 suckler cows, ten heifers, and one bull. There are many farms with the management like this.

Based on a statistical model that can be found in the Tables 8 and 10, we can state that the average farmer owning 100 hectares of farmland in good condition areas plants winter wheat (34.09 ha), winter barley (2.41 ha), spring barley (16.32 ha), corn (7.76 ha), sugar beet (4.64. ha), oilseed rape (10.86 ha), perennial fodder (5.07 ha), corn for silage (4.91 ha), and has 3.63 ha of meadows, 1.02 ha of pastures, “11.5” dairy cows, 5 calves, “2.5” heifers, “4.25” pregnant heifers, and 3 bulls (“Zpráva o stavu zemědělství pro rok 2009”, 2010, page 89). These measures are converted to “1 hectare farm” by dividing by of 100 so that the model is comparable with the “single commodity model”. Even though the farmer possessing such diverse farming system probably does not exist, the average hectare in the good condition areas for farming are represented by the numbers above (the model accuracy for plants is 90.71% as 9.29% is formed by very minor crops such as rye, apples or peaches. Livestock such as pigs, chickens, goats, sheep, or broilers are not considered as they either represent a very minority or do not receive subsidies from the European Union since they are unable to satisfy the EU requirements).

Based on the occurrence of 10 most common crops and 6 most frequent livestock, I created a model representing profitability of a very average farmer during the particular five years. The formula for, for instance, average total cost is as follows:

$$TC_A = TC_1 * S_1 + TC_2 * S_2 + \dots + TC_{10} * S_{10} + TC_{11} * q_1 + TC_{12} * q_2 + \dots + TC_{16} * q_6$$

Where $[S_1 - S_{10}]$ represent the hectares (from the sum of 1 hectare) “earmarked” for ten most common crops and $[q_1 - q_6]$ are the quantities of six kinds of livestock living on a hectare. This formula deals with the average hectare and differs for each of three areas.

Apart from total costs invested into production of a certain plant or livestock during

the year, I examined a data representing total yields, sum of Direct Payments and LFA subsidies (Profitability of Agricultural Commodities, 2010), product market prices (the Czech Statistical Office, 2010), and AEM supports (calculation on the page 37). In addition, by multiplying the yield of a certain product in tonnes by market price of tonne, we can calculate net profit of farmer (milk is considered the yield of dairy cows, beef for suckler cows and bulls, calves for pregnant heifers, while calves and heifers are considered an intermediate product where yield equals its total costs).

Table 12: The data concerning production of meadows in 2009

Source: IVAN FOLTÝN, IDA ZEDNÍČKOVÁ: Profitability of agricultural commodities: economic-mathematical predictions, ÚZEI - Czech Institute for Agricultural Economics and Information, Prague 2, 2010, ISBN: 978-80-86671-80-2, Attached CD-ROM

	Good conditions	Worse conditions	Bad conditions
Total costs CZK/ha	4 794	3 986	4 296
Yield t/ha	14.24	14.14	15.37
Market price CZK/t	337	282	280
Direct payments (SAPS and TOP-UP) CZK/ha	4 894	4 894	4 894
LFA subsidies CZK/ha	0	2 086	3 836
AEM subsidies CZK/ha	3 447.62	3 447.62	3 447.62
Gross profit without subsidies CZK/ha	4 798.88	3 987.48	4 303.60
Profitability without all subsidies	0%	0%	0%
Profitability with subsidies	174.10%	261.64%	283.64%

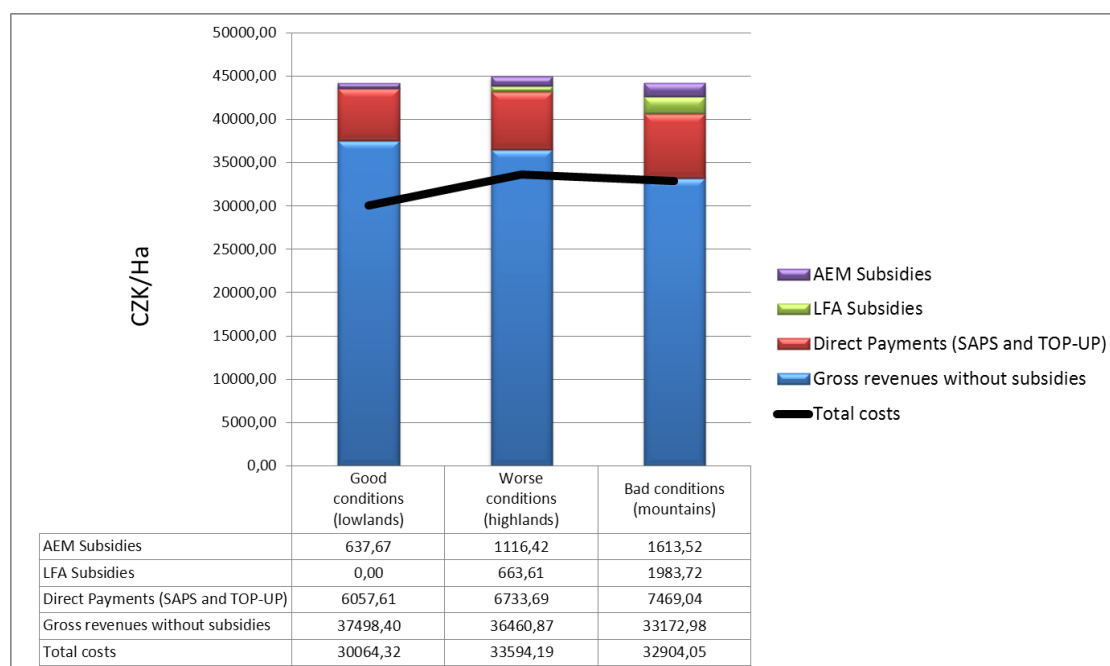
The Table 12 shows an example of the data for one commodity I was calculating. It is important to note that the AEM subsidies are a very average and are not to be used as precise numbers. Their purpose is only to show how much funding farmers can use from the AEM supports based on the calculation from given data. Furthermore, as noted before, there are no records which would tell us how many resources from the AEM supports a particular farmer needs to satisfy the EU requirements and what amount goes to “his pocket”.

