The rural development in the context of agricultural "green" subsidies: Czech farmers' responses

Miloslav LAPKA[1], Eva CUDLÍNOVÁ[1], J. Sanford RIKOON[2], Martin PĚLUCHA[1], Viktor KVETOŇ[3]

[1]*Faculty of Economics, University of South Bohemia, České Budějovice, Czech Republic*
[2]*Department of Rural Sociology, University of Missouri-Columbia, USA*
[3]*Department of Social Geography and Regional Development, Faculty of Science, Charles University, Prague, Czech Republic*

Abstract: The study compares the role of agricultural green subsidies in rural development of the Czech Republic before and after joining the European Union (EU) in 2004. We use the perspective of multifunctional agriculture and contribute to the research on the contemporary trends in Czech agriculture by using the data collected through surveys in 2000 and 2006, as well as 2008 comparative statistical support, to ask if there have been significant changes and improvements in farmers' evaluations of these programs. The empirical case study results show some positive changes connected with the participation in the Common Agriculture Policy (CAP). In spite of improvements, farmers continue to cite two primary weaknesses and constraints – administrative procedures and shifting program guidelines – that were evident prior to joining the EU. It can be assumed that the environmental subsidies in the Horizontal Rural Development Plan 2004–2006 have had an effect on the stabilization of the livelihoods of rural inhabitants. In general, there is a positive shift of valuation of the CAP among farmers in the Czech Republic.

Key words: green subsidies, Czech farmers, multifunctional agriculture, European Union

Green subsidies in the title of our article mean the general argo-environmental payments in our country. The green subsidies are now related to the Axis II: "Improvement of environment and scenery" in the European Agricultural Fund for Rural Development (EAFRD) and they take more than 55% share of the total budget. This kind of subsidies represents priority in many European countries, too, like in Finland, Ireland, UK, Austria, Sweden, Denmark, Luxembourg, Slovenia and France. We can consider green subsides as a result of new emerging key concepts: Sustainable development in agriculture, multifunctional agriculture (MFA) and the general social shift to environmental values incorporated in the Agenda 2000. Green subsidies are in fact an attempt for the practical application of these ideas in Europe.

There are many philosophical as well as practical questions behind the green subsidies. Generally speaking, green subsidies represent the turn point not only in agriculture but in the society perception of the future of relationships to the landscape and nature. We consider social context of green subsidies one of the leading topics of changing the European society. We are focused on the actors in the process of green subsidies.

This paper analyses the success of environmental subsidies and their practical functions, as perceived by Czech farmers. We believe that this kind of support within the general context of rural development mainly in terms of its environmental dimension deserves a further attention. This requires delving into the concept of multifunctionality of agriculture (MFA), as well as the Common Agricultural Policy (CAP) and its application in the Czech Republic.

The goals of our empirical research were to evaluate the impacts of agro-environmental payments in the Czech Republic before and after joining the EU and also to examine the farmers motivations for participation in the grant programs. We constructed and implemented two surveys focused on the farmers'

Supported by the Ministry of Education, Youth and Sports of the Czech Republic (Projects No. 6007665806) and National Scientific Foundation (NSF) US.

attitudes, opinions and behaviours regarding environmental impacts of the "green" subsidies. The first survey was conducted in 2000 and the second one six years later, in the autumn of 2006. According to the topic of this paper, the authors conducted one partial survey in 2008 and 2009 under the framework of the ex-post evaluation of the Czech Horizontal Rural Development programme 2004–2006 (HRDP).

In terms of the above mentioned longitudinal research design, in the paper, we are focusing on the analysis of the following research questions as indicated in results:

- What motivated farmers to request and use subsidies, with a special focus on the attitudes and values related to economic, ecologic, and traditional cultural systems?
- Which type of subsides for the farmers and what kinds of activities were pursued most commonly with environmental subsidies?
- When comparing the farmers "critiques" of entitlement programs in 2000 and 2006, are the differences in farmers attitudes correlated with the structural types and sizes of farming operations?
- What are the main socioeconomic characteristics of municipalities where the agricultural green subsidies were spent in the Czech Republic during the period 2004–2006?

Agricultural green subsidies in the context of the existing theories and methodological approaches

Environmental subsidies are an inherent part of a relatively new concept of multifunctional agriculture (MFA) and its practical application in Europe.

The idea of agriculture's multifunctionality emerged as a key notion in the scientific and political debates on the achievement of sustainable development in agriculture and rural areas (see also Mahé and Ortalo-Magné 1999; Tangermann 2006, in the condition of the Czech Republic see Zagata 2010).

The OECD (2001) distinguishes between two interpretations of multifunctionality with a "positive" and a "normative" conception:

- In the "positive" approach, agriculture is described as being multifunctional by nature and it is analyzed through the concept of externality.
- In the "normative" approach, multi-functionality is defined as the set of contributions which agriculture conveys to the economic and social development of a given society.

Of course, there are also other views and interpretations of the multifunctionality concept in the agricultural sector (see also Bureau 2002; Marsden and Bristow 2002; Baldwin and Wyplosz 2008). As Wilson (2007, pp. 197) pointed out, economic and policy-based interpretations of multifunctionality are very narrow approaches of understanding multifunctional agriculture; on the other hand, there is a holistic view that emphasizes more the cultural and social dimension of agricultural and rural change (linked to the broad-based societal changes in countryside).

From the above analysis, it emerged that there is no consensus interpretation of the multifunctionality concept across the EU countries. Each country adapted the concept into its own legislation, keeping more or less close to the central idea of multifunctionality. Dwyer et al. (2007) titled this approach as a typical case of an institutional conservatism. This situation could be clearly visible by the financial allocation of the EU CAP 2nd pillar in the programming period 2007–2013 (Figure 1).

