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Assessing the views of farmers on the landscape and inclusion in the Ecological Focus Area (EFA) in the context of mandatory (greening) standards

Abstract: *The purpose of the paper is to assess the views of farmers on the landscape and their possible inclusion in the Ecological Focus Areas. The study used data from a survey among 451 farmers from Czech and Moravia conducted in 2016 in a form of questionnaire. We demonstrate that apart from the support for registration of landscape features, agricultural policy in the Czech Republic should be also focused on the support for forming and assessing new landscape features. This needs an extensive discussion with the participation of different stakeholders and policy-makers.*

Keywords: *acceptance of landscape features, Ecological Focus Area, greening, a questionnaire with farmers*

Agriculture covers 54% of the total area of the Czech Republic. Half of the agriculture land resources are in the less-favourable areas (earlier marked as LFA, currently known as Areas with Natural Constraints, ANC); they are thus the areas which support mainly the formation and maintenance of meadows and pasturelands. Agriculture in the Czech Republic can be distinguished for the high range of leased land (90%) and a higher ratio of large farms. Companies with more than 50 hectares of agriculture land represent 92.9% of the total agriculture land. The large area of land blocks and multiple land ownership poses a complication for the introduction of certain measurements which improve the influence of agriculture on the environment and landscape stability. Landscape features were often formed spontaneously, e.g. by omitting barren and stony lands or wetlands, growing over free space between land blocks. Another frequent reason was marking the ownership by forming linear features such as field margins or hollow ways on the border of the areas.

During socialization of agriculture (until the 1990s) a significant number of landscape features ceased to be formed; it was mainly the case of the linear ones, which often fulfil the retentive and antierosion role in the landscape. For the agriculture landscape to fulfil its eco-stabilizing role, to retain water in the landscape, to decrease soil degradation processes, to alleviate the impact of climatic change as well as support higher biodiversity, new landscape features should be formed and the current ones should be maintained. Formation of new landscape features is subsidized and realized mainly within the land restoration and using subsidy programmes of the Ministry of the Environment. However, in some regions, there are still large unified areas of land blocks without any landscape features.

Common Agriculture Policy (CAP) introduces instruments which could help to arrange landscape more conveniently; one of these instruments is also 'greening', which puts landscape features into one block as Ecological Focus Area (EFA).

A working group formed at the Institute of Agricultural Economics and Information (IAEI) assessed farmers' opinions on forming new EFA areas, namely landscape features. In the first part of the study, we analyze the current state of landscape features in a selected area of the Czech Republic. The aim was to learn what record of landscape features there is in LPIS, how it reflects the reality in the landscape, and to identify the landscape potential for the future placement of landscape features. In the second part of the study, a questionnaire was conducted whose respondents were farmers. The questionnaire aimed to find out if farmers are interested in the use of landscape features as EFA facing the terms and conditions of 'greening'. To learn about the willingness or reluctance to implement landscape features to EFA could be essential for further steps of Common Agricultural Policy (CAP).

The outcomes of landscape features recording

Recording and updating of a landscape feature as EFA in LPIS are conducted by Regional Departments of SAIF (State Agricultural Intervention Fund) based on internal or external initiative. The EFA – landscape features need to be distinguished as linear and non-linear landscape features:

- linear: field margin, terrace, trees in a line, ditch,
- non-linear: grass valley line, trees in a group, an isolated tree, wetland.

Landscape features can be classified as outer, if they are attached to the land block, or inner if they are surrounded by land blocks. Statistics of the current number of landscape features and EFAs in the Czech Republic was processed based on the data acquired from the Ministry of Agriculture and SAIF.

Table 1 shows the declared landscape features in the Czech Republic recorded in LPIS in 2015. In comparison with other EFAs landscape features are used in lower number and on small acreage.

Table 1. Declared EFAs in the Czech Republic (2015)

Submeasure	Number	Acreage (ha)	Expressed in %
N-fixing crops	22,838	205,236.92	61.18
Catch crops	8,580	110,658.24	32.99
Bare fallow	2,367	9,088.74	2.71
Vegetative fallow	2,192	8,128.72	2.42
Headland	1,622	1,835.39	0.55
Landscape features	1,511	297.21	0.09
Forested areas	144	151.88	0.05
Fast-growing tree species	33	82.62	0.02
Total	39,287	335,479.72	100.00

Source: SAIF, Report EFA 2015 (Report on EFA features 2015 in declared acreage), June 2016.

