

# ASSESSMENT OF RURAL DEVELOPMENT LAND USE PROJECTS FOR FARMSTEAD SITE SELECTION (ELEKTRĖNAI MUNICIPALITY AS EXAMPLE)

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## Abstract

Lately, especially near major cities or by naturally attractive areas, the intensified development of urban areas has been observed. Such tendencies has been observed both in the land used for other purposes and agricultural land. It is possible that the rural development land use projects have special significance in the agricultural land for the farmstead site selection. The purpose of this article is to analyze the rural development land use projects for farmstead site selection prepared in the municipality of Elektrėnai during the period between the years of 2012 and 2016, and to determine their potential impact on the growth of built-up areas and the rational use of land. According to the survey data, it can be stated that drafting rates of rural development land use projects for farmstead site selection tend to grow especially in those municipalities that are close to Vilnius and which have a good geographical position as well as a special landscape and national cultural heritage values (Vilnius district, Trakai district and Elektrėnai district municipalities). Having carried out the agricultural land change analysis, it is noted that during the analysis period (2012 - 2016) in Elektrėnai municipality, similarly to the whole Vilnius county, land utilities structure is dominated by agricultural land, mostly arable land, but the significant trend of agricultural land reduction at the expense of the growth of built-up areas was noticed. During the analyzed period the built-up areas in the municipality of Elektrėnai increased even by 6 times, and the area of agricultural land declined on average, by almost 2 percent every year. A detailed analysis of specific projects and information gathered during qualitative research suggest that the prepared rural development land use projects for farmstead site selection are not prepared for the improvement of the actual farming activity conditions in constructing farm and other buildings. It is clear that the drafting of these projects ensure the possibility for alleged farmers to simply build a dwelling house on agricultural land. This flawed practice affects the chaotic development of built-up areas and does not achieve the objective of the implementation of sustainable development of residential areas based on the balance and coherence of social needs, economic activity and environmental relations.

Key words: rural development land use projects, agricultural land, farmer's farms, built-up areas.

## Introduction

The countryside is an integral part of our country's social and cultural life, ethnic cultural centre and space for recreation. The sustainable territorial planning with special emphasis on the rational land management has a significant impact on the planning, management and development of rural areas.

Essential rational land management works in rural areas are implemented through spatial planning documents, some of them are rural development land use projects. According to V.Gurskienė and G.Ivavičiūtė, both land use schemes and rural development projects may be important for the state regulation of rural areas management and agricultural development (Gurskienė et al., 2012).

Rural development land use projects are an area level special territorial planning land use documents prepared for the planning of the change of land use structure, forest planting, other agriculture-related activities in non-urbanized and not-to-be-urbanized rural residential areas, to develop agricultural activities and alternative activities operator's holdings. Their preparation, coordination, inspection, approval and registration procedure is governed by the drafting rules of rural development land use projects (Lietuvos Respublikos žemės..., 2004).

Recently it has been noticed that the demand for the urbanization of yet not-urbanized new territories is growing (Andrews, 1986; Berger, 2006; Adell, 2016). It is possible through rural development land use projects for farmstead site selection in not-urbanized and in non-urbanized rural residential areas to plan the change of land utilities composition in areas, where the general plan does not provide for such actions. It is therefore important (when carrying out specific research) to find out how such practice contributes to sustainable development of urban areas as well as the influence upon the rational use of land. It is likely that the problem patterns of the detailed studies should help find solutions for the coordination of sustainable development in urban areas and planning in the future.

**The aim of the research** is to analyse rural development land use projects for farmstead site selection prepared in the municipality of Elektrėnai during the period between 2012 and 2016 and to determine their potential impact on the growth of built-up areas and the rational use of land.

**The object of the research** is rural development land use projects for farmstead site selection in Elektrėnai municipality.

The following tasks have been set to achieve the aim:

1. To carry out land utilities change analysis in Vilnius county and Elektrėnai municipality.
2. To analyze rural development land use projects for farmstead site selection prepared during the period between 2012 and 2016.
3. Having carried out the analysis of selected specific rural development land use projects for farmstead site selection, to determine their potential impact on the rational use of land.

### **Methodology of research and materials**

During the research, the mixed methods, i.e. empirical and theoretical, were chosen according to the specificity of the research theme. The theoretical method – the secondary data analysis, including analysis and synthesis of legislation, prepared projects and scientific articles as well as comparison and logical abstraction. The data on the rural development land use projects for farmstead site selection prepared during the period between 2012 and 2016 were obtained from the Elektrėnai department archive of the National Land Service under the Ministry of Agriculture.