Although each country has its own specific interpretation, a certain number of clustered conceptualisations can be identified. According to agricultural green subsidies, there is a geographical discrepancy between the LFA and the agro-environmental payments implementation in the EU countries. Shucksmith et al. (2005) pointed out that these payments are distributed more to the richer areas, while the remaining Pillar 2 measures are used more frequently in poorer areas. There are three main reasons for this discrepancy (Shucksmith et al. 2005, pp. 67) "*(1) differing national priorities, (2) the uneven allocation of RDR funds and (3) difficulties co-financing RDR expenditure in poorer countries".*

In this sense, the authors of this paper tried to analyse the case of the Czech Republic in terms of the agricultural green subsidies perception by farmers from a more long-term view (pre-accession vs. the EU membership period). The argumentation of agriculture support by impacts on stabilization of farms was confronted by Baldwin and Wyplosz (2008, pp. 231) who stressed that around 80% of agricultural output is made by large and effective farms. So, according to the Baldwin's estimate, around 20% of farms received approximately 80% of the EU CAP expenditures. This estimate is also very relevant for the Czech case because the country's agriculture farm structure is unbalanced; the high number of small farms (about 90% of all farms) on the one hand, with a high acreage of large farms (about 70% of agriculture land) due to development during the communist regime (i.e., forced collectivization of the agriculture) (Tamáš 2010) on the other hand.

Within the realm of agricultural subsidies, environmental subsidies have a specific and special position. These "green payments" reflect a changing understanding of agriculture within the EU policy arenas and, as a consequence, a retooling of the program objectives

and strategies. Darnhofer's case study in Austria (2005) shows how "agricultural modernisation models" dealing with "green" subsidies improved social stability in rural areas. In fact, environmental subsidies are modern tools for the establishment and solidification of neo-rural communities in the triangle of Nature–Society–Rural Culture (Milbourne 2003).

There are some empirical studies evaluating the economic profit of the "green" farmers in our country. The empirically based study of Brožová (2010) shows that these organic farms are economically strong entities in more than 80% of enterprises with positive operating results. Heinze and Voelzkow (1993) stressed that "green" farming businesses are able to influence the employment and life of local municipalities because the payments for non-production activities enable farmers to stay and earn in rural areas where the productive role of agriculture is often quite limited. In reflection of these issues, a number of analyses were conducted on the rela-

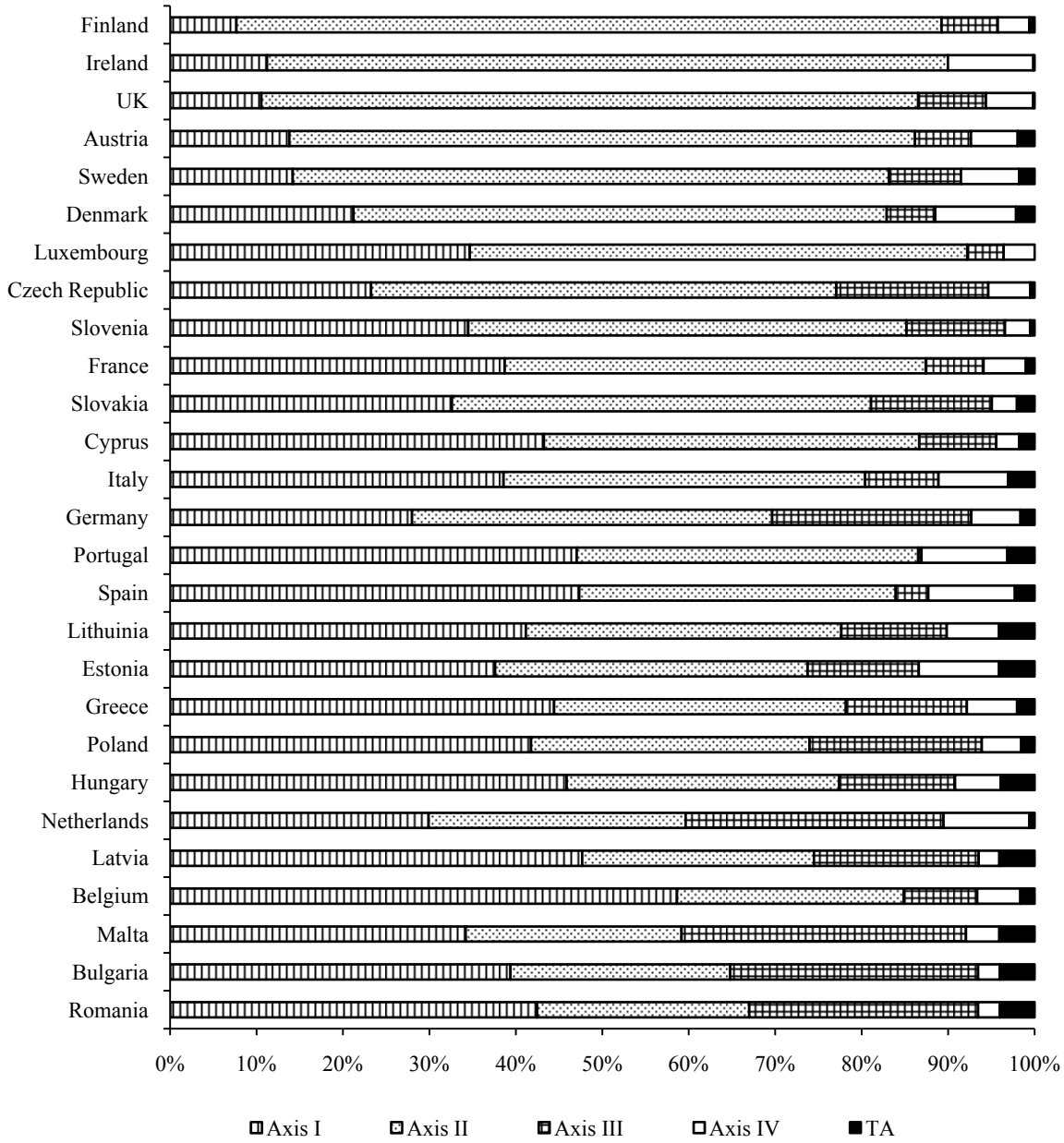

Figure 1. Rural Development Policy in the programming period 2007–2013: Relative importance of each European Agriculture Fund for Rural Development (EAFRD) axes by EU member states

Source: Own elaboration by using data of DG AGRI (2008)

Axis I: competitiveness, Axis II: environmental, Axis III: quality of rural life, Axis IV: local partnerships TA: technical support. Description of axis categories see Table 1.

tion of multifunctional agriculture (EU CAP 2nd pillar) to the comprehensive rural development (e.g. Shucksmith et al. 2005; Viktorova and Pelucha 2005; Montresor 2008).