Declared landscape features represent only a fragment of the existing landscape features on agriculture land. If all existing and potential landscape features, mainly buffer zones along with water bodies and forests, were declared, the ratio of landscape features on agriculture land would be as much as 3.9%¹.

In the past, farmers were not interested in implementing landscape features into maintained area because landscape feature areas are small in comparison

¹ Study of the thematic task 'Potential of Landscape Features for Implementation of Green Direct Payments in Czech Farmed Landscape', Marie Trantinová, Ivana Darmovzalová, Michal Brokl, Jan Ausfíř.

with necessary EFA. The first part of the study, which was conducted in two Czech regions (the South Moravian and Pilsen), was dedicated to a detailed analysis of current landscape features data as well as their unrecorded potential in the landscape where three types of landscape features were assessed:

- landscape features registered in LPIS,
- landscape features plotted under the Ministry of Agriculture methodology, but unregistered in LPIS, and
- unregistered landscape features not plotted under the Ministry of Agriculture methodology, but based on natural principles and showing potential for the future plotting and acceptance, e.g. as EFA.

The focus area of the study was in two locations which both represented the character of agriculture land in the Czech Republic. In the Pilsen Region (western Bohemia) it was a rugged landscape with higher ecological stability, and in the South Moravian Region, it was lowland location with large land blocks and lower ecological stability. The locations are shown in Figure 1.

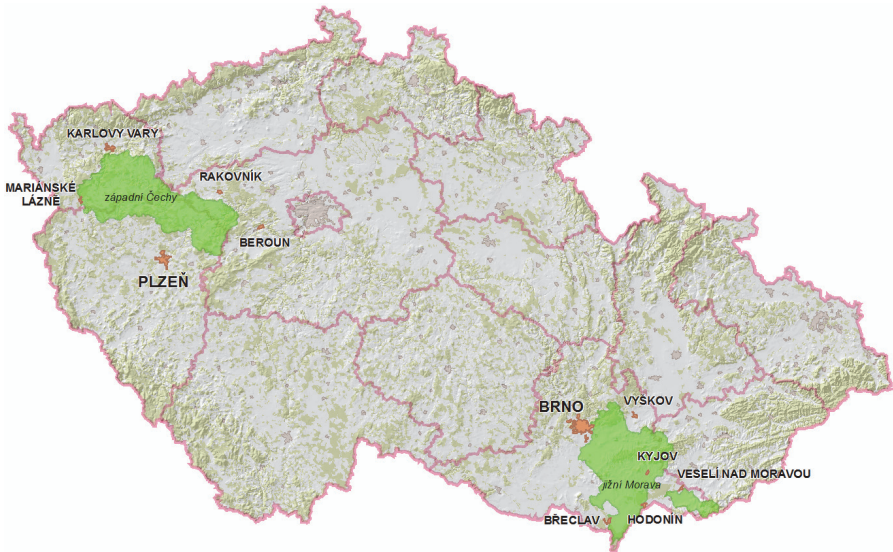


Figure 1. Two focus areas for the study – South Moravia (SM) and Western Bohemia (WB)

The landscape features listed in LPIS were downloaded from the web application named “Veřejný export dat” (Public Data Export)² for each of the cadastral area which is in the focus area.

The landscape features which are not listed in LPIS were newly plotted under the Ministry of Agriculture methodology. The plotting was used exclusively for this study and it was not included in the LPIS database.

² <http://eagri.cz/public/app/eagriapp/lpisdata/>

The landscape features, which are not listed and which were not included in the plotting under of the Ministry of Agriculture methodology, but have a natural base and represent a potential for the future plotting as EFA and a possibility to be accepted by the Ministry of Agriculture, include two kinds of features:

- buffer strips along watercourses,
- soil strips along forest edges.

The detected and plotted landscape features in the focus area including all the three above-mentioned categories are stated in the Tables 2-4 below. The tables also express the percentage of the individual landscape features among the total number of landscape features.

