# NATURAL ENVIRONMENT, ANTHROPOGENE ACTIVITY AND ENVIRONMENTAL PROBLEMS IN THE COMMUNE OF BALDUSHK

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## Abstract

Since ancient times and till today the human being has used the natural resources in his territory to fulfill the need to grow. He has not always been careful and friendly to the natural environment leading to problems for the environment and for the people themselves. This can be seen in the commune of Baldushk. Some environmental problems are disturbing for the natural landscape and for the quality of people's lives as well. As such we can mention: degradation and erosion of the land; old and new land sliding; obvious maltreatment of natural vegetation and wildlife. These have been inherited problems but they have become more disturbing in the recent 25 years, because the movement of population from hilly villages is accompanied with erosion and land sliding of agriculture land. The increase of different buildings, including the dwellings which are obviously increased in the valley of Zhullima has created problems in the occupation of the land without any criteria and because of the humidity and fog even the inhabitants health does not have a of of quality anymore. The pollution from urban waste is obviously increased and they have multiplied the amount if we compare them to those of some years ago. The sewerage and solid waste as well have polluted the surface and underground waters, even though there is no real measurement. The bottoms of the streams are filled with plastic waste etc. The erosion of the riversides in the river of Zhullima is increased and the land is damaged. In fact in the recent ten years there is a small renovation of protection measures with stone barriers etc. The biggest problem in the territory of the commune is erosion and land sliding because of the prominence of clay and alveoli mountains ones and the misuse of natural vegetation. These were increased during the creation of new land such as for example in Isrose, Shpat, Tevarej, but even after the year 1990 when the population is involved in an obvious rural movement (exodus). The erosion and land sliding are directly accompanied with the loss of agriculture land, but together with the pollution the values of the natural landscape are damaged as well. The first does not

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affect very well in the reproductive activity of the agriculture land and as a consequence in the economic activity and welfare of the inhabitants. In our research there will be presented these problems and the factors which condition them, they will be illustrated with concrete data, which will be analyzed to draw conclusions and suggestions to improve the situation. The collaboration between the researchers, local decision makers and community will ease a lot the improvement of the situation, even though there are no sufficient financial means at the moment. There should be a more friendly interrelation and mutual respect between the nature and the inhabitants, because we should think about the future generation which will have higher requests towards the environment where they live and work.

**Key-Words**: Natural Resources, Degradation, Erosion, Slipping, Protection Measures

## INTRODUCTION

As everywhere in our country the Baldushk commune as well has been confronting and still has many environmental problems such as: erosion, landslides, misuse of natural vegetation, pollution of surface and underground water etc. In order to write this article we have put great importance on the study of factors and causes of the localization of these problems. The relation and dependency of natural and human factors are directly responsible to the appearance and further intensification of many environmental problems. The human activity on the environment has had a great impact and consequently its view has changed in time and space. The underestimation of geomorphologic risks such as erosion and landslides which are more widespread is associated with damage of human economic activity and environmental values as well. This article will provide exceptional help to the decision makers of the local government for better environmental governance in the territory of Baldushk commune. Here they will find information about environmental issues, their distribution scale, factors and causes which have conditioned them and the necessary measures to avoid the negative effects caused by these problems.

## MATERIAL AND ANALYSIS

### 1.1. The impact of natural and human factors in the appearance of environmental issues

The factors conditioning environmental problems are mainly natural, but the human factor has obviously influenced it. The main factors in the group of natural factors which have conditioned the emersion of environmental issues (erosion, landslides, landfalls etc) are: the spread of terrigenous rocks, destructive activity of water flows, damage of natural vegetation, misuse of land etc. The climatic factor remains the main natural factor which has favored the geomorphologic problems in the territory of Baldushk commune. In this respect an important role is especially played by the rainfalls like downpours and their great amount for 24 hours especially at the beginning of autumn when the land is defoliated from vegetation (Sala, 2005).