The major analysis was elaborated by Shucksmith et al. (2005), who recognised these "green" payments as not corresponding to the overall cohesion objectives of the rural development policy. Unfortunately the methodology used in this analysis was not entirely suitable for explaining such comprehensive trends. Pelucha (2009) criticised this methodology mainly in terms of the NUTS 3 level selection and the method of cross-country analysis, the latter being especially problematic due to an institutional conservatism of each EU country and the different logics and approaches to the rural development policy.

The agricultural green subsides titles examined in our paper relate most closely to the Axis II in that the primary aims are to create and foster multifunctional agricultural and forestry systems useful to the Czech environment, nature and scenery more than the cohesive forces of the rural development policy. The primacy of the Axis II objectives and activities in the context of Czech policy are especially evident from a more detailed look at its goals and supported activities (Matoušková 2006) and in the financial resources dedicated to the Axis objectives (Table 1). Despite the priority given to the Axis II, there were some interesting assessments concerning the effect of social activity based on the Axis IV (LEADER).

Table 1. Division of resources from European agriculture fund for rural development (EAFRD) among major axes in Czech national rural development plan (ZFRV) over the period of 2007–2013

Axis	Share of total budget (%)
I (competitiveness)	22.39
II (environmental)	55.20
III (quality of rural life)	16.93
IV (local partnerships)	5.0
Technical support	0.48
Total	100.00

Axis categories:
I: Improvement of agricultural competitive advantages
II: Improvement of environment and scenery
III: Improvement in rural quality of life and diversification of rural economies
IV: Development of leadership capabilities, local partnerships, and rural planning (LEADER).

Source: Zpravodaj Agrobase 2006

Lošťák and Hudečková (2010) demonstrated that the transparency and public presentation of some local action groups activities were not always on a high level, and do not speak about the fact of the methodological challenge of the content analysis as an appropriate method how to asses the broader impact. Looking at the Axis and the directions of budgetary support, there is also a bit of a paradoxical technical inefficiency as a significant phenomenon in Czech agriculture. The average level of technical efficiency isabout 90% for agricultural companies according to Čechura 2010).

METHODS OF THE RESEARCH

We are focusing on the assessment of two key issues related to the context of Czech agricultural green subsidies implementation. The first one, based on our own empirical research, relates to the issue of farmers' behaviours, attitudes, and opinions in connection with environmental subsidies. The second issue, analyzed through the use of the national statistical data, is an assessment of the geographical "final localization" of these green subsidies in the Czech Republic.

The methods of the survey focused on farmers' behaviours, attitudes, and opinions in connection with environmental subsidies

Our initial survey in 2000 included 220 private farmers self-selected in our country. From this number, we selected 52 respondents for more intensive interviews focusing on the issues addressed in this paper. To select this latter group, we used a "snowball" sampling method (Ostrander 1984; Bailey 1992; Babie 1995). "Snowball" sampling (also called network, chain referral, or reputation sampling) was a relevant procedure to use in this special circumstance because it allowed us to identify and include farmers identified both by our research and by their reputations among other farmers as economically viable operators and community leaders. The use of actively engaged residents is a proven method for ensuring the identification of as wide as possible range of the relevant community impacts and processes.

The 2006 survey was administered to 100 persons, including 51 operators of private farms and 49 employees of cooperatives. Half of all the rural districts in the Czech Republic were represented in our sampling, which was made via random selection of participants from a comprehensive national list of farmers provided by the Czech Agrarian Chamber. Our

studies took place in the following regions: Jihočesky, Liberecky, Ustecky, Plzensky, Karlovarsky, Vysocina and Olomoucky. Our empirical findings are therefore based on a combination of a qualitative "dialogue method" and the quantitative results from the surveys. A variety of researchers (e.g. (Redfield 1960; Kraft 1989; Glenna 1996; Rikoon et al. 1996) have pointed to the need for using innovative qualitative methodologies in order to give the interviewees the opportunity to fully explicate their rationales for conservation behaviour.

Since we believed that the farmers' behaviours, attitudes, and opinions in connection with environmental subsidies would be influenced by the farm size and structural type (e.g. owner-operator, corporate employee/manager), in this paper we include the discussion from our 2006 survey to compare the responses of our two primary subgroups – private farmers family farmers (51% of our total sample) operating family farms and hereafter private farmers, and "corporate" farmers - those respondents (49% of our sample and hereafter "corporate" farmers) who are employed by business companies (limited or equity capitals) and cooperatives of owners.

The methods of the survey focused on environmental subsidies localization

Our survey also focused on the geographic location of the environmental subsidies in the Czech Republic. This was a particular research objective in 2008 and 2009 conducted through an ex-post evaluation of the Czech Horizontal Rural Development Plan (HRDP) 2004–2006 using the monitoring data of the HRDP (SAIF 2008) and the national statistical data – socio-economic indicators (CSO 2008). This programme had a largely environmental character, with the major parts of the LFA and AEM (agro environmental measures) in the total programme financial allocation (95.7% of the total programme budget). Our analysis looked at the set up of each measure, financial flows to final beneficiaries (farmers) and mutual interactions in the supported activities. By means of correlation and regression analysis, we evaluated the relationship between the impact of the programme (interventions in individual municipalities) and population stability in terms of low migration from the rural area, and other influencing indicators.

Subgroup description

Central demographic characteristics of the private farmers and "corporate" farmers in our sample are described in Table 2. Both groups are male-dominated and have similar age structures.

Most private farmers started their operations after 1990 as new farmers rather than as individuals who had participated in agricultural operations during socialism, and may be considered a "post-Velvet Revolution" farm generation. The vast majorities in both groups self-define their farming systems as "conventional;" only 10% of "corporate" farmers and 14% of private farmers identify themselves as users of "organic" farming systems.

