

Securing the Balance among Ecological, Economic and Social Assets in the Process of Afforestation of Agricultural Land – where, why and what Forests Are Needed

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In line with the on-going land reform, our country's landscape undergoes significant development. The most conspicuous changes are related to new constructions and land abandonment. Construction activities are regulated by the license system, however, on abandoned lands, forests grow

naturally. During the Soviet times, the Lithuanian landscape was endangered by excessive land reclamation. Today, it is jeopardized to become extinct due to the abandonment. In both cases, the key role belongs to the human being, intensive farming or discontinuance of farming activities.

Today, afforestation has developed into a complicated matter of national significance. Our country's landscape has already passed through marginal extremities; therefore today it is of utmost importance to work out and to offer a solution striking a balance between the landowner and the state. The first attempt to regulate the afforestation was the adoption of the "Procedure for Afforestation on Private Land" in 1998. The procedure explicitly distinguishes 3 areas, where the owner of a private household, located within the land designated for agricultural and forestry purposes, may establish forests without changing the proper purpose of land use:

- The parcels of non-agricultural lands, if the natural conditions and territorial situation makes them suitable for afforestation (sand and gravel soils, eroded slopes, ravines and etc.);
- Agricultural land parcels of unlimited size with soil fertility points not exceeding 27 and land holdings with the area up to 1 hectare with higher soil fertility points;
- Agricultural lands situated in between forests, water bodies and in other areas upon the development of the reasonably used land area.

In other cases, afforestation on the land designated for agricultural and forestry purposes is allowed only upon changing the proper purpose of land use in the manner established by the Law on Land and other legislation of the Republic of Lithuania.

Afforestation is forbidden in the following areas:

- Territories where the ban on afforestation is established in the Special Terms of Land and Forest Use;
- Territories of archaeological monuments (mounds, old burial sites, mounds and etc.);
- Territories of prospected deposits of useful minerals;
- Sites abounding in stones;
- Habitats of protected animal, plant and mushroom species as well as their populations (recorded in the Red Book of Lithuania);
- Land parcels, which, according to the approved territorial planning documents, are situated in the areas to be transferred for public needs;
- Land parcels, which, according to the approved detailed plans, are to be built-up or designated for the purposes other than agricultural or forestry use.

This regulation was the first attempt of the legal and territorial regulation of the forest distribution, and the three main criteria were by far more based on economic assumptions than other. The procedure also provides for the preparation of land management schemes for afforestation.

Over the three recent years, life brought in its corrections necessitating the change in the attitude towards afforestation:

1. Abandonment of cultivated land is increasing. According to the official land stock accounting data, the area of agricultural lands decreased by 6 700 ha from 1990 to 2001. However, the accounting data are inaccurate and the real area of abandoned lands is even larger. The forest cover increased by 52.6 thousand ha over the decade, i.e. by 0.8 % of the total area of the country. In 2000, 478 000 ha of land lay waste.

2. In Lithuania, low fertility lands up to 32 fertility points make up 660 266 ha (19.68 % of the agricultural land area).

3. According to the land cadastre data, low, average and highly eroded areas amount to 467 964 ha, i.e. 13.4 % of the agricultural lands.

4. On December 15, 2000, 39 431.1 ha of inoperative systems were removed from the drained land accounts. Inefficient drain systems cover 275 462.1 ha.

5. The areas subject to deflation make up 1 235 028 ha, i.e. 18.9 % of the country's area.

6. Within the country's private land used for agricultural activities, there are 330 602 landowners or land users, whose average land parcel area is 4.8 ha. On the parcels of such size, especially if located within the low fertility land zone, the economically profitable farming is impossible.