The impact of human factors is seen in the inappropriate interventions on key elements of the environment, especially on the misuse of vegetation and land. The human being has a great impact in preventing and reducing the consequences of these environmental issues on the environment and on the economic activity (Sala&Qiriazi, 2007). The natural conditions are very suitable for the intensive development of surface erosion in this territory. The erosion centers are strong and especially in some sectors the slopes are obviously degraded and deserted such as in: Tavaren, Kocaj, Veski etc. The main cause of their degradation remains the appearance of clay and alveoli rocks on the surface and the damage of natural vegetation. It is exactly in these slopes where we find the biggest centers of erosion (**Photo 1&2).**

**Photo 1:** Erosion in Veskia

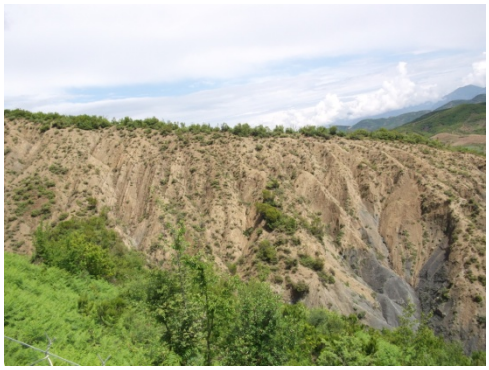
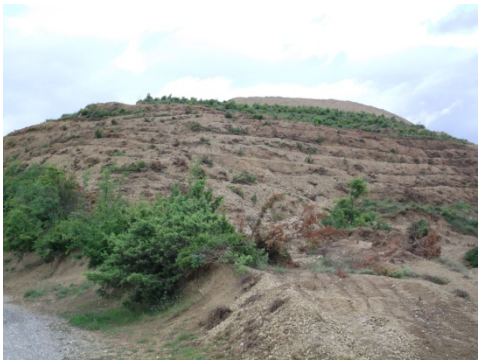


**Photo 2:** Erosion in Fushas

Besides natural factors, the human being has also helped in the intensive development of erosion and degradation of the slopes through deforestation, fires, overgrazing of bushes and grass, misuse of land, terraces, roads etc., **(Photo 3&4).**



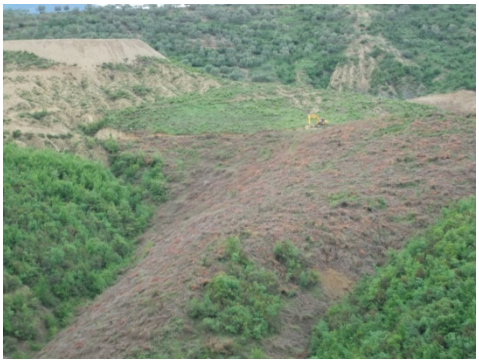


**Photo 3&4:** Building terraces without protective measures and uncontrolled deforestation in the village of Rova

The digging of new land in the 1980 of the 20th century has stimulated surface erosion and today in many sectors of the villages Vrap, Kocaj, Baldushk, Fushas etc., we find agricultural land which is degraded and deserted (**Photo 5&6).**

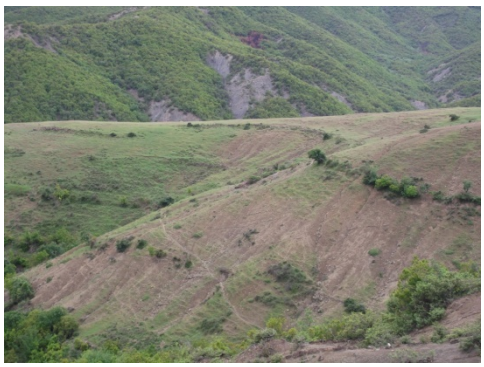


**Photo 5&6:** Abandonment of land accompanied with surface erosion activation (Fushas 2013)

The high rate of degradation has led to many harmful consequences for the environment and the human economic activity.