Large operations dominate the "corporate" group, with 60% of company operations having at least 1000 hectares. Private farms are distinctively smaller, with 62% smaller than 100 hectares, and these farmers are equally distributed among the categories of 20–40, 40–60, 60–80, and 80–100 hectares. Farm size, as well as farm structure, significantly influences the farmer's economic strategies, and in this sample our two subgroups reflect the dichotomous situation of corporate-structured larger farms, and private-managed small farms in the Czech Republic.

The corporate farms employ in average 38 employees. Half of the private farms are farms relying totally on family labour for their operation, while roughly the same percentage utilise an average of three hired workers. The largest number of non-family employees working on any private farm is eight.

Table 2. Subgroup description (in %)

	Corporate farmers	Private farmers
Gender		
male	86	67
female	14	33
Age groups		
20–39	33	28
40–59	52	60
> 60	15	12
Years in farming		
< 17 years	64	90
> 17 years	36	10
Farming system		
ecological	10	14
conventional	87	75
other	3	11
Hectares farmed		
< 100	18	62
101–500	18	26
501–1000	4	12
> 1000	60	0

Private farmers (N = 51) and "corporate" farmers (N = 49)

Source: Own field empirical data 2006

Table 3. Primary motivation for subsidy application (in %)

Motivation	Economic necessity	Enhancing income	Ecological necessity	Other
Private farms	61	19	19	1
Corporate farms	62	19	14	5

Private farmers (N = 51) and "corporate" farmers (N = 49)

Source: Own field empirical data 2006

RESULTS AND DISCUSSION

Motivations for participation

As shown in Table 3, economic motivations are by far the most common reasons for subsidy applications among both groups in our sample, comprising nearly 80% of all responses. About 60% of respondents noted the primacy of the statement that "Without subsidies, agriculture will not be able to exist". A relatively lower level of farmers in both groups – 19% of private farmers and 14% of "corporate" farmers – cited ecological motivations as their main rationale for participation. This is an interesting result. We had anticipated finding a higher percentage of farmers citing ecological factors as the main justification for requesting green subsidies, which are focused mainly on landscape management and healthy environments. The responses from our sample indicate instead a high level of dependence of farmers on this income for the basic maintenance of their agricultural livelihoods. Thus they view subsidies more as an accessible economic asset stream than a strategy for enhancing the quality of their products or the environment.

Our respondents were in agreement that only persons engaged in agricultural production should be legally allowed to receive 'green" subsidies. They do not believe that landowners who do not farm, but instead lease their land to others, should be entitled to such payments. This is a critical sentiment in a country in which nearly 90% of the productive agricultural land is not farmed by the owners of that land.

Table 4. Primary impact of "green" subsidies (in %)

Non-productive effects	Corporate farms	Private farms
Landscape	36	33
Change of soil management	18	18
Family income	4	21
Employment	12	8
Village	14	6
Healthy food production	12	8
Tourism	4	5
Other	0	1

Private farmers (N = 51) and "corporate" farmers (N = 49)

Source: Own field empirical data 2006

Subsidy impacts

In spite of the dominance of economic motivations for participation, both of our sample groups agree (Table 4) that the main effects of "green" subsidies are more diverse and primarily non-economic, including improvements to the landscape and environment, changes in soil management, the production of healthier food, and positive impacts on employment and rural settlements.

Private farmers are much more likely (21% versus only 4% of "corporate" farmers) to report income stabilisation as an important effect of "green" sub-

Table 5. Use of individual subsidy titles as percentage of all titles use

Title of subsidies	Corporate farms	Private farms
Mowing of grasslands	26	25
Protecting soil resources & fertility	22	20
Grazing maintenance	18	18
Organic agriculture	8	10
Grasslands improvement	11	7
Technical crops	3	1
Forestation	0	3
Fast growing woods	1	1
Apiculture	1	1
Liming	1	0
Territory ecological stability	0	0
Catchments revitalisation	0	0
Do not apply	1	5
Other	8	9

Private farmers (N = 51) and "corporate" farmers (N = 49)

Source: Own field empirical data 2006

sidies. Differences in livelihood impacts between the two groups are also reflected in responses to the survey question of "Will subsidies restore or preserve private family farms?" Almost 60% of the private farmers agreed with this statement, which constitutes a positive perception of one of the social objectives of the EU agricultural policy implemented in the Czech Republic. Corporate farm respondents were less sanguine about the program's contribution to enhancing the private family farm structure in the Czech Republic, with nearly half (46%) claiming the subsidies would not help in this way, and another 29% claiming they did not know.

Types of "green" subsidies

The survey respondents reported receiving "green" subsidies of various types (Table 5). Among cooperatives and stock companies, the largest percentages of operations use environmental subsidies for the maintenance of grasslands by mowing or grazing. This result parallels the general trend in Czech agriculture in 2005 towards improvement and protection of grasslands. Relatively popular (22%) as well is the payment of a subsidy for protecting soil resources in more environmentally – fragile agricultural regions (LFA program). Less-frequently used are subsidies to support reseeding or restoration of pasture areas (11%), and the organic farming title is used in just 8% of our corporate cases. There are negligible levels of participation in activities emphasizing such things as forestation, growing high-value "technological" crops (e.g. rape for oilseed), fast-growing trees, beekeeping, and river and riparian revitalisation. Interestingly, the patterns of the use of "green" subsidies on private farms are very similar to those of corporate farms.

Comparison of "critiques" of "geeen" programs in 2000 and 2006

The Czech Republic joined the EU in 2004. Table 6 summarizes the 2000 and 2006 survey responses, in other words before and following the EU membership, to a series of questions probing the perceptions of obstacles and constraints in the environmental title program. The overall results are recorded in Table 6, and some comments follow.