Profitability without subsidies is calculated by dividing gross profits by total costs minus one. If we wanted to calculate profitability with subsidies, we would have to add the SAPS, Top-up, LFA, and AEM supports to gross profits.

You might have noticed high numbers in the “profitability with subsidies” rows. Apart from not 100% precise numbers concerning the AEM supports, it is caused by the assumption that meadows represent an intermediate product and their total costs equal total gross profits (representing opportunity costs). In reality, farmer usually does not use the yield from his/her meadows directly by selling the product. He/she uses it, for instance, for feeding livestock and he/she gets the revenues when the animal is sold. When it happens, costs of conserving the meadows are added to the livestock production costs. It might be either lower or higher than the production costs of the all intermediate products.

Since we have the same data as we can find in the Table 12 for all 16 commodities, we can easily calculate figures necessary for creation the “average hectare farm” by using the formula on the previous page. By grouping the calculations, I created a model of the European funds use for agriculture development in the Czech Republic. As we can see in the Graph 15 below, in 2008, the subsidies were not used quite efficiently.

Graph 15: Cost management of the average ha farm in the Czech Republic in 2008

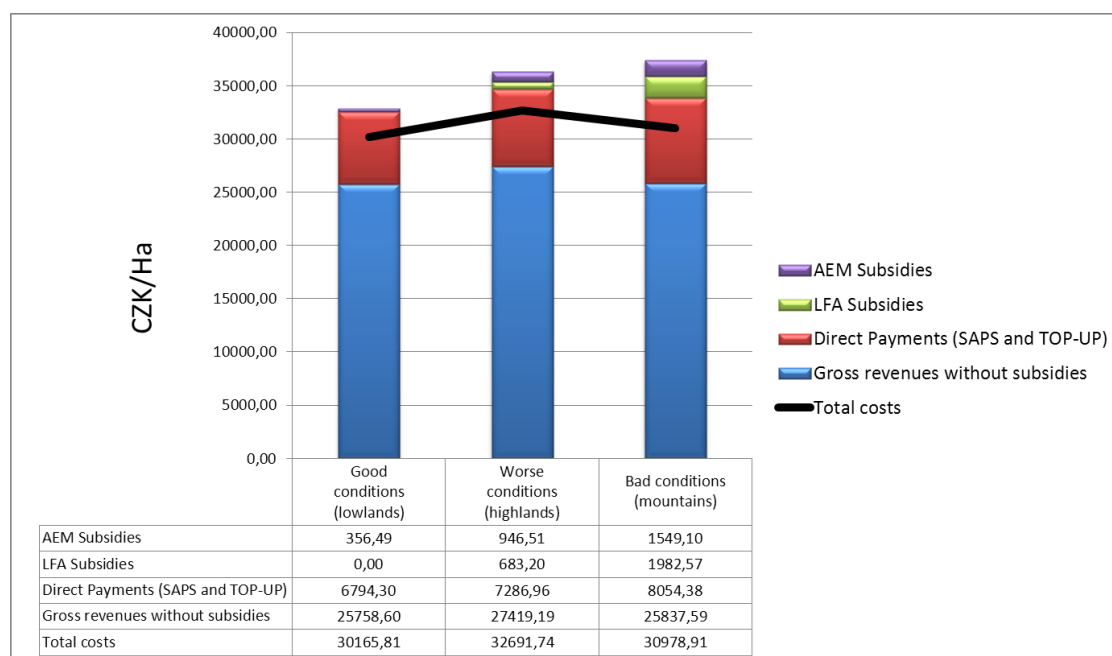


As noted in the previous chapter, the year 2008 was very profitable for almost all farmers. I examined the past five years (2005-2009) and I realised there was no year providing farmers with better agricultural and economic conditions. High market prices, shortage of products as a consequence of either previous years or problems with export the other countries had caused the year 2008 was “quite profitable”. Nevertheless, the Graph 7

shows us that while the farmers operating their businesses in the bad condition areas would have barely got by the money if to had not been for EU subsidies, the farmers carrying out intensive farming on the most fertile soils in the Czech Republic received the subsidies “as a gift” as they were self-sufficient even without them.

Contrary to the 2008, the following year was one the worst ones of those five years while the yields of farmers were so bad that many of them ended up with loss even with the EU support. The prices of food went down in that year and lots of farmers were unable to compete with the EU market while they had to sell their products for such a low price.

Graph 16: Cost management of the average ha farm in the Czech Republic in 2009



In the year 2009, no farmers would have been competitive if they had not received subsidies from the European Union. Therefore, this cost management shows how important the EU funds were in that year. On the contrary to 2008, the funding was necessary in 2009. This huge difference between years 2008 and 2009 and profitability of farmers operating in those years shows how “unstable” the funding system might be.

4.2 Future of the management of CAP funds

In the current programming period, Common Agricultural Policy spends approximately 40% of EU budget on supporting agriculture whereas mainly farmers are considered as “the most important workers to subsidize”. However, particular Member

States demand right to cut this huge amount of resources used only for the issues concerning agriculture. Especially while an average European taxpayer contributes approximately EUR 110 a year to support the CAP. These proposals oscillate between strongly liberal opinions requesting a gradual cancelling of income stabilization and paying only for public goods production and populist opinions proposing keeping current budget.

On the other hand, there are also objective reasons such as an increasing economy globalization causing market anomalies and large price fluctuations of agricultural commodities, increasing climatic changes influencing yields of not only European farmers, or economic crisis. These problems result into a pressure on cutting budget of CAP in order to increase efficiency of agrarian policy in the next programme period. However, the CAP reform seems to be crucial and its structure is still being often discussed in the current programme period.