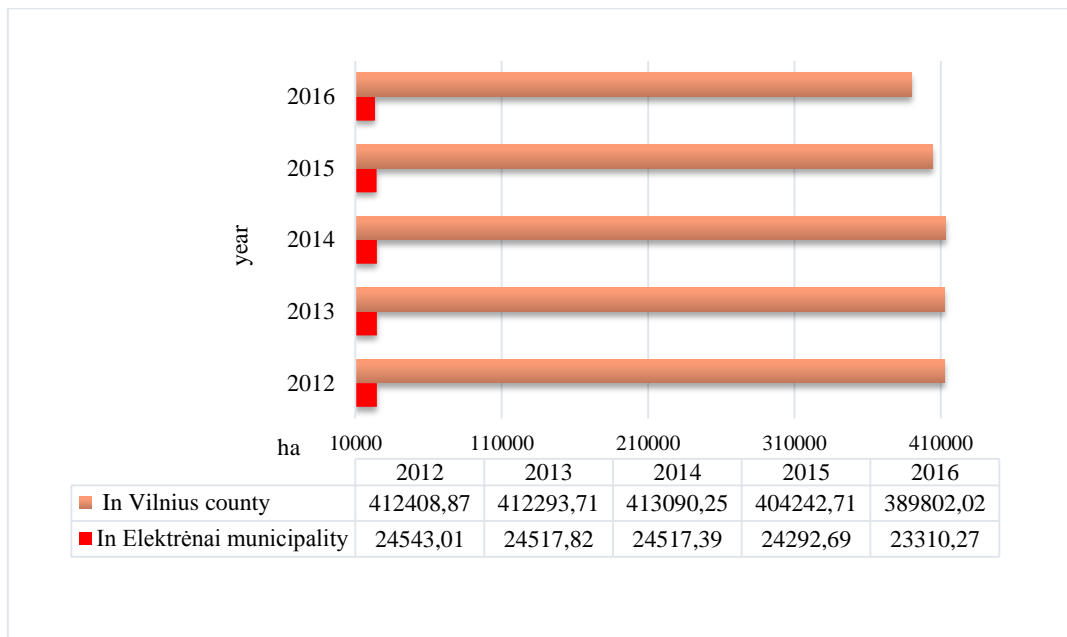
The empirical method was applied in a qualitative study, in which the semi-structured interview was carried out. During the interview the questions were pre-prepared as well as there were additional questions. Selection of the participants for the interview was carried out on the basis of the paper's authors practical experience and choosing the most informative experts. The latter are competent in the analysed field and can provide relevant information about the analysed problem thanks to their professional activities, existing qualifications and experience. Interview participants became: the senior specialist (informant A) from the Elektrėnai department of the National Land Service under the Ministry of Agriculture, the surveyor preparing rural development land use projects (informant B) and the specialist from the Department of agriculture and land reclamation in Elektrėnai municipality (informant C).

Carrying out the assessment of the rural development land use projects for farmstead site selection one of the eight municipalities of Vilnius county, i.e. Elektrėnai municipality has been chosen for the detailed research. This municipality is distinguished by its special geographical position, because it is almost halfway between the two largest Lithuanian cities Vilnius and Kaunas, and thus it is becoming quite attractive living area where you can live in, while working in both largest cities. Also, the analysis of rural development land use projects scope revealed that of the eight Vilnius district municipalities (the town of Elektrėnai, the city of Vilnius, Šalčininkai district, Širvintos district, Švenčionys district, Trakai district, Ukmergė district and Vilnius district), it prepared the majority of this type of projects, apart from Vilnius district, which has already been analyzed in previous works (Filipavičienė, 2016.).

### **Discussions and results**

In Elektrėnai municipality, the area of agricultural land makes up 33.57 percent, in comparison with the national average (52.74 percent), however, its use extensity is much higher. It shows almost five times (70 percent) higher the amount of undeclared farmlands than the average in Lithuania (11.89 percent). Agricultural extensity depends on soil fertility, its condition. A large part of the municipal area makes up agricultural land of low efficiency (up to 32 scores) as well as areas susceptible to deflation, erosion and anthropogenic load. Due to the low demand and unfavorable terrain conditions only one fifth of the cultivated lands were drained in the municipality (Elektrėnai, 2016.).