Farmers remain very critical in their evaluations of the subsidy program and title improvement. The absolute majority of both groups believe that the situation has not significantly improved as a consequence of joining the EU. Complicated paperwork requirements and problems with the application procedure for subsidies are cited as a constraint by large majori-

Table 6. Comparison of "green" subsidy constraints, 2006 and 2000* (in %)

	2006		2000 private farms	Average all
	corporations	private farms		
Issue				
Administrative obstacles	80	67	90	79
Changing titles	72	68	90	76
Completing the work	30	61	95	62
Strict administrative control	60	48	50	52
Benefits go to non-rural businesses	23	39	60	41
Sufficient control of the subsidies implem.	29	59	32	40
Double tax payment	47	33	30	37
Subsidies are profitable only for larger farms	3	46	62	37
Larger farms have program advantage	5	49	55	36
Satisfaction with CAP				
Financial level of CAP subsidies	82	74	N/A	78
Access to the CAP subsidies	65	60	N/A	63

*While the 2006 survey reported on in this article included groups of private farmers (N = 51) and "corporate" farmers (N = 49), the 2000 research only examined private farmers (N = 52)
N/A – not applicable

Source: Own field empirical data 2000, 2006

ties of farmers – 80% among "corporate" farmers and 67% among private farmers. Unfortunately a strongly negative perception remains as well about the frequent changes in the names, purposes and profiles of the environmental titles. Negative evaluations of these changes were cited by more than two-thirds of all respondents, including 68% of private farmers and 72% of respondents in the corporate farm group. On the other hand, the problem of completing the work (for example, with the relatively popular subsides for "mowing of grasslands," completing the system would mean that the cut hay is used for other agriculture purposes, and does not simply lay in the meadow) improved from 95% of the negative evaluation to 61% in private farmers and 30% to "corporate" farmers.

The opinions of our respondents on a number of issues related to the operation of environmental subsidy programs differ in important respects. On the issue of whether or not there is a sufficient control and monitoring of the implementation of subsidy-related activities, 59% of private family farmers believe that the program has improved. In contrast, only 29% of cooperative employees agree with this statement, i.e. 71% claim that the issues of accountability and effective monitoring have not improved and that this contributes to the program ineffectiveness and inefficiencies.

The two groups have different opinions on other issues regarding who has the easiest access to, and receives most benefit from, subsidies. We asked the respondents if they believed that the subsidies are profitable only for larger farms and if the former cooperative and state farms had a better access to these programs. Respondents from cooperatives farms overwhelmingly disagree (97%) with these statements, reporting that the subsidy policies and programs do not unfairly benefit big enterprises or transformed state enterprises. Private farmers, especially those who farm smaller numbers of hectares, have a different opinion. Almost one half of the private farmers (46%) feel that the former subsidy programs favour cooperatives and highly capitalised farms, and 49% believe that farm businesses with larger production areas have an easier access to the subsidies.

The last question to be mentioned here focuses on whether or not the respondents believed that the subsidy benefits and profits were being received by individuals living outside the rural areas to which the funds were in principle directed. Among the "corporate" group, less than one-quarter (23%) felt that that this redirection of funds was occurring, a third of respondents did not have any opinion, and 44% of corporate farm representatives believed the funds were getting to the rural villages to their benefit. In contrast, 39% of private farmers believed that the funds were inappropriately being received by the non-rural constituencies and only 29% felt that the program was effectively targeting the resources to farmers living and working in the countryside. The Czech government's national strategic plan for the country's rural development for the period of 2007–2013.

Private farmers remain critical about the subsidy programs, and are more likely to question whether these programs are having their desired effects and assisting the individuals and farms that should properly benefit from the subsidy policies. With only one exception– their perception that the program monitoring and control has improved – private farmers in the Czech Republic remain sceptical about the conduct, quality, and distribution of benefits from the "green" subsidy system. "Corporate" farmers are much more favourable in their evaluations, and they are generally satisfied with the present system of "green" subsidies.

Most of our informants farm either entirely or in part on the leased land. Among private farmers, 60% of informants reported renting land, while the percentage climbs to 80% among cooperatives and business companies. These percentages reflect two trends: the chequered pattern of land ownership that now exists among the privately-owned parcels in the Czech Republic, and the as yet uncompleted process of land privatisation.

Assessment of the "green" subsidies localization in the Czech Republic, 2004–2006: Socioeconomic conditions of recipient municipalities

The HRDP was launched in 2004 and the implementation and payment systems were different from what farmers had been used to previously (e.g., advance payment system). Although the Czech Republic had the option to draw greater financial resources for the HRDP than for the past rural development programmes, much stricter conditions applied for the payment entitlements. It would be fair to say that it took around two years for the HRDP administrative systems to fully adapt and stabilise after the county joined the EU.

There was also the problem that, at the beginning, farmers saw the HRDP as a "complement" to direct payments and therefore the general publicity at the early stage of the implementation of the programme was rather poor. Moreover, the external context of the agricultural policy was changing, e.g., commodity prices were quite different at the time of joining the EU in 2004, in comparison with the present.

The implementation of the AEM in the Czech Republic was unique due to the very large and unprecedented number of applications for this measure (over 10 000 in the Czech Republic compared to only 800 in neighbouring Slovakia). In the case of the HRDP implementation, it was the development of rural areas that was mostly affected by the AEM.

In terms of synergy among environmental subsidies, there has been a very good interaction of the LFA with the AEM. For example, the applicants often chose to maintain permanent grassland under the AEM where the synergy effects were the greatest. It is further possible to say that the overlapping terms of the EU rural development regulation contributed to the synergy as well; i.e., establishing a situation in which the applicants were generally able to receive both the LFA and AEM payments.

The correlation of relationships of activities supported by the HRDP in municipalities is presented in Table 7.

The fact that the HRDP payments were higher in municipalities with larger cadastral areas is to be expected. A strong positive correlation is the trend here, which confirms that the majority of payments went to large municipalities (in terms of physical area) with significant areas for farming or forestry activities.