New objectives including clear priorities of CAP after the year 2013 are already identified in the Communication of the European Communities. It includes the following targets:

- 1) Sustainable food production including provision of adequate income of producers while fluctuation in the price of food and increasing competitiveness of producers are being resolved.
- 2) Sustainable natural resources and climatic economy dealing with financing of public goods production, elimination of impacts of climatic change, and support of environment-friendly production methods.
- 3) Balanced regional development considering employment support, diversification of production with regard to local conditions and resources.

As to the rural development policy, it is proposed to continue in it considering the above three areas.

Only time will tell us whether this prepared change of CAP will be really more efficient and less expensive at the same time. In addition, the Czech Republic has a different position compared with the other Member States. Approximately 80% of the CAP funds allocated to our country go to 20% of the largest fund beneficiaries and vice versa. The upcoming reform should change this ratio. The future plans concerning the CAP

change will, however, come out at the end of 2013. In the same year, a legislative solution of the European funds management and mainly of the European budget for the next programme period will be known.

5. Results and discussion

In the Chapter IV, I showed cost managements of particular commodities (i.e. total costs, total revenues, and profitability with regard to agricultural product area and particular farms using these commodities in relationship to regional level). I considered the situations under which farmers were using resources from EU funds and I also noted what the farmers situation would have been if they had not been able to receive any funds. This information reflects the economic data necessary to compare competitiveness of farmers between each other and evaluation of farms at production level (the commodities they produce) and regional level (agricultural production area where they produce them). The resulting economic indicators are expressed per 1 hectare of farmland.

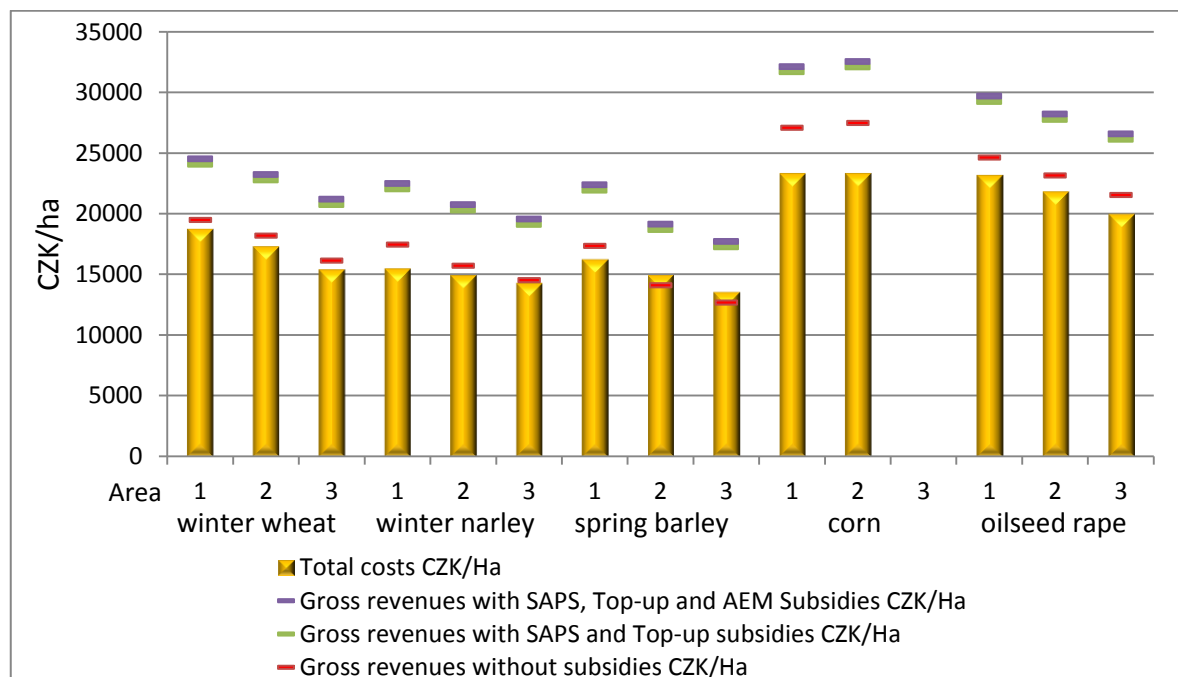
5.1 Comparative analysis of commodities

Farmers are supported by various European subsidy programmes. In the current programme period 2007-2013, they were able to get LFA and AEM supports that were introduced to compensate natural constraints and production of public goods, and direct payments (SAPS and Top-up) aimed at supporting low income of farmers and ensuring their stable income. This idea took into account farmers as a whole. Unfortunately, every farmer who owned or rented some farmland could access the funds (he/she did not need to manage a land at all, he/she only had to comply with the Cross Compliance conditions). If a farmer owns/rents farmland and uses resources from the European Union even though he/she does not use it for farming, it is obvious that the European Union supports “idleness” by providing “money for no production”. Nevertheless, this situation does not occur often as almost every businessman tends to maximize his/her profit that is usually the higher the more goods he/she produces. Since land is frequently the most valuable asset that farmer possesses/rents, majority of owners invest into it and use its potential as much as they can. Therefore, almost every farmer cultivates the farmland that he/she possesses/rents in order to maximize his/her profits (apart from direct payments, he/she may end up with profit). In addition, farmers who do not grow or breed anything are not included in my model that is based on the commodities which farmers produce.

5.1.1 Results of crop production

In the Czech Republic, there are significant differences even among the farmers who specialize in growing different products. As every product has different production costs and different market price, funding in the same amount of money per hectare is quite irrelevant. Whereas one farmer is in profit even without subsidies, another one can be unable to cover production costs despite of using funds from the EU. In the Graph 17, profitability of the most common crop commodities with and without subsidies during the years 2005-2009 is shown. The numbers 1-3 represent agricultural production areas. The number 1 represents lowland areas, number 2 foothill areas, and number 3 stands for mountainous areas. Since corn is not planted in the mountainous areas, the column number 3 is blank. Since corn is not planted in the mountainous areas, the column number 3 is blank.