7. In April 2001, the vacant state land stock amounted to 775 632 ha.

8. The rural population decreased by about 3 500 from 1990 to 2000 and the tendency of decreasing in the number prevailed over the entire decade. Today, the Lithuanian rural population makes up 31.8 % of the total country's population, and the average density of population is 25 people per square kilometre. In the European Union, the average density of population is from 50 people per square meter in Ireland, 119 in Denmark, 15-19 in Finland and Sweden up to 356 people per square kilometre in the Netherlands. In the existing economic situation, the village network changes are inconspicuous. Over recent years, the number of villages showed only slight decrease, as the number of rural population hardly changed. In many districts, this number slightly increased. Presently, there are many villages in Lithuania with several inhabitants or the number of villagers not exceeding 20. In the future, along with the changing economic rural life conditions and decreasing number of population, the number of villages will continue to decline. Such a forecast is based on the fact that even today there is plenty of villages with only several inhabitants. The change in the number of villages of the country will vary from one area to another. The faster decrease in the number of villages is expected in afforested areas and territories with less fertile soils, i.e. in the south-eastern part of the country; the process should be slower in the central part of Lithuania. The decrease in the number of villages will further influence the changes of the landscape, the sparsely populated areas will increase and people will tend to concentrate in a smaller number of villages.

9. The European Union requirements bring in changes to the attitude towards the use of land. Today, the country has 3 488.7 thousand ha (53.4 %) of agricultural lands, including 2 932.6 ha of arable land. The remaining part covers gardens, meadows and natural pastures (556.1 thousand ha). Scientists forecast that Lithuania will have to transfer about 1 million hectares of agricultural lands to other uses or mothball them. This would include all soils with the fertility points up to 40.

10. The European Union sets special requirements for preservation of biological diversity. Afforestation in biologically valuable areas must be regulated by means of prohibition or promotion depending on the purposes of biotope protection.

11. In accordance with the European Union requirements, the National Agrarian Environment Protection Program, which is now under development, pays great attention to the protection of surface and underground water bodies and areas susceptible to the anthropogenic load. Afforestation in such areas would serve as one of the measures for reduction of agricultural pollution.

12. One of the European Union requirements calls for the preservation of the viability and continuity of the landscape through the protection of a villager. Afforestation, regular grass mowing and pasturing in natural meadows and pastures and extensive farming activities would contribute to the preservation of the mosaic, ecologically sustainable and aesthetic landscape.

13. The system of benefits and compensations and increase in the number of jobs in the forestry and agricultural sectors provide the preconditions for the existence of the villager, who is the main and only protector and creator of the cultural landscape and ethnic culture.

Considering the aforementioned circumstances, the further course of action could be the following:

- forests must be established in the areas selected in accordance with ecological, economic, social and other criteria; the even distribution of forests must be ensured through preparation of land management schemes for afforestation;
- forests must be established with regard to the preservation of biological diversity;
- the balanced and reasonable forest distribution requires the accumulation of different data on the national, regional (district) and farm level.

What is the current status of the process of solution of the aforementioned problems? The today's focus is on the implementation of the following main targets:

1. Preparation of land management schemes for afforestation has started. Today, 4 of them have been prepared, including the schemes of Lazdijai and Utena districts prepared in accordance with the existing legislation and the alternative schemes. This helps us gain experience. However, there are still 16 problematic districts in the country, where schemes must be prepared first and foremost. The solution of this problem is impeded by the lack of financial resources.

2. Biological diversity studies in the country have developed into large-scale activities.

3. The accumulation, on the national, regional and local level, of the databases and statistical data necessary to define aesthetic, economic, ecological and ethnic-cultural criteria has started.

Data accumulation and analysis serve as an important basis for territorial planning solutions. Today, there is a possibility of making decisions on the basis of the overall picture on the future land use by pointing out the areas for afforestation. Specialists of the Landscape Management and Territorial Planning Division of State Land Survey Institute prepared the alternative land management schemes for afforestation of Lazdijai and Utena districts by using the data of different levels, accuracy and scale both in a digital and analogous form, maps and statistical indicators. The data prepared by the specialists of the institute and collected from other institutions were used for the planning.