Statistical analyses have not confirmed an explicit dependency or direct connection between the amount of payment and the positive net migration in the municipality. In order to examine this issue more closely, we performed a more detailed analysis of more specific sets of municipalities (defined, for example, by size categories, municipalities with the highest payments, and so on). Here again, the analysis has not shown any significant relationships between the receipt of the HRDP financial resources and population stability in terms of low migration from the countryside

There is a substantial demographic decline in a number of municipalities with the highest number of applications or with the highest total payments. On the other hand, a number of municipalities (according to these indicators) have experienced population growth. It is therefore most likely that the population changes are more affected by other factors and specific characteristics. In a number of cases, the geographical location of municipalities (attractive location vs. peripheral location) is the main causal effect. In other areas, it may well be the general economic situation of the micro region connected with an inherited and possibly negative economic base, plus a number of other specific indicators (average salaries, unemployment rate, accessibility of municipalities etc.) Currently, it is not possible to establish a significance hierarchy of factors influencing the population stability of municipalities; nevertheless, it is reasonable to conclude that the HRDP interventions only have had

Table 7. Statistical dependencies among chosen indicators

	HRDP payment	Municipality area	EAI	EE and VE.	ASE	UE	Net migration	Number of inhabitants
HRDP payment		0.503**	0.152**	–0.116**	0.111**	0.129**	–0.121**	0.434**
Municipality area	0.503**		0.184**	–0.186**	0.046**	0.128**	–0.123**	0.654**
EAI	0.152**	0.184**		–0.015	0.073**	0.059**	–0.307**	0.207**
EE and VE	–0.116**	–0.186**	–0.015		–0.374**	–0.372**	–0.001	–0.147**
ASE	0.111**	0.046**	0.073**	–0.374**		0.569**	0.063	0.357**
UE	0.129**	0.128**	0.059**	–0.372**	0.569**		0.075**	0.383**
Net migration	–0.121**	–0.123**	–0.307**	–0.001	0.063	0.075**		–0.034*
Number of inhabitants	0.434**	0.654**	0.207**	–0.147**	0.357**	0.383**	–0.034*	

*statistical dependency cannot be refused for 95% significance level, **statistical dependency cannot be refused for 99% significance level

HRDP payment = total payments paid to the applicants in the municipality concerned; municipality area = total area of the cadastral area of the municipality (ha), EAI = number of economically active inhabitants; EE and VE = percentage of the municipality's inhabitants with elementary and vocational education; ASE = percentage of the municipality's inhabitants with advanced secondary education; UE = percentage of the municipality's inhabitants with university education;, net migration = relative demographic growth (decline) in the municipality between 2004–2006; number of inhabitants = average number of inhabitants living in individual municipalities in 2004–2006

Source: SAIF (2008), CSO (2008), statistics program calculations

a limited or indirect effect on the population stability. In the context of the current structure of inhabitants employed in the country, the percentage of inhabitants benefiting from the HRDP payments was low, this program was only one of a number of support programmes implemented during the 2004–2006 period, and the effect of the OP RDMA, for example, might have been more significant.

The education profile of the inhabitants of municipalities was also available and therefore analysed. A slightly positive correlation in the relationship between the HRDP payments and the education structure shows that more applications for payments were approved in the municipalities with a higher percentage of inhabitants with the advanced secondary or university education.

DISCUSSION

Contemporary discussions on environmentaly - friendly agriculture can be roughly divided into two main streams:

– Authors who continue to mainly stress the role of economic motivations in the adoption of alternative systems and who champion economic profitability as the main factor that ought to be considered when asking whether to accept or reject the environmentally-friendly and sustainable agricultural production systems (O'Connel 1992; Wossink et al. 1992; Bureau 2002; Baldwin and Wyplosz 2008)
– Authors who emphasise the inclusion of other variables in addition to economic motivations and cost-benefit analyses (Toledo 1990; Thomson 1995; Wilson 2007; Pelucha 2009). This group is much more likely to stress the need to include the issues such as culture, traditions, and ethical standards as important factors in discussions of the agricultural policies, programs, and appropriate farming systems.

A dominant theme in the first approach is expressed by O'Connel (1992) who writes that *"major adjustment in farming practices will not occur until farm policy is changed and economic, environmental, and social goals are fully incorporated into the accounting framework"* (O'Connel 1992, p. 5).

The importance of economic conditions is based on the fact that *"Usually the primary objectives of the agricultural entrepreneur are continuity of the farm and sufficient income for the family. To realise these objectives, the farm organisation has to be consciously adapted to changing external conditions"* (Wossink et al. 1992, p. 21).

Among the most important early and representative writings that champion the alternative approach are M.V. Toledo (1990), G.F. Vaughn (1992) and P.B. Thomson (1995). These authors agree that economic goals and objectives are important for the farm household sustainability, but they are not the only ones relevant for the long-term adjustment. As Thomson notes in his volume on "The Spirit of the Soil", *"Farmers have long been thought to be natural stewards of the land. The ideal of good farming has been expressed in terms of care for the soil, water, plants, and animal under a farmer's supervision"* (Thompson 1995, p. 73).

The attitudes towards soil, work and landscape expressed by our sample, particularly the private farmers, affirm the main ideas of this alternative conceptualisation of agricultural activity. In our opinion, farmers' attitudes and decisions are influenced both by internal factors such as the land ethics and values, and by the external contexts in which they labour – including economic, social, and ecological conditions. Then we can distinguish between organic and ecological farmers (Zagata 2010). We use the term "organic" for the external factors like technology of farming and products from these farms as well as for the subsidies programs related to these results. "Ecological farming" then means for us rather internal factors, ecological shift in the farmers' consciousness demonstrated like his/her way of life.

As for the relative significance of ecological and customary-cultural motivations for farmers' decision-making regarding their agricultural systems, our empirical examinations confirm that independent operators act out of a complex system of internal values and attitudes within the context of the perceived external economic and social realities. A similar approach could be also found in the book *Threshing in the Midwes*t (Rikoon 1988).

The significance of specific internal and external factors varies according to the particular decisions and contexts. The shift to organic farming, which reflects both internal and external motivations, is revealed in Table 8. Of relevance to the present discussion is that agricultural policies can facilitate the desires of farmers to adopt organic farming systems by providing economic incentives. For example, the relative stagnation in the growth of organic (ecological) farmers during the 1994–1997 period must be attributed in part to the withdrawal of environmental payments from the Czech agricultural subsidy programs between 1993 and 1997. While the number of organic (ecological) farmers increased by 33% between 1993 and 1994, during the next three years of government inactivity the rate of transformation declined signifi-

cantly. In contrast, the number of organic farmers more than doubled between 2007 and 2009, from an initial level of 1318 organic farmers in 2007 to 2689 organic farmers in 2009. The main reason for this huge change in the number of organic (ecological) farmers can be attributed to the setting up of the Czech Rural Development Programme.