Graph 17: Production of five most common crops in CZ (five year average)



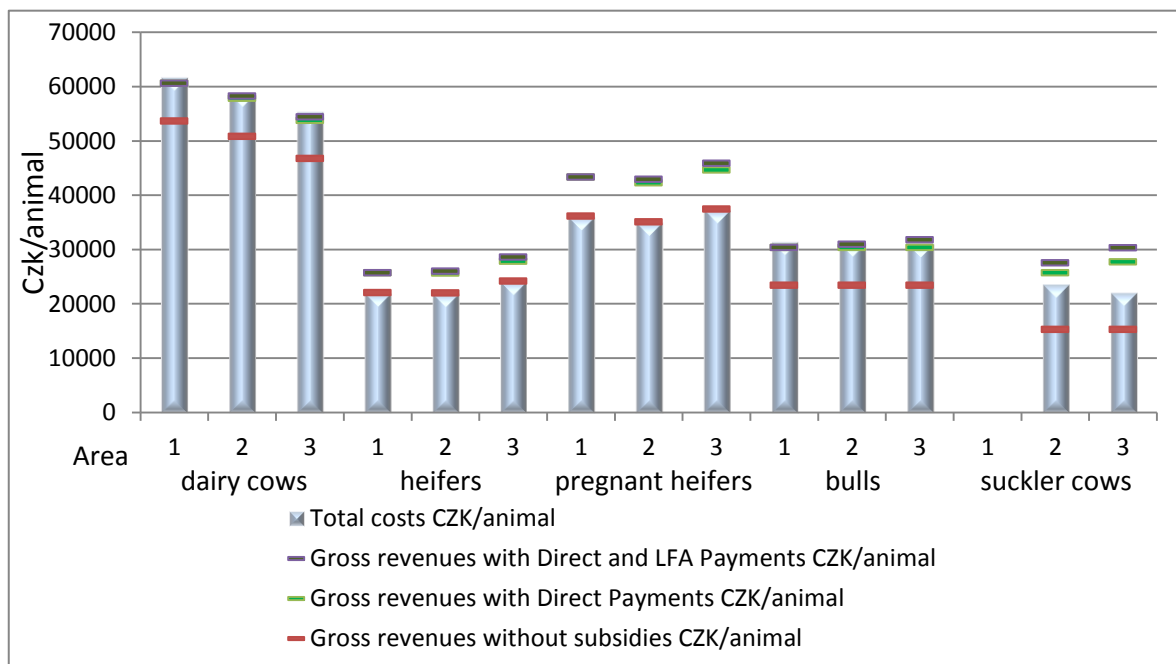
As we can see, direct payments are, in some cases, unfair to particular farmers. For instance, spring barley producers ended up in loss at the second and third production areas; hence income stabilization from the European Union was necessary for them. On the contrary, winter wheat, oilseed rape, and mainly corn producers did not need such a high amount of subsidies and received the money “in a form of gift”. During the last 5 years, the

farmers growing winter barley were well profiting in the production areas with the best conditions. It was significantly worse in the “middle area” and farmers who were growing winter barley in the bad condition areas would have been barely able to cover their profits without EU subsidies.

5.1.2 Results of livestock production

If we take a look at livestock production, we will find it much more diverse. Since the majority of livestock is found in the areas supported, apart from direct payments, by LFA subsidies (LFA subsidies are paid per hectare of pastures, hence they indirectly support the livestock “eating the subsidies” and farmer does spend much less on feeding his/her livestock). Apart from that, suckler cows are supported by Top-up subsidies “per head” so that these cows are financially much more supported than any other livestock. Farmers focusing on pigs and poultry are not considered in this analysis as they are not supported by EU funds that I am discussing in this chapter.

Graph 18: Five most common livestock production in CZ (five year average)



The Graph 18 represents profitability of five most common farm livestock with and without subsidies. Since the livestock is also supported by LFA payments through “their feeding”, there are “purple lines” showing basically total gross revenues in which all subsidies are included. In the first areas (good condition areas), these sums are represented by the “green lines” as these areas are not supported by LFA subsidies.

It is obvious from the graph 18 that livestock production would not survive if it was not supported by EU payments. The only differences are the production of heifers and pregnant heifers. However, the reason why their owners/renters experience the exactly same total costs as total revenues is because these animals are assumed to be an intermediate product. The product of heifers is pregnant heifers while their product is believed to be calves. These intermediate products are not immediately sold so that farmers do not show any revenues immediately (cow starts to be profitable since giving birth to calf. In the model, I consider this meaning that pregnant heifer “becomes” dairy cow and profits are “hidden” in milk production.) On the contrary, dairy cows, bulls, and suckler cows are considered to be a final product. Their owners/renters get revenue on them; however, as seen in the Graph 18, these revenues never cover total costs necessary for the production.

When farmers receive supports from the CAP funds, their situation is sometimes not profitable either. During the years 2005-2009, the bull and dairy cow producers operating in the first two areas barely covered total costs of their business (production of milk was unprofitable in the “best condition area” even with subsidies). The most agriculturally disadvantaged “third”, mountainous areas where extensive agriculture is operated seemed to be the best for livestock production during the above mentioned five years. The reason is that the costs necessary for keeping and breeding livestock are usually lower than in the other parts of the Czech Republic. In addition, these farmers get the highest amount of subsidies from the LFA funds. The only “always profitable” commodity during the last 5 years was suckler cow beef production. It was a consequence of the highest EU financial support. Each suckler cow receives an additional amount of money per head (in the year 2009, for instance, it was approximately 6860 CZK). That is not the case for other livestock included in the model.

5.1.3 Summing up

To sum up the results obtained, in the years 2005-2009, the intensive crop production of selected commodities in the Czech Republic was profitable and the farmers were receiving an “additional financial support” from the European Union. Crop production in the areas with the best soil and climatic conditions for agriculture was the most profitable one, even though agriculture operated in the less favoured areas was

supported by a significantly higher amount of resources from the European Union. Profitability of crop production without subsidies was fluctuating between small loss and high profit if operated in the areas where the conditions for agriculture were worse (i.e. highlands and mountains). Nevertheless, if a farmer ended up with loss he/she was sufficiently compensated by the European funds.