The erosion process has been threatening the water-collecting area in a significant way. The problem of filling has had the greatest rhythm after the ’90s because during this period there was an entire lack of anti-erosion measures which were constructed before. In addition to these factors in the last 2-3 years their quick filling is affected by deforestation and digging of new land near the Rova reservoir **(Photo 7&8).**

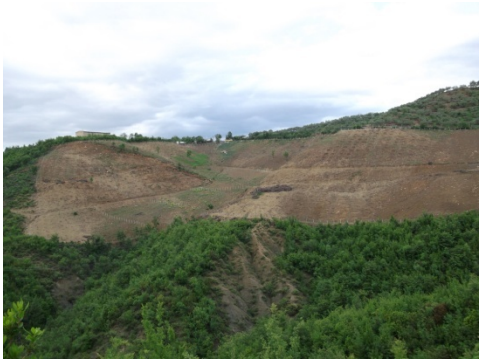


**Photo 7:** The risk of filling the water-collecting area(Rove 2013)

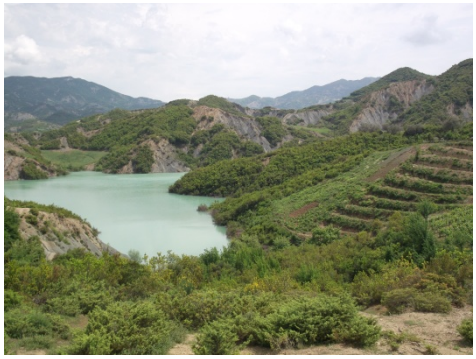
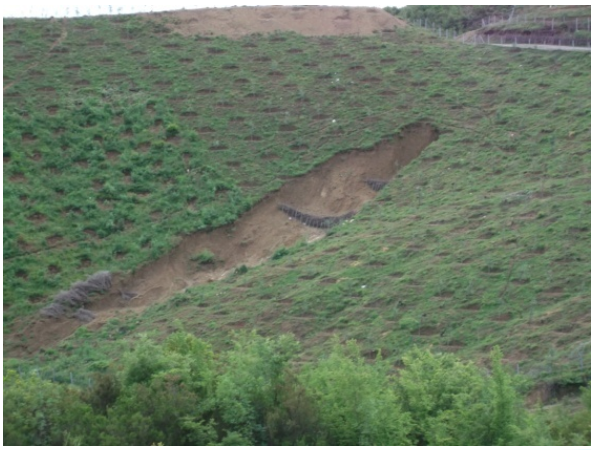


**Photo 8:** Filling of the water-collecting area by the creation of new land (Veski 2013)

The inhabitants of this area are very concerned about this phenomenon because they use the water of this reservoir for the irrigation of agricultural land during the dry period of summer.

The landslides have played the main role in the escalating morphology of the slope in many sectors of this commune. The new or old landslides have affected the clay rocks as well as the sand and conglomerate ones placed over them (Group of authors 1983).

They constitute a geomorphologic risk which stimulates the degradation and desertion of the physical environment and they also cause problems in the social and economic activity of people (Qiriazi 1990). The avoidance of this risk needs a careful evaluation of the slope peculiarities and every human intervention on them, taking preventive measures such as: constructing protective walls, careful drainage, planting trees with a deep roots system etc. There are many cases when the landslide is stimulated from human intervention in hilly slopes or the bank of streams **(Photo 9&10).**



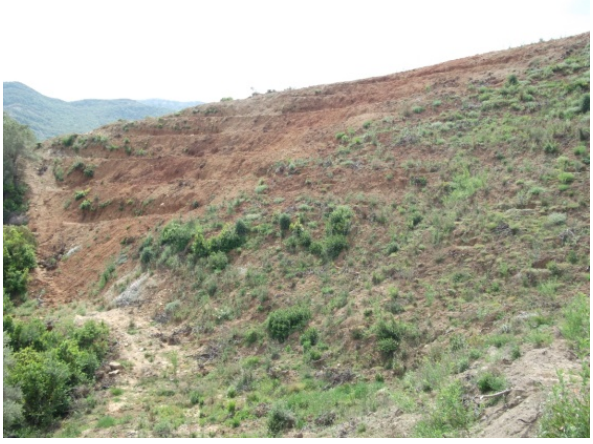


**Photo 9:** Digging new land accompanied with landslides(Isufmucaj 2013) **Photo 10:**Landslide of the created terraces (Kocaj 2013)