All in all, 4,244 landscape features covers a total of 329 ha of agricultural area or other soil. Trees in groups represent the highest number of registered landscape features. Apart from trees in a line, they cover the largest area in total.

Table 2. Landscape features registered in LPIS, the overview of the number, area and the percentage

		All LF	Hollow way	Terraces	Grass valley line	Trees in groups	Trees in line	Isolated tree	Ditches	Wetland
Total area	number	4,244	701	31	51	2,205	111	1,142	3	0
	ha	329	128	2	46	125	22	4	2	0
	%	100%	17%	1%	1%	52%	3%	27%	0%	0%
JMK	number	934	220	23	10	267	48	363	3	0
	ha	91	47	2	9	14	16	2	2	0
	%	100%	24%	2%	1%	29%	5%	39%	0%	0%
PK	number	3,310	481	8	41	1,938	63	779	0	0
	ha	238	82	1	37	111	5	2	0	0
	%	100%	15%	0%	1%	59%	2%	24%	0%	0%

Note: JMK – Jihomoravský Kraj (South Moravian Region), PK – Plzeňský Kraj (Pilsen Region), LF – landscape features

Source: The study of the thematic task 'Potential of Landscape Features for Implementation of Green Direct Payments in Czech Farmed Landscape', 2016.

It was found that there are far more landscape features which could be plotted under the methodology, but they are not registered in LPIS. Table 3 shows an overview with an example that the total number of landscape features for both areas is 16,954 and they are in the area of 2,149 ha. Trees in groups are the most numerous type of landscape feature in this group as well.

Table 3. The overview of the number, area and the percentage of the total number of LF for the area

		All LF	Hollow way	Terraces	Grass valley line	Trees in groups	Trees in line	Isolated tree	Ditches	Wetland
Total area	number	16,954	4,581	984	194	5,910	561	4,711	6	7
	ha	2,149	962	364	124	427	232	34	0	6
	%	100%	27%	6%	1%	35%	3%	28%	0%	0%
JMK	number	7,413	2,202	984	34	1,647	312	2,230	2	2
	ha	1,231	514	364	14	108	206	20	0	5
	%	100%	30%	13%	0%	22%	4%	30%	0%	0%
PK	number	9541	2379	0	160	4263	249	2481	4	5
	ha	918	447	0	110	319	27	14	0	1
	%	100%	25%	0%	2%	45%	3%	26%	0%	0%

Note: JMK – Jihomoravský Kraj (South Moravian Region), PK – Plzeňský kraj (Pilsen Region), LF – landscape features

Source: The study of the thematic task 'Potential of Landscape Features for Implementation of Green Direct Payments in Czech Farmed Landscape', 2016.

The landscape features which are not listed in LPIS and which are not currently included in the Ministry of Agriculture methodology for their plotting are recognized as EFA in some EU countries. There are buffer zones based on natural principles which represent potential for Czech landscape and the future plotting as well as acceptance as EFA. In the area of two regions, there were found 3,929 km of buffer strips along watercourses and forests. With the estimated width of 6 metres, it would represent an area of 2,357 ha (see Table 4).

Table 4. Potential length and area of buffer strips

potential area of EFA in buffer strips in suitable locations						
	buffer strips along watercourses		buffer strips along forest edges		total of strips	
	length	area of EFA	length	area of EFA	length	area of EFA
	m	ha	m	ha	m	ha
total area	1,585,060	951	2,343,916	1,406	3,928,976	2,357
JMK	1,242,207	745	894,396	537	2,136,603	1,282
PK	342,853	206	1,449,520	870	1,792,373	1,075

Note: JMK – Jihomoravský kraj (South Moravian Region), PK – Plzeňský kraj (Pilsen Region)

Source: The study of the thematic task 'Potential of Landscape Features for Implementation of Green Direct Payments in Czech Farmed Landscape', 2016

The realized analysis showed that the largest area of the existing landscape features in the focus area is covered by trees in groups both with the registered and the unregistered landscape features.

Potential landscape features for the future policy, namely areas along watercourses or forests cannot be avoided for their area. Their size depends on the type of landscape or, more specifically, on the number of watercourses or forests. In the focus area, these features represent circa. half of the acreage of the listed and registered landscape features in LPIS.