On the contrary, the CAP funds usually “had to” cover total costs of businesses operated by Czech farmers concentrating on livestock production. These farmers would not be able to survive on EU market without them. Livestock production was not profitable in the areas where the conditions for farming are the best and where farmers run intensive agriculture. The “second area”, representing combination of intensive and extensive agriculture, is a bit more suitable for livestock production. Nevertheless, it is still “not enough” and hence livestock production is fading out in these areas. The area of worst conditions is the only place where livestock production is not “disappearing so quickly”. Several farmers experienced losses even in the third area forcing them to go out of business. However, mainly beef producers “held livestock production up” and the production decline in these areas continued much more slowly. As a matter of fact, extensive livestock production has been much more profitable than the intensive one during the last 5 years.

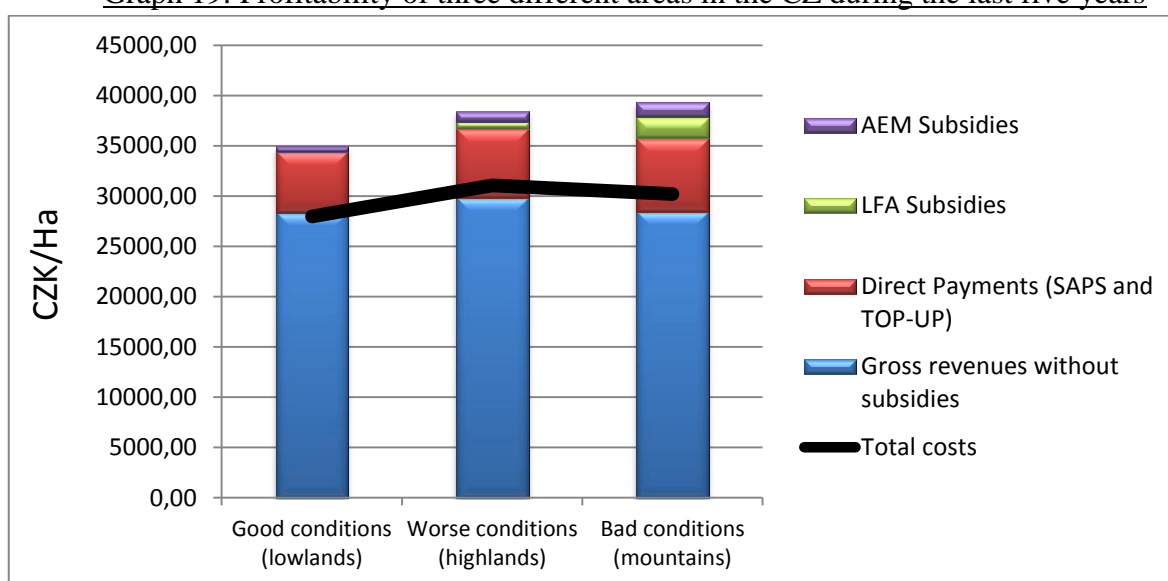
5.2 Comparative analysis of farms

Based on the cost managements of particular crop and livestock commodities in all production areas, I have aggregated their results into a farm system. The aggregation showed that in the most productive (lowland) areas, farmers concentrate mainly on crop production while livestock production represents the minority of businesses operated in these areas. The highland areas contain approximately 25% of grasslands that are used for livestock production, especially dairy cows, while the rest represents arable land. The last, mountainous areas, boast a higher volume of livestock production than crop production while the majority of livestock is kept for beef production. Based on this farm system aggregation, I was able to prepare a model cost management of farms related to regional level distribution given by natural conditions.

The previous chapter indicates that in the near future, the best condition areas are going to “lose” almost all livestock producers while the land of mountainous areas will not

be used by crop farmers either. Even though the European Union has an objective to balance crop and livestock production, it is not being done effectively. This statement is partially correct. Nowadays, crop production is found mostly where the conditions are best while the farms operating in the less favoured areas prefer livestock production since it is “easier” and usually more profitable. However, many farmers combine livestock and crop production in order to increase their profits. If we calculate profitability per average hectare of farmland we can determine management of CAP funds in three different areas, respectively, we calculate at the regional level.

Graph 19: Profitability of three different areas in the CZ during the last five years



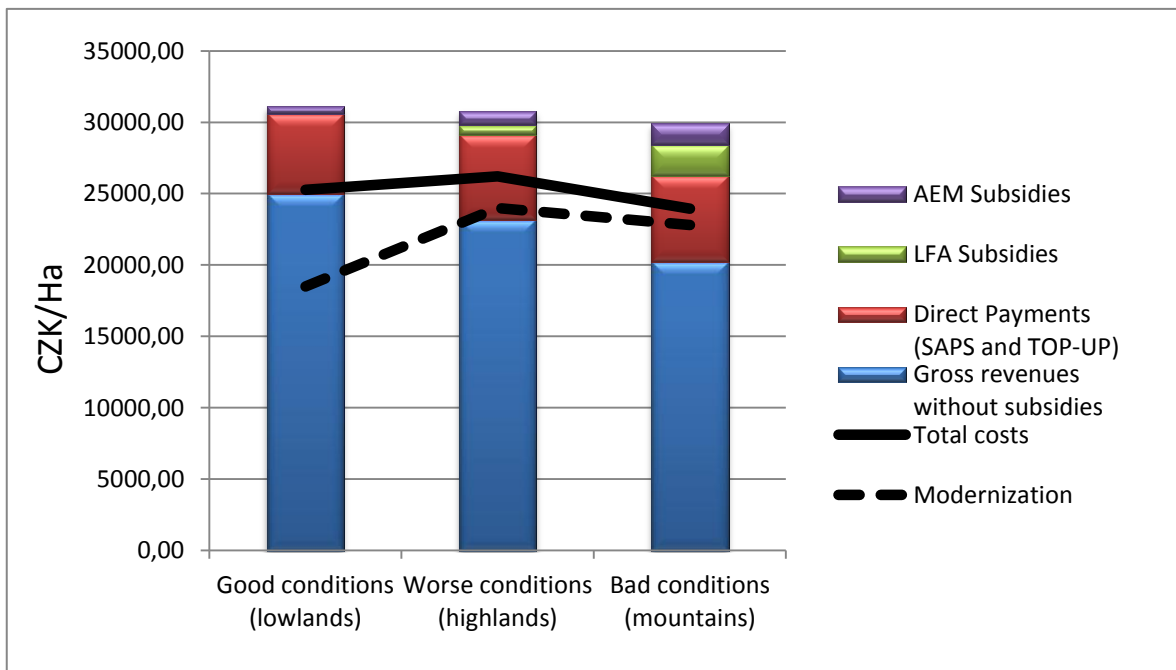
If we examine every “average hectare” of farmland, we can state that farms in neither area would have operated a competitive farming if the CAP funds had not been provided. Nevertheless, we cannot say that every Czech farmer was “unable to survive” without subsidies. For instance, many farmers specializing in the intensive crop production in the first area were fully competitive even without subsidies during the five last years. However, their profitability was “balanced” by farmers who either were not able to compete with the others and needed much more subsidies or ended up with loss as a consequence of bad management, yield, or other factors.

