



IMPROVING DEGRADED LAND TO ENHANCE THE LANDSCAPE VALUE OF THE TIMIS VALLEY AREA

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Abstract:

Eroded soils are the main source of alluvium in torrential floods, with large amounts of soil and rock being carried away by diffuse and concentrated runoff. The project aims to stop the land degradation processes and to progressively improve the land under the direct effect of the protective forest crops, to protect human settlements, agricultural and forestry land, and other objectives in the area, and to add economic, social, landscape and tourism effects. The paper presents the results of research on their location, genesis, characters, typology and silvicultural improvement. The general survey concerns the perimeter as a whole, and it concerns the geographical framework, the degradation, its consequences and the works carried out in the past in the territory. Detailed research is carried out on smaller homogeneous units, which, after being intensified and delimited, are characterised and classified. The need to adopt a complex of measures and improvement works stems from the principle of integral and sustainable improvement of the perimeter and is imposed by the diversity of existing situations, proposed objectives and problems to be solved. The works in the Timis Valley improvement area are justified by the general tendency to eliminate, as much as possible, the negative influence that human activity has on the ecosystem where it is felt. As a practical discipline, forestry improvement should be greatly expanded and the necessary funds allocated so that the area of degraded land is reduced.

• Introduction

- Forest vegetation plays a decisive role in preventing degradation processes, as it reduces rainwater run-off, stabilises, restores, improves, protects the soil and enhances the value of the land. The improvement of the area under study is based on the use of mass cultivation, which is the main form of afforestation of degraded land and the quickest way of extinguishing degradation processes and enhancing the value of the land. [11, 13, 15]
- The improvement perimeter under study for the productive release works is located in Caras-Severin County, near the town of Caransebeș on the right bank of the Timiș River, in the eastern part of the village of Valea Timișului in the commune of Buchin (Figure 1).



Figure 1 Improvement perimeter under study

Table 2. Average monthly temperatures

Specifications	Months												Medium annual
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
Average temperature (°C)	2,5	2,1	0,0	6,0	12,0	15,0	17,6	17,0	11,5	7,6	3,0	0,8	7,8

• Material and method

- The general survey concerns the perimeter as a whole, and it concerns the geographical framework, the degradation, its consequences and the works carried out in the past in the territory. Detailed research is carried out on smaller homogeneous units, which, after being intensified and delimited, are characterised and classified.
- The complex operation of identifying, separating, characterising and classifying the various landforms affected by the destructive action of rainwater is called the mapping of eroded land and its purpose is to improve the improvement perimeters. The scale at which the mapping is done is 1:5000. The mapping method used is the stationary and unitary mapping method.
- As a result of these situations, the following objectives are pursued in the improvement action:
 - stopping degradation processes;
 - improving the condition of the land and preparing it;
 - land improvement and enhancement works
 - To achieve these objectives, the following issues need to be addressed:
 - Clearing the land of stones, waste, vegetation debris, etc;
 - Reduction of soil capacity to ensure favourable conditions for the natural propagation of species;
 - Removal of soil deficiency;
 - Improving environmental conditions;
 - Ensuring peace in the improvement perimeter.

• Results and discussions

- We have drawn up the work schedule for the determined afforestation composition.
- We also present the material requirements for the work to be carried out, as well as the necessary funds.
- The preliminary estimate is given below, followed by the requirements for seedlings and other materials, and the yearly phasing.
- The list of proposed works is a quantitative estimate (preliminary estimate), which contains data on the amount of work and is used to plan the work, evaluate the costs of the work, and determine the material and labour requirements.

• Table 6. List of quantities of works

Category of works	Codul lucrării	Denumirea lucrării		U.M.	Cantitatea
A. Afforestation works	C1	Installation of forest crops		thousand pcs.	75
	C2	Completion of forest crops		thousand pcs..	37,5
	C3	Forest crop maintenance	Year I	ha	15,0
			Year II	ha	15,0
			Year III	ha	7,5
			Year IV	ha	7,5
			Year V	ha	3,75
			Total	ha	48,75
A. Soil preparation and improvement works	B1	Training in glasshouses		ha	3,75
	B2	Topsoil fertilisation		m ³	753,75
A. Site works	A1	Gathered stones and boulders		m ³	450
D. Fencing works	D1	Barbed wire fence		m	5000
	D2	Hedge		thousand pcs.	11,25

• Table 7. Work phasing plan

No. crt	Code and name of works	M.U.	Quantity to be executed in the year						
			2023	2024	2025	2026	2027	2028	2029
1	A1 Gathered stones and boulders	m³	450	-	-	-	-	-	-
2	B1 Training in glasshouses	ha	3,75	-	-	-	-	-	-
3	Topsoil fertilisation	m	753,75	-	-	-	-	-	-
5	C1 Installation of forest crops	thousand pcs.	-	75	-	-	-	-	-
6	C2 Completion of forest crops	thousand pcs..	-	-	22,5	15	-	-	-
7	C3 Forest crop maintenance	ha	-	-	15	15	7,5	7,5	3,75
8	D1 Barbed wire fence	m	5000	-	-	-	-	-	-
9	D2 Hedge	thousand pcs..	-	11,25	-	-	-	-	-

• Conclusions

- It is recommended that staff planning, implementing and carrying out these actions should be as well trained as possible and know all the details and details of the actions. Even if the area under study is not very large, the nature of the degradation processes makes it necessary to intervene as responsibly and quickly as possible.
- For the improvement perimeter on which the study was carried out, the proposed solution aims at productive criteria, as well as lasting improvement, of the cropland. The proposed solution consists of installing a hardy hardwood pine crop that can cope with the conditions of the area and at the same time produce both timber and other forest products.
- As a practical discipline, forestry improvement should be greatly expanded and the necessary funds allocated so that the area of degraded land is reduced.