The outcomes of the questionnaire survey

The questionnaire was designed in IAEI and realized by FOCUS Consulting, s.r.o. The respondents were chosen among agricultural companies based on these criteria:

- the existence of declared landscape features in LPIS,
- the size of the agricultural area of the company (in ha),
- the focus on crop and livestock production,
- the distribution in the regions of the Czech Republic.

There was an obligation for all the respondents of the questionnaire to have particular areas of EFA within greening. The questionnaire was completed by 451 companies. The questionnaire was declined by 173 respondents. Out of the 451 respondents-farmers 398 were chosen for a further survey. It was discovered later that 53 respondents did not meet some of the criteria.

The main focus of the survey was to find the answer to the principal question: 'Why do farmers refuse to register landscape features in LPIS to meet the greening conditions? Are farmers willing to maintain and form landscape features in their areas?'

Nearly a third of the respondents declare that they allocate all landscape features as EFA. Considering the size of a farm, small farms with the area under 100 ha and big farms with the area over 5000 ha registered landscape features in LPIS more, i.e. ca. 50% of existing and registered landscape features under the methodology. Other farms registered only ca. 30% of landscape features in LPIS.

The outcome of the survey also was that farms with only crop production have a slightly higher scope of greening through landscape features than farms with combined crop and livestock production.

Areas with nitrogen-fixing crops (80%) and areas with catch crops (56%) are most frequently allocated to meet further greening conditions (assessed without landscape features). Areas with fast-growing trees (4%) and forested areas (5%) are allocated the least frequently. This outcome shows that farmers prefer blanket measures more.

Meeting greening conditions is rather different in different regions of the Czech Republic, e.g. fallow land is allocated most frequently in the Karlovy Vary Region (50%) while other regions use this EFA up to 30% of total EFAs. Areas with catch crops are allocated most frequently in the Olomouc Region (85%) while the Zlín Region does so the least frequently (18%). Nitrogen-fixing areas are the most frequently declared EFA feature and in the individual regions, they are allocated between 67% and 96%. They are most frequently declared in the Hradec Králové Region (96%). The least frequently allocated areas are those with fast-growing trees, forested areas and headland.

The reasons why landscape features are not declared as EFA were learned when asking 'What are the reasons why you do not choose landscape features to meet greening conditions in your farming area?'

Three-thirds of the respondents do not choose landscape features to meet greening because of their small size. Most respondents stated that they do not have enough landscape features in their premises for the declaration to be worthwhile. More than half (58%) of the respondents state that there is a higher administrative burden if they declare landscape features than if they declare other areas in EFA.

Furthermore, 54% of the respondents stated that they do not declare landscape features as EFA and they meet greening differently. By this, they prevent unexpected situations which would be necessary to tackle if landscape features were damaged or destroyed by the third party, extreme weather or other inadvertent damage.

Over 38% of the respondents feel that if they do not declare landscape features, they are less likely to be inspected for the meeting of the conditions by control authorities.

Over 37% of the farmers stated legal reasons for not declaring landscape features such as land rights – conflicts with the owner, conflicts with the management of protected areas (landscape parks), rented lands without a statement of the size of landscape feature area in the lease agreement but existing in the rented area, etc.

Nearly 36% of the respondents stated that it is difficult for them to find out if the landscape feature is the one that can be declared as the particular type of landscape feature with its parameters and they would welcome help, an advisor, in this matter. As further reasons why they do not declare landscape features as EFA, the respondents stated financial demands, frequent changes in legislation and legal insecurity. Moreover, they also claimed they have enough forage or other crops which they use to meet greening conditions.

The overview of the opinions on the non-declaration of landscape features based on the size of the farm is stated in the chart in Figure 2.