New landslides are present almost in all the slopes where there are build new terraces, because they are abandoned and destroyed or in other cases there has been no attention in taking anti-erosion measures. Similarly in the west slope of Vrapi hills, great areas of bushes have been deforested and burnt recently, so the erosion and landslides have increased considerably (Sala, 2005).

In the ’70s, terraces planted with cherry trees were created in the villages of Vrap and Shpat. In some sectors they were built in sliding areas where the negligence to remove the excess water created the conditions for their reactivation. Abandonment of these terraces after 1991 was associated not only with the reactivation of the previous landslides but the activation of new ones **(Photo 11&12).**

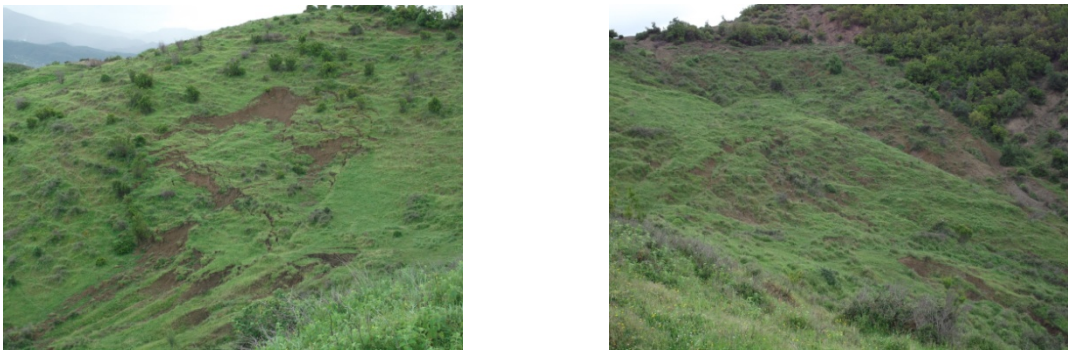


**Photo 11&12:** Abandonment of land and activation of landslides (Fushas 2013)

The construction of roads or irrigation canals on the slopes was associated with the activation of geomorphologic processes where they pass by, especially landslides and muddy ravines. So along the escarpment of Mustafakocaj-Vrap road there are landslides of small size. Their reactivation during winter leads to the road block.

The landslides are spread considerably even in the slopes of Zhullima valley, especially on the slopes of the main branches. Here we find destructions, landfalls and erosion centers which threaten the agriculture land such as in: Isufmucaj, Tavarej etc. The main cause of these processes is the side erosion of water flows, the latter highly favored by uncontrolled human intervention in the bottom of the streams **(Photo 13&14).**

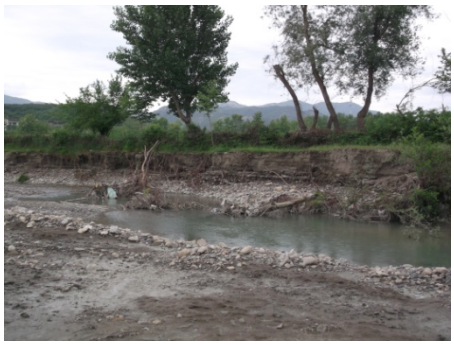
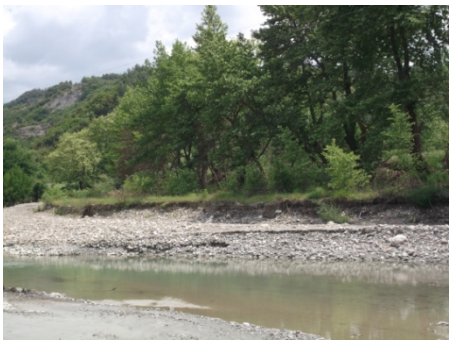