However, an average Czech farmer depends on European subsidies. Since the volume of support the Czech Republic can use from the European Union is going to be cut in the next programming period, it is necessary to examine this problem. A crucial issue is how to decrease the dependence on funds and support production at the same time.

5.2.1 Possible solutions how to increase competitiveness of farms

The most feasible solution how to decrease dependence of farmers on subsidies is believed to be modernization of capital. In rural areas, the capital used by for production is frequently very old and working quite ineffectively. Even though the financial instruments for capital innovations are available within the First Axis of the European Agricultural Fund for Rural Development, majority of capital our farmers work with is still very inconvenient. On the other hand, many Czech farmers have already applied for the EU programmes for capital modernization and it is expected they are going to reduce their total costs in the near future. As a matter of fact, the countries such as Germany, France, or Belgium whose farms are much more developed and hence work more effectively had been using CAP subsidies even before the Czech Republic became Member State. Therefore, these countries have already modernized majority of their farms so they can produce the same goods as “us” with lower costs. If we want to be able to compete with such “more developed farms”, we have to put more emphasis on the innovation and cost reduction. The Graph 20 shows how the modernization of capital would lower total costs in the future. It is necessary to mention that this graph is only an estimation not based on any verified data. It is just to show how the modernization might help Czech agriculture.

Graph 20: Estimated change of total costs after modernization of capital



From the information showed in the Graph 20, it is obvious that the investments in innovations help the good condition areas the most while the other areas are not so much influenced by them. This expectation is based on the fact that almost always, an intensive agriculture is operated in the areas with the best conditions for farming. This type of farming is specific by a high utilization of machinery (large area seeding, fertilizing, soil cultivating, harvesting, etc.) as well as buildings (livestock keeping, cow milking, storage of products, etc.). If this capital is therefore modernized, it is expected that total cost will decrease at a significant rate. On the contrary, in the areas with bad farming conditions, an extensive agriculture is mostly operated, not so much influenced by the quality of capital since the capital is used to a much lower extent. The farmland in between of these two areas represents basically their combination. It means that economic parameters show also average values of the best condition and worst condition areas.

It looks like that investment into capital would make the disadvantaged areas even less competitive while the most profitable farms would receive much more money. The difference between farms profitability in the relevant areas would even increase and the CAP funds would be distributed even less fairly. Nevertheless, this is not true. The best condition areas need the investments just because the replacement of old capital by a more effective one would limit a negative effect on the environment. Modernization of machinery and consequent improvement of production techniques can positively affect protection of the environment, animal welfare, water purity, or quality of food production. In addition, the first regions might be able to do without direct payments in the future if their total costs are decreased by investments into capital.

However, the funds which would directly support improvement of the environment could be probably more important than high investments into capital. Intensive agriculture is usually associated with the risks of negative effects upon the environment such as erosion, nutrients and chemicals leaching into water, decreasing biodiversity, etc. Instead of disproportionately high direct payments, it would be more effective to support investments which would directly “improve” the environment such as AEM supports that appeared to be much more attractive in the less favoured areas since they are to compensate decreased profits. It is possible that such support could save the expenditures on, for instance, water purification or soil cultivation.

In the remaining two areas, it is mainly important to modernize capital in order to decrease dependence of farmers on direct payments. The AEM and LFA payments appeared to be more relevant to protection of the environment and profit compensation in these areas. The direct payments are probably going to be still necessary in these areas. However, their reduction in the future seems to be essential since they provide resources only according to the size of fields. Even though the size of farm is tightly associated with the owners/renters profit, it does not mean that these two factors depend on each other.

Bad management of staff and resources often represents another problem of Czech farms. However, this subject relates rather to the employers themselves than to the volume of resources these farmers receive. Moreover, human resources management is not subject of my thesis so that I am not going to examine this issue in detail.

5.3 Discussion

Farmers and others being active in agriculture are probably the only workers who produce, apart from food that we can buy from retail sellers, also public goods. Almost everyone is interested in maintenance of biodiversity in rural areas, ensuring pure water and air, protecting soil or various species and “enjoying the nature”. The European Union believes that farmers can produce “better” or “more valuable” public goods by providing them with subsidies from the CAP fund. Whether this is a justified opinion or not is being discussed very often. However, probably no other branch than agriculture can cultivate land, water, or air as much as farmers do.

Every entrepreneur, whether he/she is a farmer or not, has to effectively use the resources he/she has at disposal in order to maximize profits. Farmers work with the resources including mainly land but also capital, labour, and funds. The economic use of land is limited to farmers who are the most effective managers of it. However, land fertility decreases where the conditions for farming are worse and is the worst in the mountains. It has impact on yield, subsequent revenues but also on total costs. Therefore, the European Union introduced LFA payments in order to eliminate differences between farmers operating on good condition areas and other who operate on disadvantaged areas. Farmers can also use AEM supports if they “want to” cut their revenues by introducing environment-friendly measures while direct payments should contribute towards income of farmers which will make them not going out of business and stop cultivating the land.