The analysis of the details of the composition of agricultural land as well as its change shows that during the period between 2012 and 2016, in the municipality of Elektrėnai, as throughout the Vilnius county, agricultural land areas continues to decline (Fig. 1).

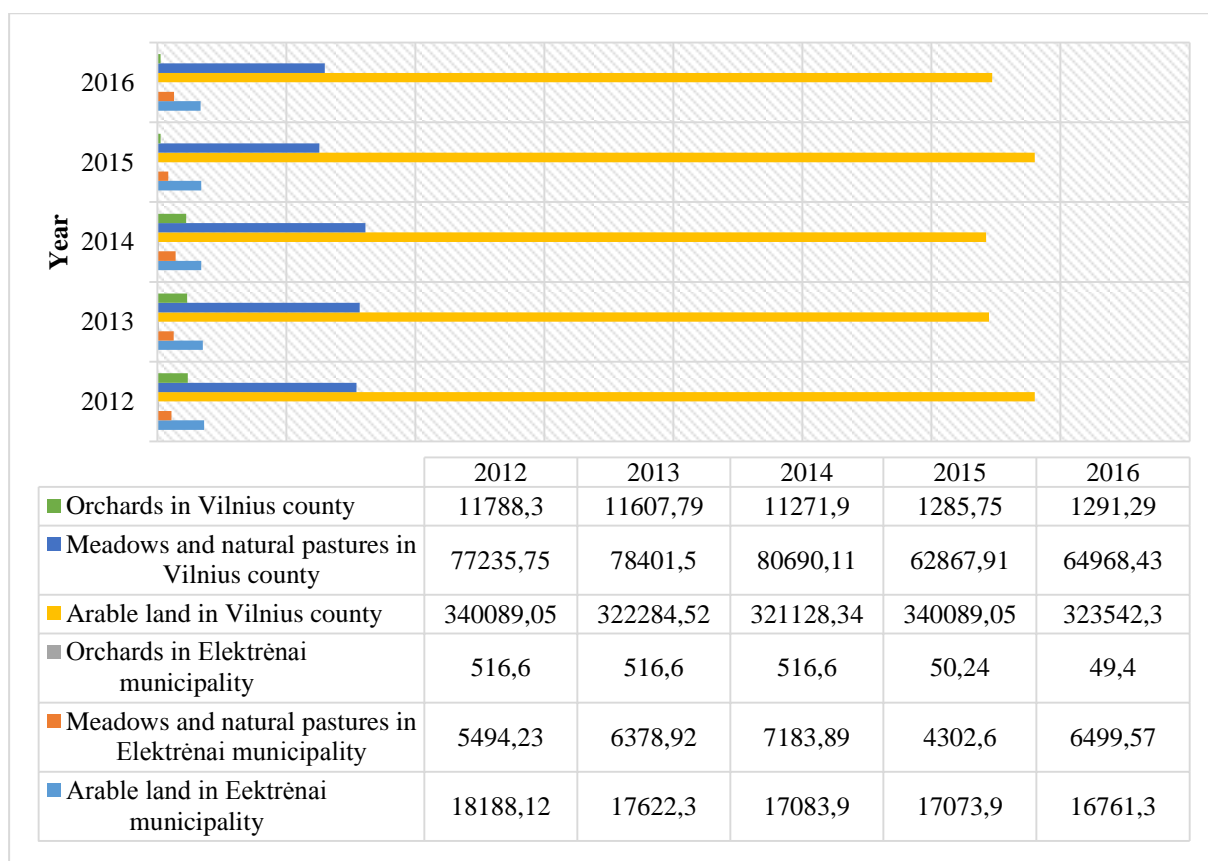


**Fig. 1.** Agricultural land area change in Vilnius county and Elektrėnai municipality during the years 2012 - 2016

In Vilnius county, agricultural area declined on average, by 1.91 percent every year, and in the municipality of Elektrėnai – by 1.68 percent.

As it can be seen from the data, the largest areas of agricultural lands were in 2014 both in Vilnius county and in Elektrėnai municipality, respectively, they accounted for 4.25 percent (41 390.25 hectares) and 48.19 percent (24 517.39 hectares) of land use. The minimum area of agricultural land was observed in 2016 – 3.99 percent (38 902.02 hectares) and 45.82 percent (23 310.27 hectares) of the total agricultural land.