The main reasons for the failure of the ecological subsidies scheme in the Czech Republic at the end of the 1990s can be summarised into three points:

– "Green" subsidies were not sufficiently connected with the economic realities of Czech producers. For example, many of the products supported by the subsidies had little or no market value
– The range of effects of subsidies was not fully understood or taken into account in the implementation of the program. For example, subsidies for mowing meadows prohibited the sale of the mown hay, and mulching and other practices aimed at increasing production had negative impacts on soil fertility (e.g., decreased the Ph) and the biodiversity of the riparian ecosystems in natural and protected areas,
– The subsidies were not directed to the most appropriate constituencies. For example, rather than requiring that only practicing farmers (and perhaps only those living in rural areas) could receive the subsidies, the rules allowed the owners of land who were not themselves involved in agriculture (or living in rural areas) to successfully apply for payments. In their chase for governmental resources, a group of "new expert farmers" arose – individuals whose expertise lay not in agriculture but in successfully navigating the bureaucracy solely to benefit from the "green" subsidies (Lapka et al. 1999).

Table 8. Number of eco-farms and hectares cultivated in the Czech Republic, 1990–2009

	Number of organic farms	Acreage (ha)	Ecologically cultivated land as % of all farm land in CR
1990	3	480	–
1991	132	17 507	0.41
1992	135	15 371	0.36
1993	141	15 667	0.37
1994	187	15 818	0.37
1995	181	14 982	0.35
1996	182	17 022	0.40
1997	211	20 239	0.47
1998	348	71 621	1.67
1999	473	110 756	2.58
2000	563	165 699	3.86
2001	654	217 869	5.09
2002	721	235 136	5.50
2003	810	254 995	5.97
2004	836	263 299	6.16
2005	829	254 982	5.98
2006	963	281 535	6.61
2007	1 318	312 890	7.35
2008	1 946	341 632	8.04
2009	2 689	398 407	9.38

Source: Basic statistical data of ecological agriculture for the year 2009 (in Czech) webpage of the Ministry of Agriculture of the Czech Republic (http://eagri.cz/public/eagri/file/48172/statistika_zakladni_31_12_2009.pdf)

The current subsidy system seems to be avoiding this mistake, at least as reflected in the farmers' responses to the questions concerning motivations for the program participation and their perceptions of the effect of subsidies. Economic returns and benefits remain the main motivation for the farmers applications for ecology subsidies, but at the same time, they cited environmental improvements and rural landscape protection as the most common responses to the question of "What was the biggest effect of the subsidy?" This linkage between the economic and ecological perceptions also is evident in the farmers evaluations of the environmental titles from the perspective of their contributions to the creation and maintenance of the countryside.

CONCLUSIONS

Our research demonstrates the interesting disharmony in terms of the actual situations of agricultural support in form of the "green" or environmental subsidies and the perceptions of this support by Czech farmers. On one side, there is the presence and positive role of multifunctional agriculture in the Czech Republic that has improved somewhat since joining the EU in 2004 and thereby enabled Czech farmers to participate in the new environmental subsidy title programs. The critical view of Czech farmers on the other side, especially from the perspective of small private farmers, suggests that the conditions of support were not as optimal for them as for the larger corporate farms.

In spite of this perception, we must recognize that small farmers are receiving more support than they did five and, especially, ten years ago. The number

of private farms is holding steady in some areas and growing in others, and no doubt the subsidy programs are the contributing factor. But we cannot yet say that there has been a significant enhancement of the private farms in terms of their longer-term viability as an important dimension in Czech agriculture.

An additional focus of this paper was an analysis of the socioeconomic situations in municipalities where environmental subsidies were spent. It can be assumed that "green" subsidies in the HRDP have affected the stabilization of the inhabitants in the countryside, i.e. inhabitants working in the agricultural sector or in forestry who applied for the HRDP payments. The influence of the programme in other categories is probably very limited and indirect. Regarding the fact that the percentage of inhabitants working in the primary sector is decreasing, the influence of the programme on the stabilization of the livelihood interests of inhabitants in the countryside is small.

This is clearly a relatively short period from which to make any large empirical generalisations about the past or to make any certain predictions about the future. On the other hand, we can say that there have been positive shifts in the rural social and environmental health of rural areas in the Czech Republic due to the incorporation of the EU multifunctional perspective in Czech agricultural policy.

Acknowledgments

The research reported in this article was supported by the EF Faculty, University of South Bohemia, scientific intention MSM No. 6007665806 as well as National Scientific Foundation (NSF) US.

REFERENCES

Babie E. (1995): The Practice of Social Sampling. Wadsworth, Belmont, CA.

Bailey K.D. (1992): Methods of Social Research. Free Press. New York, NY.

Baldwin R., Wyplosz Ch. (2008): Ekonomie evropské integrace (Economics of the European Integration). Grada Publishing, Corp.; ISBN 978-80-247-1807-1.

Brožová I. (2010): Economic profit of ecological farmers in the Czech Republic. Agricultural Economics – Czech, *56*: 243–248.

Bureau J.Ch. (2002): Enlargement and reform of the EU Common Agricultural Policy – impacts on the western hemisphere countries. Inter-American Development Bank, Washington D.C., December 21, 2002.

CSO (2008): Vybrané socioekonomické ukazatele České republiky (Selected socioeconomic indicators of the Czech Republic). Statistical data provided by the Czech Statistical Office in 2008.

Čechura L. (2010): Estimation of technical efficiency in Czech agriculture with respect to firm heterogeneity. Agricultural Economics – Czech, 56: 183–191.

Darnhofer I. (2005): Organic farming and rural development: Some evidence from Austria. Sociologia Ruralis, *45*: 308–317.

DG-AGRI (2008): Rural Development in the European Union – Statistical and Economic Information – Report 2008. Directorate-General for Agriculture and Rural Development, EU, December 2008.