However, the model that I prepared showed that majority of farmers who run intensive crop production in the best condition areas are fully competitive even without direct payments. They thus receive “extra” payments that are annually added to their revenues. Logically, direct payments do not work as “income stabilizer” in case of these farmers and their purpose is totally unfulfilled. On the other hand, direct payments are much more important for ensuring stable income of farmers operating in the worse condition areas while they are essential for the mountainous farms.

Price of agricultural commodities is a very important factor influencing profitability of all farmers. The analysis of profitability of particular farms showed that producers operating intensive crop farming in the best condition areas would be, together with direct payments, competitive even the prices of their products rapidly decreased. In other words, direct payments provide them with a sufficient “tolerance” helping them to stay in business even in the situation of declining prices. The other producers do not have such advantage. Therefore, mainly farmers operating an extensive livestock production in the mountains can get into serious problems if the prices of their products fall down just slightly. Since their elasticity is much lower than the elasticity of the intensive crop producers, they are even more disadvantaged.

Obviously, direct payments increase the difference between competitive and uncompetitive farms, even though the European Union tends to eliminate these differences. Also the objective to “improve the environment” is not being fulfilled efficiently. Since the intensive crop producers have “secured” income while they receive additional direct payments, they are not motivated by AEM supports that are to improve the environment and ensure sustainability. These farmers rather increase their production by using allowed fertilizers, pesticides, herbicides, etc. than conserving soil or water. In addition, they might even use money from direct payments to invest into these fertilizers which would increase their profit but it also significantly decreases water purity, soil cultivation, or food quality. Therefore, in cases of good condition areas, direct payments compete, to a certain degree, with AEM supports as the first ones support an “effective agriculture” using fertilizers, etc. in some areas while the agro-environmental measures pays for an “ineffective agriculture” but with the positive effect on the environment. In the mountains or even in the worse conditions areas the farmers choose whether they want to use the AEM supports or not. In

the best conditions areas, the AEM supports are not so much popular because the farmers here are more motivated by the additional direct payments and increasing of production.

If we take a look at the funding from a slightly different point of view, we find out another “deficiency” of direct payments. Since every farmer is supported by them, also very bad farmers are supported. The farmers, who would otherwise go out of business because of lack of their knowledge, management skills, etc., are supported by the money of EU taxpayers. These farmers, who operate in every area, are able to produce the same product as the other successful farmers do, however, in a much less efficient way. In other words, the European Union, in some cases, supports inefficient producers. If they did not receive such a high amount of, direct payments, they would have been out of business by now and the job positions would be available for more skilled labour or entrepreneurs.

On the other hand, most of the CAP funds are necessary for Czech farmers. The model analysis showed that majority of Czech farmers would not be able to survive if they are not supported by the European funds. However, it is also important to note that Czech farmers had to lower prices of their products when we accessed the European community while their revenues were reduced. The reason of this action was an effort to compete with cheap agricultural products coming from other Member States expanding to our market. These states had been using funds for, for instance, renovation of capital used for farming even before we accessed the European Union so they are able to produce many kinds of goods cheaper than Czech farmers do. Therefore the CAP funds should also compensate farmers who had to lower their prices “because of” the free movement of goods.

6. Conclusion

In the programming period 2007-2013, the Czech Republic is eligible to use approximately EUR 26.69 billion from the European funds. These subsidies are being used to fund transport infrastructure, development of towns and municipalities, protection of the environment, science and research support, improvement of quality of services, etc. Common Agricultural Policy is supported by more than 40% of these funds which makes it very important. The funds concerning agriculture are paid through European Agricultural Fund for Guarantee and European Agricultural Fund for Rural Development. From the economic point of view, these financial resources should be used effectively if they are to meet their objectives.

Farmers and other stakeholders are those who receive and consequently use the subsidies for producing particular agricultural commodities. Cost managements of selected crop and livestock commodities that also included EU subsidies such as direct payments, LFA and AEM supports showed that CAP subsidies are not always used effectively. Especially a particular crop farming such as intensive corn production, which experienced cost profitability during the years 2005-2009 in the amount of 15.99% without CAP subsidies and was additionally supported by direct payments in the amount of approximately 4 600 CZK which made its total profitability rising to 37.64%. Winter wheat production during the same period represented cost profitability in amount of 3.72% in the good condition areas, 4.94% in the worse condition areas, and 4.64% in the mountainous areas. Support in the form of direct payments made the total profitability rising to the amount of 30.64% in the good condition areas, 34.13% in the worse condition areas, and 37.44% in the mountainous areas. Consequently, cost managements of these commodities proved that direct payments were redundant in cases of these commodities as their profitability was high enough even without the subsidies. Supports of these commodities were, in this case, unnecessary and very ineffectively managed.

On the contrary, the farmers specializing in beef production those cost profitability without subsidies was -35.82% in the worse condition areas and -31.53% in the mountains needed direct payments and found themselves uncompetitive without them as their total profitability with these payments rose to 15.72% in the worse condition areas and to 35.96% in the mountainous areas. These producers would have gone out of business if their income had not been stabilized via direct payments and LFA supports. Also milk producers experienced negative cost profitability without subsidies in all three areas in the years 2005-2009 while direct payments and LFA subsidies “made them profitable” as their total profitability was positive. Nevertheless, direct payments are not distributed fairly since they favour mainly crop producers to other farmers as majority of crop producers are competitive even without them while farmers specializing in livestock production need these payments to survive.