When analyzing trends of agricultural land components in details, it can be noted that significant changes have occurred in the arable land. During the analysed period, arable land in the municipality of Elektrėnai continued to decline, an average by 1.67 percent every year, whereas in Vilnius county in 2015 the opposite phenomenon than in previous years happened, i.e. occupied arable land areas increased significantly (over 16 546.75 hectares), but in 2016, these areas decreased again (Fig. 2). This could have been influenced by direct payments for crops.



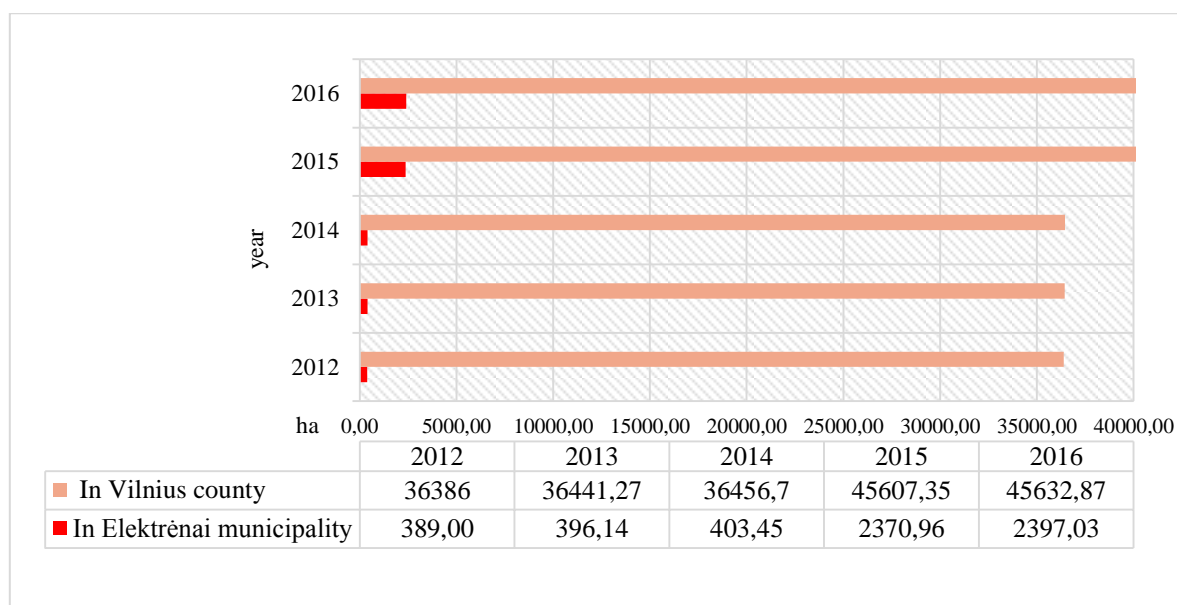
**Fig. 2.** The change of agricultural land components in Vilnius county and Elektrėnai municipality during the period between the years 2012 and 2016

In Vilnius county and Elektrėnai municipality, meadows and natural pastures varied inconsistently, in the municipality of Elektrėnai, in 2014 these land utilities formed the largest part, i.e. 7183.89 ha, in Vilnius county in 2014 – 80 690.11 ha, and the smallest part of these land utilities were formed in 2015 in the municipality of Elektrėnai – 4302.6 ha, in Vilnius county in 2012 –78 401.5 ha.

In Vilnius county, orchard area changed only slightly, however, in the municipality of Elektrėnai, this land has decreased 10 times in 2015.

In practice, a steady loss of arable land has been affected by some adjusted legal acts, which came into force on January, 2014, and they are as follows: “The main purpose of land use and method for determining and replacement procedure and conditions description” approved by the Government of the Republic of Lithuania (Lietuvos Respublikos Vyriausybės..., 2014) and the Republic of Lithuania Law on Territorial Planning, June 27, 2013, No. XII-407 (Lietuvos Respublikos teritorijų..., 2013), which regulate the essential and simple procedure of the change of the conditions and the way of the main land use, when (while desiring or when solutions of master plan are allowing) land use purpose is changed from agricultural to other by writing only an application to the municipality administration without preparing certain territorial planning documents. Such facilitated conditions, and not only they, in fact, had quite an impact on the development of urban areas.

As can be seen from the presented data, during the period of nearly five years, the area of built-up territories in Vilnius county increased by 1.2 times, while in the municipality of Elektrėnai – 6 times (Fig. 3). The largest change of these areas was noticed in 2015.



