SUPPOSITIONS IN ORDER OF RECONSIDERATION OF THE ABANDONED LAND - MEADOWS AND FORMER AGRICULTURAL LAND

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Abstract: *Economic and social changes that occurred in Romania in the last two decades, are very accurately reflected in state of land and in his use. Currently many agricultural lands are in various stages of abandonment whith multiple causes. In the early years of these two decades, occurs a fragmentation of agricultural lands through their transition from state ownership to private ownership. Most land-owners did not have necessary mechanization, leading them to gradually abandon their lands. In case of pastures, the abandonment has occurred, mostly due to plummeting productivity from overexploitation or for breaching the most elementary rules of exploitation and maintenance. The vegetation on former agricultural land in abandonement is evolving to the type of vegetation that are characteristic for the area. In most cases species with valuable forage are scarce and have low weight in the construction of vegetation cover. In these cases is needed a choice of management strategies for the land, profitable in terms of costs, so that the meaning of vegetation development to be to a valuable type of meadows. An important step required before any recovery action is land mapping. This can be done using advanced techniques of aerial photography or by satellite. For assigning priority actions needed to be taken, the size of areas and the type of property of land, that will be subject of intervention, must be taken in consideration.In cases where intervention would have high costs and doubtful benefits, may be choose a minimal intervention, so that land may be a kernel of biodiversity for flora and fauna.*

Key words: *abandonated lands, pastures, agricultural lands, priority, recovery, overseeding.*

INTRODUCTION

Issues of former agricultural lands, currently under temporarily or permanently state of abandonment, is topical in Romania. Before 1989, centralized state-controlled agricultural system, did not allow abandonment of the agricultural lands, even if the productivity of some lands was very low. After 1990, with the start of land restitution to former owners or to their inheritors, many of agricultural lands have reached the position to be abandoned. Lack of expertise of new owners, lack of mechanization, poor financial condition of new owners, the older age owners, residence far away from land they held due to earlier migration of youth to cities, and mainly due to lack of long-term agricultural policy, or incoherent agricultural policy (incompetence or malevolence?), applied by successive governments after 1990, are the main causes of land abandonment.

Also, many natural grasslands owned by local communities as communal pastures, are in a deplorable state due to overexploitation or underexploitation, and especially, by the lack of interest in applying the most basic methods of management of these pastures. In this given situation, we must provide solutions for vegetation, on these lands, to be conducted as quickly, or to install a natural vegetation characteristic for the area, or to the most valuable natural grassland.

MATERIAL AND METHODS

In preceding stage for establishing priorities for intervention is needed a comprehensive study of existing vegetation types. Phytocoenological studies are carried out in three phases (figure 1).

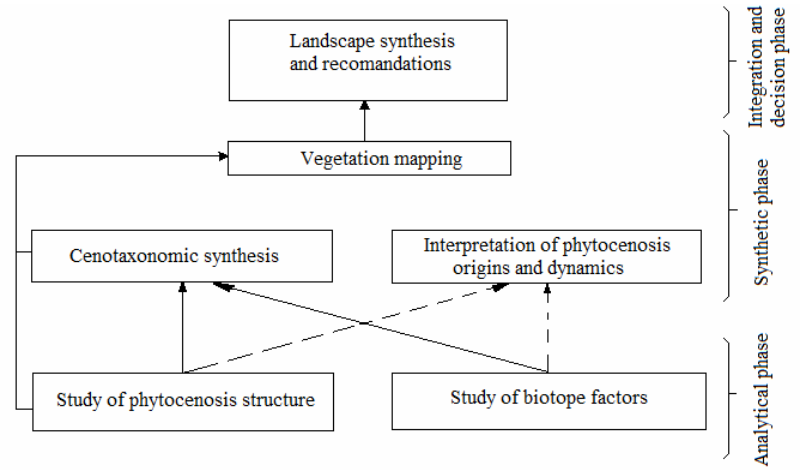

Figure 1: Phases of phytocoenological studies (by CRISTEA V. 1993)

These three phases are:

- *analytical phase*, in which the phytocoenologist and taxonomist will identify quantitative, qualitative and spatial structure of studied phytocoenosis, intensity of antropozoogene pressure, chorology of plant groups, while pedologist, climatologist and geomorphologist will make an analysis for values and dynamics of biotope and general factors (CRISTEA V. 1993);

- *synthetic phase*, conducted mostly in laboratory, will be made especially by phytocoenologist which will bring together all analyzed phytocoenosis fragments in units of vegetation, will develop succession scheme of plant communities and, finally, will make detailed geobotanical map of studied region (CRISTEA V. 1993);

- *integration and decision phase*, made by discussions with specialists in practical domains and participants in the study, will follow classification of different types of vegetation according to their indicator value, production and protection, determining the optimal solutions for complex management of given space, taking into account prospects for socio-economic development of studied region (CRISTEA V. 1993).