Since practically all farmers combine more commodity production in order to increase profits, a cost management of model farms operating in relevant production areas had to be simulated. The cost management analyses proved that the most viable farms

follow an intensive agriculture. These farms operate in the best condition areas while they receive direct payments rather in forms of “bonuses” than real compensation for production losses. Their cost profitability without subsidies equalled 1.51% while mainly direct payments boosted this amount to 25.02% of total profitability. It was also proved that the farms with intensive livestock production operating in the worse condition areas needed a high amount of operating supports to ensure their viability. Their cost profitability without subsidies equalled -3.74% without subsidies while direct payments and LFA subsidies increased the total profitability to the amount of 23.65%. The farms specializing in extensive agriculture in the mountainous areas have to use subsidies effectively and maintain public good production through AEM supports at the same time in order to “survive” in such areas. If they had not received any subsidies, their cost profitability would have been -5.70%. Direct payments, LFA subsidies, and AEM supports made total profitability of these farmers equalling 30.30% which helped them surviving in worse and mountainous areas but. On the other hand, they also made them very dependent on CAP subsidies.

Cost management analyses of model farms related to production areas proved that direct payments paid per hectare of farmland do not differentiate real needs of farms. In some cases, these subsidies only “boost” income of farmers who would have been competitive even without direct payments. On the other hand, they are essential for livestock farmers and the farmers operating in the mountainous areas. Nevertheless, Common Agricultural Policy should concentrate on a more efficient funding and differentiating real needs of all farms and eventually taxpayers of the European Union.

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8. List of figures, graphs and tables

8.1 Figures

Figure 1: Management of both pillars objectives, page 17

Source: EUROPEAN COMMUNITIES: The EU Rural Development Policy 2007-2013, Office for Official Publications of the European Communities, Luxembourg, 2006, ISBN 92-79-03690-4, page 5

8.2 Graphs

Graph 1: Effectiveness of financing Czech projects by the European funds on November 3, 2010, page 12

Source: <http://www.strukturalni-fondy.cz/CMSPages/GetFile.aspx?guid=c8d02824-16e3-49c2-8243-d65530f792ce>, 8.11.2010

Graph 2: Distribution of EUR 2.8 billion among four axes of EARFD, page 23

Graph 3: Cost management of winter wheat in 2008, page 32

Graph 4: Cost management of spring barley in 2009, page 32

Graph 5: Cost management of spring barley in 2009 with all subsidies, page 33

Graph 6: Cost management of winter wheat in 2008 with all subsidies, page 34

Graph 7: Cost management of corn in 2008 with all subsidies, page 34

Graph 8: Cost management of meadows with all subsidies (2005 to 2009 average), page 35

- Graph 9: Cost management of oilseed rape with direct payments, AEM supports, page 36
- Graph 10: Situation of Czech sugar beet producers during past 5 years, page 38
- Graph 11: Cost management of dairy cows in 2009, page 40
- Graph 12: Cost management of dairy cows in the years 2005–2009, page 41
- Graph 13: Cost management of bull production during the years 2005–2009, page 41
- Graph 14: Cost management of suckler cow production in the years 2005-2009, page 42
- Graph 15: Cost management of the average ha farm in the Czech Rep. in 2008, page 45
- Graph 16: Cost management of the average ha farm in the Czech Rep. in 2009, page 46
- Graph 17: Production of five most common crops in CZ (five year average), page 49
- Graph 18: Five most common livestock production in CZ (five year average), page 50
- Graph 19: Profitability of three different areas in the CZ during the last five years, page 53
- Graph 20: Estimated change of total costs after modernization of capital in Czech farms, page 55

8.3 Tables

Table 1: Most common European Funds accepted for 2007-2013 programming period, page 10

Table 2: Operating programmes in the 2007-2013 budget period, page 14

*Source: MMR ČR, ODBOR EVROPSKÝCH FONDŮ –MINISTRY FOR REGIONAL DEVELOPMENT OF THE CZECH REPUBLIC, DEPARTMENT OF EUROPEAN FUNDS: **Abeceda fondů Evropské unie 2007 – 2013**, Naviga 4 s.r.o., Prague 2, 2007, page 9*

Table 3: Top-up rates in the Czech Republic in 2010, page 19

Table 4: Administration of applications within the First Axis for the year 2009, page 20

Source: <http://www.szif.cz/irj/portal/anonymous/eafrd/osa1>, 23.9.2010

Table 5: Administration of applications within the Second Axis for the year 2009, page 21

Source: <http://www.szif.cz/irj/portal/anonymous/eafrd/osa2>, 23.9.2010

Table 6: Allocation of AEM supports for the 6 years period, page 25

Source: http://eagri.cz/public/web/file/61102/prv_zmeny_cerven2010_web.pdf, 10.3.2011

Table 7: Diversification of land in the Czech Republic, page 26

Source: http://www.agrokrom.cz/texty/metodiky/Ram_metod/RAM_METOD_CHAR_VYROB_OBLASTI.pdf, 5.1.2011)

Table 8: The occurrence of 10 most common crops in the Czech Republic, page 30

Source: MZE ČR –MINISTRY OF AGRICULTURE OF THE CZECH REPUBLIC: **Zpráva o stavu zemědělství za rok 2009**, Czech Ministry of Agriculture, Prague 1, 2010, ISBN 978-80-7084-940-8, page 168

Table 9: The difference between costs and profitability of two crops in 2008, page 39

Source: IVAN FOLTÝN, IDA ZEDNÍČKOVÁ: **Profitability of agricultural commodities: economic-mathematical predictions**, ÚZEI - Czech Institute for Agricultural Economics and Information, Prague 2, 2010, ISBN: 978-80-86671-80-2, Attached CD-ROM

Table 10: Distribution of AEM supports in 2009, page 35

Table 11: Distribution of livestock in the Czech Republic, page 39

Source: MZE ČR –MINISTRY OF AGRICULTURE OF THE CZECH REPUBLIC: **Zpráva o stavu zemědělství za rok 2009**, Czech Ministry of Agriculture, Prague 1, 2010, ISBN 978-80-7084-940-8, page 192

Table 12: The data concerning production of meadows in 2009, page 44

Source: IVAN FOLTÝN, IDA ZEDNÍČKOVÁ: **Profitability of agricultural commodities: economic-mathematical predictions**, ÚZEI - Czech Institute for Agricultural Economics and Information, Prague 2, 2010, ISBN: 978-80-86671-80-2, Attached CD-ROM