Dwyer J., Ward N., Lowe P., Baldock D. (2007): European rural development under the Common Agricultural Policy's "second pillar": institutional conservatism and innovation. Regional Studies, *41.7*: 873–887, October 2007.

Glenna L. (1996): Rationality, habitus, and agricultural landscapes: ethnographic case studies in landscape sociology. Agriculture and Human Values, *13*: 21–38.

Heinze R.G., Voelzkow H. (1993): Organizational problems for the German Farmers Association and alternative policy options. Sociologia Ruralis, *33*: 25–41.

Kraft S.E. (1989): Is there a place for ethnomethodology in the analysis of agricultural public policy – the case for the environment. In.: Second Biennial Conference of the Agriculture, Food, and Human Values Society, Little Rock, AK, November 1989.

Lapka M.,Rikoon J.S., Cudlínová E. (1999): Private farmers and contemporary conservation subsidy programs in the Czech Republic: Farmers opinions and programs implications and Water Conservation Policies and Programs. In: Napier T. L., Napier S. M., Tvrdon J. (eds.): Successes and Failures. CRC Press (USA), Boca Raton, London, New York, Washington, D.C., Chapter 31, pp. 457–491.

Lošťák M., Hudečková H. (2010): Preliminary impacts of LEADER+ approach in the Czech Republic. Agricultural Economics – Czech, *56*: 249–265.

Marsden T., Banks J., Bristow G. (2002): The social management of rural nature: understanding agrarian-based rural development. Environment and Planning A, *34*: 809–825.

Mahé P.L., Ortalo-Magné F. (1999): Five proposals for a European model of the countryside. Economic Policy, *14*: 81–131.

Matoušková K. (2006): Národní strategický plán rozvoje venkova ČR na období 2007–2013 (National strategic plan for the rural development on the 2007–2013). Zpravodaj Agrobase (Agrobase Bulletin), Nov. 28, 2006: 15–17.

Milbourne P. (2003): Nature-society-rurality: making critical connections. Sociologia Ruralis, *43*: 193–195.

Montresor E. (2008): Cohesion policies and rural development policies at regional level in the enlarged EU. RSA

Annual International Conference, Prague 27th–29th May 2008. In: Hardy S., Larsen L.B., Freeland F. (eds.): Regions: The Dilemmas of Integration and Competition. Regional Studies Association, Seaford; ISBN 978-1-897721-33-9.

O`Connel, P.F. (1992): Sustainable agriculture – a valid alternative. Outlook on Agriculture, *21*: 5–12

OECD (2001): Multifunctionality – Towards an Analytical Framework. OECD publications, Paris; ISBN 92-64-18625-5.

Ostrander S. (1984): Women in the Upper Cla.ss Temple University Press, Philadephia, PA.

Pelucha M. (2009): The rural development policy in the framework of the EU CAP: critical analysis of the territorial cohesion in the CR. [Dissertation Thesis.] Department of Regional Studies, University of Economics, Prague.

Redfield R. (1960): The little Community. Peasant Society and Culture. University of Chicago Press, Chicago, IL.

Rikoon J.S. (1988): Threshing in the Midwest 1820-1940. A Study of traditional Culture and technological Change. Indiana University Press, Bloomington and Indianapolis, IN, pp. 154–163.

Rikoon J.S., Constance D.H., Galetta S. (1996): Factors affecting farmers' use and rejection of banded pesticide applications. Journal of Soil and Water Conservation, *51*: 322–334.

SAIF (2008): Data for all payments within the HRDP 2004–2006, data were collected by the SAIF – State Agricultural Intervention Fund which is an intermediate body of the Czech Ministry of Agriculture. Data were used in the ex-post evaluation of the HRDP in 2009.

Shucksmith M., Thompson K.J., Roberts D. (eds.) (2005): The CAP and the Regions – the Territorial Impact of the Common Agricultural Policy. CABI publishing, Wallingford, UK; ISBN 0-85199-055-X.

Tamáš V. (2010): Problém duální struktury zemědělských podniků v evropských tranzitivních ekonomikách. (Problem of the dual structure of farms in European transition economies). Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis, *58*: 571–578.

Tangermann S. (2006): The Future of the CAP under WTO Reform Pressure. In.: Vision of a Long-Term Agricultural and Rural Development in EU. Prague, May 2006.

Thompson P.B. (1995): The Spirit of the Soil. Agriculture and Environmental Ethics. Routlege, London, New York, NY.

Toledo M.V. (1990): The ecological rationality of peasant production. In.: Altieri M.E., Hecht S.H. (eds): Agroecology and Small Farm Development. University of California, Los Angeles, CA.

Vaughn G.F. (1992): Ecology, economy and ethics. Economic policy outlook. Delaware Agriculture Natural Resources, *2*: 1–4.

Viktorová D., Pělucha M. (2005): Uplatnění a evaluace předvstupní pomoci EU ve venkovských oblastech České republiky v kontextu vývoje zemědělské a venkovské politiky v Evropě (Applicated and evaluation of the EU pre-accession support in rural areas of the Czech Republic in the context of the agricultural and rural development policy in Europe). Foundation "Nadace Josefa, Marie a Zdeňky Hlávkových", Economic institute of Josef Hlávka, October 2005.

Wilson G.A. (2007): Multifunctional agriculture: a transition theory perspective. CABI publishing, Wallingford, UK; ISBN 978 1 84593 256 5.

Wossink G.A.A., de Koeijer T.J., Renkema J.A. (1992): Environmental-economic policy assessment: a farm economic approach. Agricultural Systems, *39*: 421–438.

Zagata L. (2010): How organic farmers view their own practice: results from the Czech Republic. Agriculture and Human Values, *27*: 277–290.

Zpravodaj Agrobase (2006): Bulletin Agrobase of the Ministry of Agriculture of the Czech Republic (in Czech). November 18, 2006, pp. 7–9.

Arrived on 5th January 2011

Contact address:

Miloslav Lapka, University of South Bohemia in České Budějovice, Studentská 13, 370 05 České Budějovice, Czech Republic
e-mail: miloslav.lapka@centrum.cz