The bioform spectrum of species which are identified in studied lands, provide paleoecological information on flora and vegetation; give relations regarding phytocoenosis balance with all environmental conditions and with the station particularities; suggests possible succesion directions for analyzed phytocoenosis and intensity of antropozoogene pressure intensity; contribute to elucidate the structure of phytocoenosis.

Informational message that geoelements provide, will be more interesting to phyitocoenologist, as the country of origin of a category is farthest from the studied are; since that category is installed in very remote time periods or very recent; since a geoelement proves to be a native species.

RESULTS AND DISCUSSIONS

Abandoned agricultural lands have recorded at least two changes over time, first when natural vegetation was removed to create farmlands, and the second when such lands ceased to be cultivated. Currently these lands are in an intermediate state, vegetation on the lands not returned to the original, and often needs restoration and rehabilitation measures through human

intervention. Appearance and condition of abandoned farmlands varies depending on whether were affected soil structure and texture, permeability, fluid regime, terrain profile, etc..Therefore lands like these are in various conditions. Some lands are on track to their naturally recovery. Others are bare of vegetation or are invaded by problem species and are in need for human intervention for installation of the natural vegetation.

Since abandoned farmlands are unattractive to most people, their characteristics and the state is not known nor well studied. The first step to determine the optimal method of restoration is the identification and mapping of all abandoned farmland. For this can be used several methods:

• using information from the agricultural offices in the municipalities, but, most times, are inaccurate because they are not updated;

• using techniques of aerial photography using airplanes with or without pilot, which are very accurate but very expensive;

• using specialized satellites for vegetation mapping, can be used existing information at regional offices of the Agency for Payments and Interventions in Agriculture (APIA).

After mapping of abandoned farmlands and pastures that need restoration, follows assigning of priorities for intervention, taking into account:

• type of land ownership (public or private);

• size of area, preferably those having more than 5 hectares;

• status of soil degradation;

• relief of the area where these lands are;

• stage of spontaneous vegetation developement after abandonment;

• rainfall regime and the existence and condition of water sources;

• existence in the vicinity of patches of natural vegetation as a seed sources.

After setting priorities, can begin identification of the most suited methods for each field separately. The best way would be, when on land to be abandoned, to apply from the first year seeds from a valuable type of natural desirable vegetation from that area. As this method is late to be applied, except for land intended to be abandoned, may be applied repeated mowing method of vegetation before flowering and fructification, when spontaneous installed vegetation does not contain or include few valuable species, concomitantly with overseeding with seed mixtures from valuable species. Following, seed reserves of unwanted species would decrease, and evolution of vegetation could be directed towards grasslands with a valuable floristic composition.

Overseeding will be made with seed from mixtures of forage species belonging to valuable local ecotypes which are most appropriate for local conditions in the area, and for the use of these grasslands. This method can be combined with fertilizing using manure or chemical fertilizers. Researches on the effect of optimum or minimum effective amounts of fertilizers were made for most of the vegetation areas of our country. By exploiting these investigations could be speeded up installation of valuable types of grassland vegetation, with minimal cost reported to the effect.

If the soil on the abandoned land has suffered deterioration of structure and texture, or erosion is evident, must be taken remedial measures to limit them.

CONCLUSIONS

Huge area of farmlands affected by various forms of degradation due to, among others, ignored measures to prevent soil erosion, misuse of fertilizers and pesticids, excessive use of heavy agricultural machinery, mismanagement of irrigation systems and other works

for land reclamation, etc. Using best practices in agriculture is therefore a highly effective tool in combating land degradation and desertification.

Grassland area, in Romania, of approx. 5 million hectares are currently in an advanced state of degradation due to natural factors as: arid climate, catastrophic flooding, permanent or temporary excess of moisture, soil erosion, acidification, salinization, invasion of nonvaluable herbaceous and woody vegetation, etc., as well as anthropogenic factors such as: abandon and undercharging with animals, overgrazing, lack of routine care and maintenance works of the grasslands, insufficient nutrients, fluid imbalance, pollution and more. To redress the situation of these grasslands in large geographical areas and altitude levels is necessary to develop a comprehensive strategy based on experience acumulated over the past 50 years, supplemented by new data on the causes that are leading to degradation, establishing specific opportunities to improve the grasslands on the formations and types of natural pastures, respectively corresponding way for better valorification with animals and ultimately better management of one of the most important natural resources in the country. After intervention, vegetal and animal production with the primary resource pastures, may increase by 3-5 times in parallel with biodiversity conservation, the completion and beautification of landscape planning, environmental protection and other benefits in line with EU norms.

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