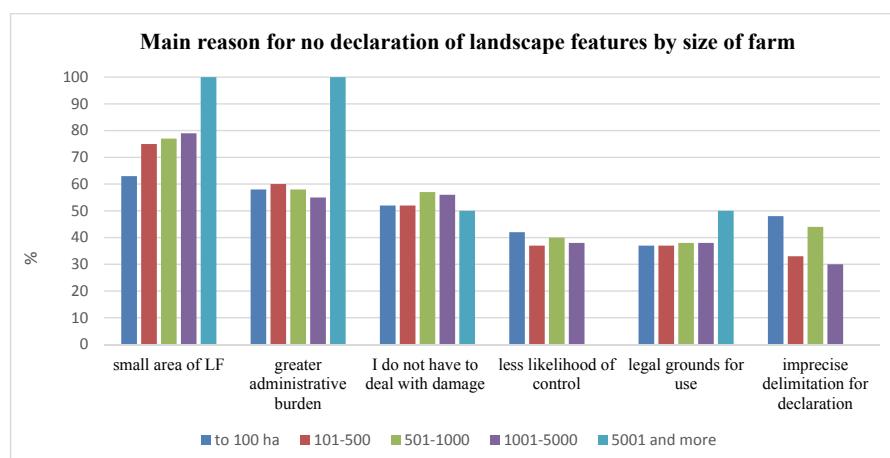


Figure 2. The reasons why landscape features are not declared for meeting greening based on the size of the farm (in %)

Source: The study of the thematic task 'Potential of Landscape Features for Implementation of Green Direct Payments in Czech Farmed Landscape', 2016.

The larger size of a farm the bigger obstacle it is for the farms that landscape features have small size. The administrative burden and the small size of landscape features are one of the reasons why landscape features are not chosen to meet greening conditions.

Another question made the choice of EFA more precise. It was focused on the reason why a respondent considers other EFA in their company more convenient for meeting greening conditions than landscape features.

Almost 92% of the respondents stated that they consider perennial forage and catch crops as the right agricultural policy, which they would do even if there were not EFAs. Other 65% of the respondents stated that administrative burden is lower than if they declared individual landscape features.

The total of 55% of the interviewed farmers stated that if they declare another area as EFA than landscape features, they could prevent unexpected situations which would be necessary to tackle if landscape features were damaged or destroyed. The damage or destruction could be caused by the third party or adverse extreme weather. When agricultural machinery for soil cultivation is used, damage of a landscape feature could be inadvertent. Penalties are then very high.

Half of the farmers answered that their company is focused mainly on live-stock production; thus, they have sufficient amount of areas with forage, i.e. nitrogen-fixing crops (these crops are used as fodder; it is also used to meet greening conditions and thus there is no reason to change the practice).

The larger a farm the more widely-spread the opinion is that growing perennial forage and catch crops is the right agricultural practice, which would be done by farmers anyway.

The respondents were also asked an open question in the questionnaire: 'Under which conditions would you allocate landscape features as EFA to meet greening conditions?'

Low interest in landscape features can be concluded from the answers to this open question where almost 40% of the respondents answered they have no idea whatsoever. 32% of the respondents stated that they would allocate landscape features if the conversion factors were changed, namely with the progression for smaller areas. Another suggestion for a change (almost 8%) was to modify the chosen categories of EFA (e.g. to include landscape features in grassland too).

The question about forming a new landscape feature on their own or rented lands is as follows: 'Would you form a new landscape feature (types such as field margin, terrace, trees in groups, an isolated tree, trees in a line, etc.) if you could use a financial subsidy to do that?' You can see the outcome in Figure 3.

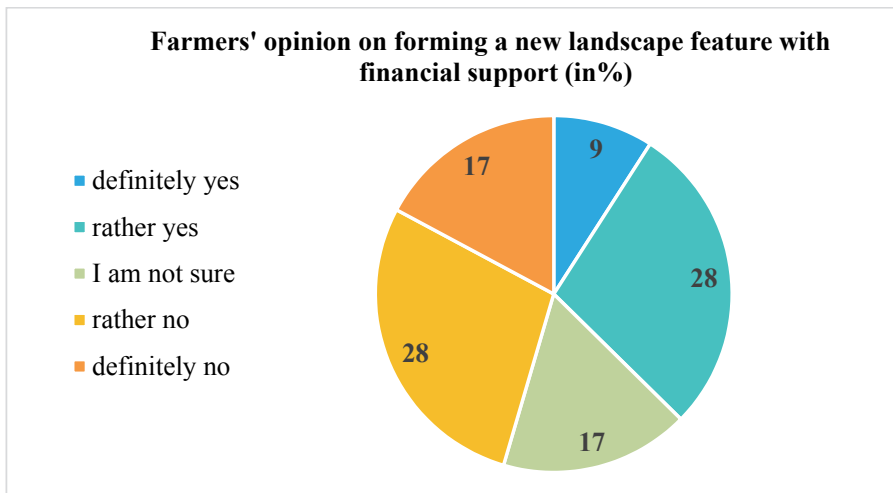


Figure 3. The recruitment of farmers for the formation of a new landscape features (with possible financial subsidy) in %