**Fig. 3.** The change of built-up territories in Vilnius county and Elektrėnai municipality during the period between the years 2012 and 2016

On the basis of the results of the earlier analyzed agricultural land areas change and evaluation of some earlier described legislation changes, it can be said that quite a significant increase of built-up areas (on the account of the decrease of agricultural land areas, particularly arable land) was influenced by a change in a simplified land use change procedures, when urbanization of the part of former agricultural land by making it residential land was a relatively simple issue on the basis of general plan solutions, i.e. in the case when the planned to urbanize area falls within the priority areas for the development of residential areas. Another way in which conversions of land utilities are carried out, which result in an increase in area of built-up territories of agricultural land, is rural development land use projects for farmstead site selection.

On the other hand, an incentive to extremely high growth of built-up area in the municipality of Elektrėnai is a convenient location of this area. The geographic location of Elektrėnai municipality in terms of transportation is particularly advantageous because it is halfway between the major Lithuanian cities, Vilnius and Kaunas, therefore the demand to urbanize the most beautiful places of the municipality (located not far from these towns) is increasing.

**Analysis of rural development land use projects for farmstead site selection in Vilnius county and Elektrėnai municipality.** 1132 rural development land use projects for farmstead site selection were prepared in Vilnius county during the period between the years 2012 and 2016 (Table 1).

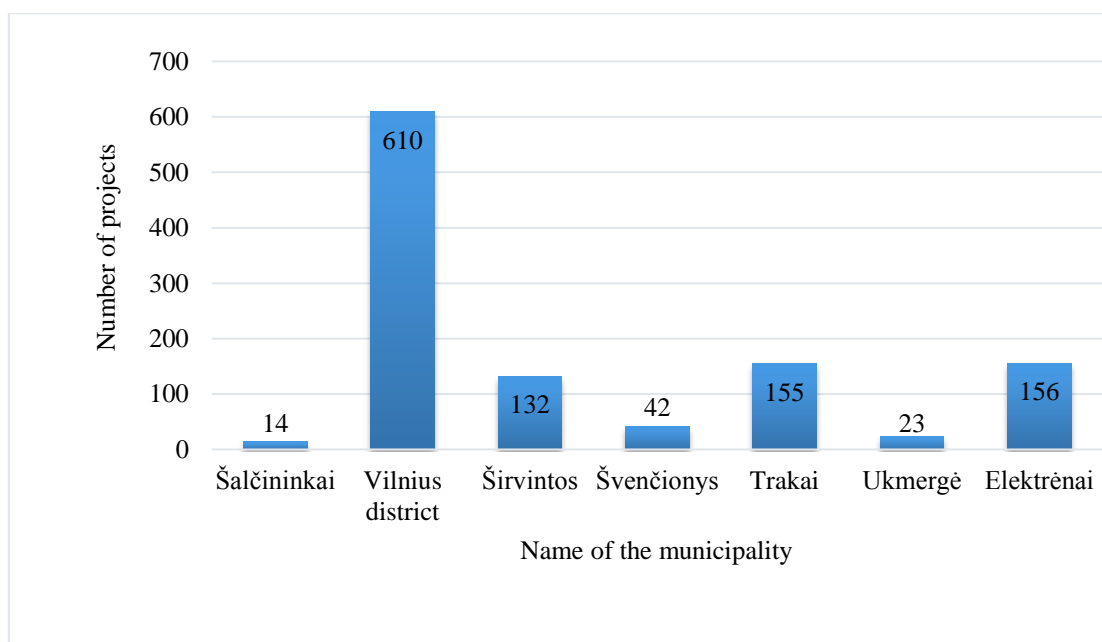
**Table 1**

The prepared rural development land use projects for farmstead site selection in Vilnius county during the years 2012 – 2016

Years of project preparation	2012	2013	2014	2015	2016
Number of prepared projects, in psc.	41	103	312	332	337

As can be seen from the data presented, the scope of projects prepared in Vilnius county has a tendency to increase. In 2012, 41 projects have been prepared, while in 2013 – 103, in 2014 – 312, in 2015 – 332, in 2016 – 337 projects, i.e. the number of projects prepared since the beginning of the analysis period has increased 8 times.

Most of the projects were prepared in Vilnius district – 610, in Trakai district – 155 and in the municipality of Elektrėnai – 156. The least number of the projects were prepared in Šalčininkai and Ukmergė districts – 14 and 23, respectively (Fig. 4).