Economic criteria are based on the following data:

- soil data. The GIS soil data base of Lithuania on the scale of 1:300 000 is prepared, all soils of the country are represented in the analogous form on the scale of 1:10 000, preparation of GIS data bases of individual districts on the scale of 10 000 has started;
- low fertility lands on the scale of 1:300 000;
- eroded areas on the scale of 1:300 000;
- areas subject to deflation, a cartogram;
- areas susceptible to the anthropogenic load on the scale of 1:50 000;
- reclaimed lands on the scale of 1:10 000 and 1:50 000;
- situation of natural mineral deposits on the scale of 1:50 000;
- vacant state land stock, a cartogram.

Ecological criteria are based on the following data:

- the country's network of protected areas;
- the country's natural frame;

- the country's ecological network;
- information on protection of underground water;
- Natura 2000;
- buffers and protective belts around surface water bodies.

Aesthetic criteria are based on the following data:

- Lithuanian landscapes and their scenic resources on the scale of 1:300 000;
- areas and regions of recreational priority, recreational interest zones and recreational territories on the scale of M1:50 000.

Ethnic-cultural criteria are based on the following data:

- historical and cultural landscape types;
- cultural heritage areas and properties;
- distribution of population in different areas of the country.

The importance of the four main criteria varies a lot from one region of the country to another. Besides, in some cases the application of the criteria depends on a specific location. According to the general plan of Lithuania, for the purpose of differentiating the management of the country's agrarian territories, 7 zones are distinguished by their agricultural and forestry development level. Afforestation in agrarian areas must be based on different agrarian landscape reorganization (maintenance) criteria. In a view to defining the preferential criteria in different agrarian regions, the analysis of various district indicators was carried out, covering the percentage of forest land, distribution of low fertility and eroded lands, areas susceptible to anthropogenic load, areas subject to deflation, scenic resources, rural population density, drained land areas and etc. On the basis of the mentioned criteria, the importance of the economic, ecological, aesthetic and ethnic-cultural criteria in different agrarian regions was evaluated in respect to reorganization or maintenance of the landscape upon afforestation. The economic aspects are most important in the Baltic and Samogitia (Šemaitija) highlands with the largest areas of low fertility lands, so the landscape reorganization must be very closely related to afforestation. On the other hand, the scenic resources of hilly regions are estimated at the highest 8-10 points, and the continuous afforestation would damage picturesque panoramic spaces and the structure of the historic-cultural landscape. Besides, the population density prevailing in the Baltic highland region amounts to about 12 people per square kilometer, i.e. its is significantly lower than the average rural population density in Lithuania (18.4 people per square kilometer). In order to stop the extinction of villages as well as to reduce the rural depopulation processes, cardinal landscape changes, high concentration of the extreme population density as well as infertile and low fertility areas in hilly regions, the special state support is necessary for afforestation and farming securing.

Today, it is possible to assert without any reservation that the most important afforestation aspects comprise the afforestation of less favoured areas and preservation of biological diversity or its improvement within impoverished not afforested areas. This means that economic and ecological factors must be given priority at the national level and here afforestation must receive the financial support.

The following conclusions could be provided in discussing the possibilities of securing the balance among ecological, economic and social assets in the process of afforestation of agricultural land:

- It is necessary to determine and establish the attitude towards infertile and fertile agricultural lands on the national scale;

- Main afforestation targets at the national level should be low fertility unproductive lands as well as preservation and improvement of biological diversity;
- The State has to define its relations with landowners, at their will to afforest their own land without restrictions or partial restrictions, or to take out afforestation insurance;
- It is necessary to define, at the national level, the priorities of afforestation on agricultural land in relation to the financial support;
- It is necessary to prepare the amendments to the Law on Land allowing the afforestation without changing

the proper purpose of land use, provided it is in compliance with the state interests;

- The rational distribution of forests is possible only according to land management schemes for afforestation;
- For the even development and justification of afforestation, it is necessary to accumulate new data, to revise the existing data and to develop databases on the national, regional (district) and local levels;
- Afforestation is one of, but certainly not the only way of solving social, economic and ecological problems. It must be integrated with the implementation of other state-supported programs.