Source: The study of the thematic task 'Potential of Landscape Features for Implementation of Green Direct Payments in Czech Farmed Landscape', 2016.

37% of the respondents are interested in forming a new landscape feature provided that they got a financial subsidy. The larger size of a farm, the lower the interest is.

Differences between regions were studied too. They were very significant in this matter. Willingness to form new measures is not connected with the necessity to protect soil and landscape in regions. The highest interest in forming new features in agricultural soil was found in the Karlovy Vary Region and the highest reluctance is in the Liberec Region. The interesting fact is that both regions have similar landscape conditions. The highest uncertainty about forming landscape features was in the Pilsen Region, which is comparable with the Zlín Region as for landscape conditions. However, certainty was the highest in the Zlín Region. The reason for the problem is necessary to see in the human resources and bureaucratic burden connected with the formation of landscape features.

The outcome of the open questions and further interviews was that farmers are often discouraged by excessive bureaucratic demands for meeting conditions and inspections done at their companies. The inspection burden could lead to refusal of good management principles. This could be assessed as a very negative influence because middle-sized and large farmers affect a significant area of the landscape; they are also tradition bearers as well as significant influencers in agricultural policy in the country areas. The loss of trust and willingness to respect the goals of agricultural policy of greening is not the best image and along with this the willingness to participate in the sustainable management of landscape is lower as well. Farmers get also under pressure due to competition in soil management both among farmers themselves and also as a result of the situation when land is rented by people only as acquisition and thus they are not interested in the landscape protection. The loss of state-owned land as well as the unregulated purchase of lands by 'non-farmers' make the introduction of new landscape features in the countryside harder or even they prevent it.

The workshops that farmers can attend to are often focused on the management of a farm and guidelines on how to meet the conditions of national and European legislation. There is a lack of information about the environmental and financial contribution of the individual measures, possibilities on how to use technical measures such as landscape features.

The administrative burden is a significant reason why farmers have not registered landscape features as EFA within greening. More than half of the farmers stated that they prefer to declare another EFA rather than landscape features. The reason is to avoid complicated situations that could happen if landscape features are damaged or destroyed by the third party or extreme weather.

Recommendation

The solution could be the initiation of discussions among the Ministry of Agriculture, farmers and respected professionals.

Currently, preparations to audit CAP including greening have been initiated. Apart from the support for registration of landscape features, agricultural policy in the Czech Republic should be also focused on the support for forming and assessing landscape features. This needs an extensive discussion with the participation of professionals and responsible departments, namely the Ministry of Agriculture and the Ministry of the Environment. The approved procedures are land consolidation with responsible participants.

Furthermore, the preparation of programmes for the period after 2020 has been started. The proposals of new interventions and compulsory requirements should rise from the reality and acknowledgement of farmers' problems and opinions. If this does not happen, the goals of the policy do not have to be understood and met. In the end, sustainable agriculture does not affect only farmers themselves but also the whole society.

The education of farmers, as well as the public about the environmental function of landscape features, is still a very useful and important issue.

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Author not mentioned in the text:

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Internet resources:

LPIS map

<http://eagri.cz/public/web/mze/farmer/>

Metodická příručka k novým podmínkám poskytování přímých plateb v České republice v roce 2016; Odbor přímých plateb, MZe. http://eagri.cz/public/web/file/454436/Metodicka_prirucka_pro_PP_pro_rok_2016_rev.pdf

Monitoring eroze zemědělské půdy, Závěrečná zpráva, ÚPÚ, VÚMOP, <http://me.vumop.cz/mapserv/monitor/stazeni.php>