**Fig. 4.** Number of prepared rural development land use projects in Vilnius County during the years 2012 - 2016

It can be said that the largest scope of rural development land use projects for farmstead site selection are in special interest areas, i.e., Vilnius district is an area closest to the capital city Vilnius, which concentrates the largest number of inhabitants, the largest supply of jobs and where other socially, culturally and economically important things are abundant. Trakai district is located not far away from the capital Vilnius and it is particularly characterized by its beautiful landscape and the existing national cultural heritage values. Peculiarities of Elektrėnai municipality were discussed earlier. When analyzing the distribution of projects in different subdistricts of Elektrėnai municipality, it was noted that the largest scope of projects prepared are in Vievis subdistrict, which is the largest subdistrict in terms of area in the municipality of Elektrėnai. This subdistrict covers an area of 152 square km and it is about 30 percent of the total area of Elektrėnai municipality (Table 2).

**Table 2**

Distribution of the rural development land use projects for farmstead site selection in the municipality of Elektrėnai, prepared in 2012 - 2016

Name of subdistrict	Subdistrict area, km <sup>2</sup>	Number of projects	Average area of the land plot projected, ha
Elektrėnai	40	20	0.6785
Vievis	152	60	1.8567
Semeliškės	67	10	1.9534
Kietaviškės	56	15	1.5678
Kazokiškės	62	7	1.4500
Pastrėvys	58.60	19	1.0250
Beižionys	51	14	1.8596
Gilučiai	25	11	1.4536

It is likely that the largest number (60) of prepared projects in Vievis subdistrict was determined by excellent connection with the municipal centre, as well as the short distance to the main city of the country – the capital city of Vilnius. The smallest number of projects were developed in Kazokiškės subdistrict, i.e. only 7, one of the reasons why there are not many projects prepared in this area is that there is a number of protected areas where farming is restricted.

Having analyzed 10 randomly selected rural development land use projects in the municipality of Elektrėnai, it was noted that the projected plot area ranges from 0.55 up to more than 7 hectares, and usually land utility changes are being designed taking into account agricultural land. However, it is also interesting that farmers preparing in these land plots rural development land use projects for

farmstead site selection, in general, do not declare their cultivated land. This raises the question of whether they actually do any business? (Table 3).

**Table 3**

Characteristics of selected rural development land use projects for farmstead site selection in Elektrėnai municipality

Number	Subdistrict	Village	Area of the land plot designed, ha	The built-up area, ha	Expected specific land use and forest conditions	Protected areas	Expected changes of land utilities	Expected approach	Owned land tenure, ha	Farmer's declared land	Farmer's leased land	Efficiency score
1.	Vievis	Ausieniškiai	0,7566	0,494	XIX, XXIX	The former territory of Ausieniškiai manor	Meadows and natural pastures	From the projected 4m wide road	5,7566	-	-	50
2.	Pastrėvys	Belezos	1,7804	0,5944	XXIX, VI, II	-	Arable land	Existing 4 meter wide road	2,7804	-	-	31,7
3.	Pastrėvys	Strėvininkai	2,1224	0,5621	VI, XXVI, XXIX, XXVIII	-	Meadows and natural pastures	From the existing 6 meter wide road	2,4224	-	-	29
4.	Elektrėnai	Migūčionys	0,6546	0,4891	II, VI	-	Meadows and natural pastures	From the existing 12 meter wide road	0,7546	-	-	28,3
5.	Vievis	Rusakalnis	1,58	0,3971	XXVI	-	Meadows and natural pastures	By servitude road	1,58	-	-	39
6.	Semeliškės	Klevinė	7,1951	4,3508	II, VI, XXVI, XXIX	-	Meadows and natural pastures	From the existing 8 meter wide road	7,1951	-	-	25,7
7.	Pastrėvys	Mackūniškiai	2,1359	1,0679	XXIX	-	Arable land	From then existing 4 meter wide road	2,1359	-	-	35,8
8.	Pastrėvys	Mustniai	3	0,3796	II, XXI	-	Arable land	From the existing 10 meter wide road	3	-	-	28
9.	Vievis	Viliškiai	3,1092	2,461	-	-	Meadows and natural pastures	From the existing 10 meter wide road	3,1092	-	-	32,9
10.	Semeliškės	Daugirdiškiai	0,5525	0,316	-	-	Arable land	From the existing 4 meter wide road	0,5525	-	-	34,6

Having analyzed in detail solutions provided in the projects, e.g., the designed built-up areas, it is noted that there are very small possibilities of developing an effective agricultural activities due to the complex plots configuration and overall small size almost in all land plots (Fig. 4).

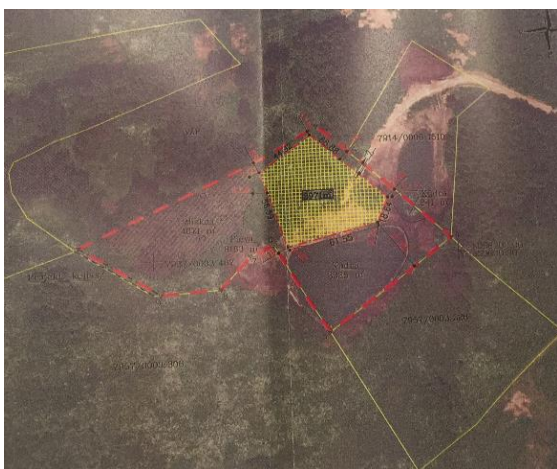




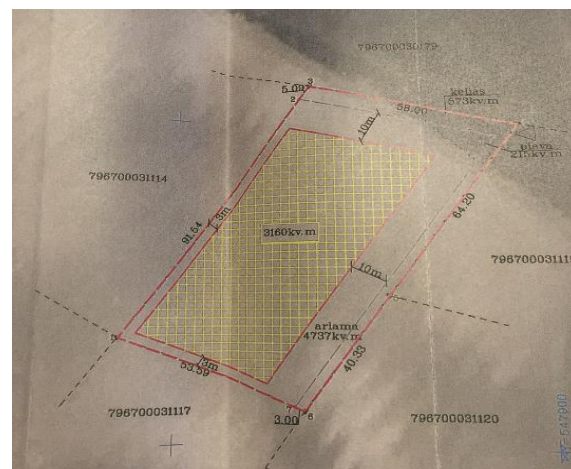
a) Pastrėvys subdistrict, Strėvininkai village



b) Semeliškės subdistrict, Klevinė village



c) Vievis subdistrict, Rusakalnis village



d) Semeliškės subdistrict, Daugirdiškės village

**Fig. 4.** Examples of the designed built-up areas of rural development land use projects for farmstead site selection

As can be seen from the presented specific visual examples, in all the analyzed projects the most part of the territory is occupied by built-up area, and the rest of the agricultural lands remain uncomfortably situated, i.e. narrow strips of irregular shape. Such residual land plot boundaries limit the possibility to cultivate land with agricultural machinery, and the area is too small for stockbreeding.

In order to more accurately ground the results of the research, a qualitative study was carried out, during which three qualified experts, who in their daily activities often come into contact with the farmers and their preparation of the rural development land use projects, were interviewed via direct interview. Informant A (the senior specialist from the National Land Service under the Ministry of Agriculture), informant B (surveyor), informant C (the specialist from the Department of Agriculture and Land Reclamation in Elektrėnai municipality).

According to all experts, almost in all cases persons preparing the rural development land use projects for farmstead site selection, are not true farmers: informant A <...> *from the service order in the information system of Land Management design documentation it can be noted that most farmers have registered farm not long ago and in projects provide only dwelling houses, without farm buildings;* informant B <...> *In 10 years there was only one customer, the purpose of which was to farm. The aim of all others was to build a dwelling house;* Informant C <...> *not all people are real farmers, as people mention that they need only a certificate for house construction. The big farmers who actually farm already tend to have farmsteads*”.

All interviewed experts agree that rural development land use project for farmstead site selection is an opportunity to build a dwelling house on agricultural land: informant A <...> *”In my opinion, this is definitely one of the trends, why rural development land use project for farmstead site selection is being prepared. As far as we deal with the developers of these projects, they hide nothing while*



declaring that they prepare the project only to construct a dwelling house”; Informant B <...> “the majority are not real farmers”, the informant C <...> “Well, since the law allows it and does not control the further actual economic activity, this trend is real.”

So to summarize the research results, it can be said that the prepared rural development land use projects for farmstead site selection are not being prepared for the improvement of actual farming activity conditions or other things. Unfortunately, this is the most common means of enabling to build a dwelling house on agricultural land. The uncontrolled development of such “farmers” homesteads especially influence the chaotic development of built-up areas, resulting in encountered various problems, such as infrastructure costs increase. Finally, these costs are covered by each municipality resident funds. Also, such non-coordinated development does not help the municipality to implement the development of sustainable residential areas based on the balance and coherence of social needs, economic activity and environmental relations.

### Conclusions and proposals

1. Agricultural land still dominates in the land utility structure of Elektrėnai municipality, as in the whole Vilnius county, but in recent years the agricultural land area tends to decline, while the built-up areas are increasing. During the analyzed period the built-up areas in the municipality of Elektrėnai increased 6 times, and the area of agricultural land declined on average by almost 2 percent every year.
2. The volume of the preparation of the rural development land use projects for farmstead site selection during the analysed period tends to increase not only in the municipality of Elektrėnai, but also throughout the county of Vilnius. 1,132 projects were prepared during the period between the years 2012 and 2016. Most of the projects were developed in the special significance – the characteristic areas of the county, i.e., in those municipalities that are closest to the city of Vilnius and which have good geographical position and special landscape and national cultural heritage values (Vilnius district, Trakai district and Elektrėnai district municipalities).
3. The analysis of the projects and the information collected during the qualitative research suggest that rural development land use projects for farmstead site selection are not being prepared for the improvement of actual farming activity conditions in constructing farm and other buildings. It is clear that the drafting of these projects for alleged farmers ensure the possibility to simply build a dwelling house on agricultural land. This flawed practice affects the development of chaotically built-up areas and do not achieve sustainable development of residential areas based on the balance and coherence of social needs, economic activity and environmental relations.

### References

1. ADELL G.; Theories and models of the peri-urban interface: a changing conceptual landscape. Strategic environmental planning and management of the periurban interface. Research Project: UCL-DPU. Available online: [http://eprints.ucl.ac.uk/43/1/DPU\\_PUI\\_Adell\\_THEORIES\\_MODELS.pdf](http://eprints.ucl.ac.uk/43/1/DPU_PUI_Adell_THEORIES_MODELS.pdf) (accessed on November 15, 2016).
2. ANDREWS M. S.; Suburbanization, Agricultural Productivity and Right to farm. *NATIONAL Conference on Sustaining Agriculture Near Rites*, 42–47, Boston, 1986.
3. *Elektrėnų savivaldybė* [interaktyvus]. [žiūrėta 2016-02-05]. Prieiga per internetą:<<http://www.elektrenai.lt/index.php?1755757945>>.
4. BERGER A.; *Drosscape: Wasting Land in Urban America*. New York: Princeton Architectural Press, 2006.
5. BITINAS, B., RUPŠIENĖ, L., ŽYNDŽIŪNAITĖ, V. *Kokybinių tyrimų metodologija*. Klaipėda: S. Jokužio leidykla – spaustuvė, 2008.
6. GURSKIENĖ, V., IVAVIČIŪTĖ, G. *Kraštovaizdžio planavimas*. Mokojoji knyga. Akademija, 2012.
7. Lietuvos Respublikos žemės ūkio ir aplinkos ministro 2004 m. rugpjūčio 11 d įsakymas Nr. 3D-476/D1-429 „Dėl kaimo plėtros žemėtvarkos projektų rengimo ir įgyvendinimo taisyklių patvirtinimo”. Iš: *Valstybės žinios*, 2004, Nr. 127-4581
8. Lietuvos Respublikos žemės fondas 2016 m. sausio 1d. Vilnius: Nacionalinė žemės tarnyba prie Žemės ūkio ministerijos. Valstybinė įmonė registrų centras, [interaktyvus]. [žiūrėta 2016-02-05]. Prieiga per internetą:<<http://www.nzt.lt/go.php/Statistika>>.
9. Lietuvos Respublikos Vyriausybės nutarimas „Dėl Lietuvos Respublikos vyriausybės 1999 m. rugsėjo 29 d. nutarimo Nr. 1073 „Dėl pagrindinės žemės naudojimo paskirties nustatymo ir keitimo tvarkos aprašo patvirtinimo” pakeitimo 2014 m. sausio 15 d. Nr. 44 [interaktyvus]. [žiūrėta 2017-02-28]. Prieiga per internetą:< <https://www.e-tar.lt/portal/lt/legalAct/05a9647081e811e3903d9adbf15c062f>>.

10. Lietuvos Respublikos teritorijų planavimo įstatymas. Iš: Valstybės žinios, 2006, Nr. 66-2429, 2010, Nr. 65-3195, 2012, Nr. 63-3195.

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