**Photo 13&14:** Side erosion in Zhullima valley

The Zhullima stream has a considerable number of ravines and muddy streams in some of its branches. They not only erode the hilly slopes but by depositing solid material which they transport, they bring morphologic changes in the bottom of the slopes and the valleys where they end up. As a result of slope gradient and geologic construction from clay and alveoli rocks, the muddy streams have greatly favored the degradation process and the creation of erosion centers and therefore a greater flow of solid materials in the bed of Zhullima valley, which shows the great role of their erosion and transportation activity (Sala, 2005).

They have also influenced in filling the agricultural land with solid material, have damaged roads, water-collecting areas etc. In many sectors of this territory, the abandoned land is seized by small streams and ravines, which are deepening their bed as long as there is no attempt to take preventive and restrictive measures **(Photo 15&16).**

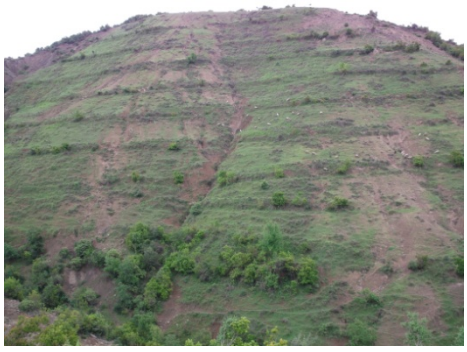
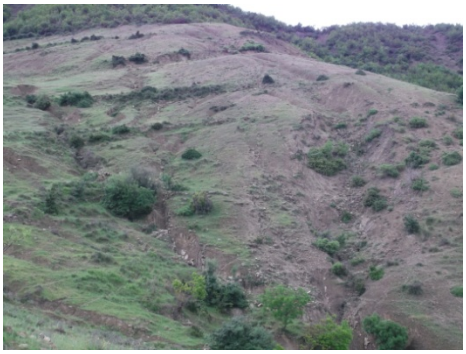



**Photo 15&16:** Creation of streams in the abandoned land

## RESULTS AND DISCUSSIONS

The environmental problems are present in many sectors of Baldushk commune being associated with the damage of natural environmental values and economic and social damages. Therefore it is necessary to know and evaluate the natural resources and environmental problems which lead

to the damage of these values. Inappropriate use of the natural environment by human being leads to the regeneration and emersion of many environmental problems in this territory. Erosion and landslides are threatening enough agricultural land in the villages of Vrap, Veski, Kocaj, Baldushk, Fushas etc. They are becoming the causes of land degradation, increasing more and more the environmental cost and the economic one as well because of their inability to provide the increase of the crops production (Sala, 2008)

In many sectors of this commune, during ’55-’85, the activity of people is focused on the restriction of erosion intensity by planting 770 hectares of forest, mainly pines. So in the degraded slopes near Shenkoll, Rove, Tavaren etc., there were reforestations with pines which have affected quite well not only the degradation process, but the regeneration of the vegetation of bushes as well, forming the humus layer and vegetal part of land **(Photo 17).**

**Photo 17:** Reforestation with pines in the ‘80s to restrict erosion (Rove 2013)

Reforestation in this period had a positive effect in reducing the risk of filling with solid material of the Rova reservoir, but as we mentioned above the risk for this reservoir has become more threatening in the last 2-3 years due to the inappropriate deforestation and creation of new land in the hilly slopes near this reservoir.

Reforestations obviously limited the amount of solid flows from the muddy streams which we mentioned, whom filled the agricultural land and damaged the planted crops. Besides planting trees, during these years there were undertaken many other measures which had positive effects such as: mountain disposition, sanitation, barriers, drying marshes, narrowing of stream beds etc. During this period, there were damaged about 350 hectares of grassland, forests and shrubs in the hilly area to open new land, the negative effects of which were seen after the ’90s as a result of the lack of law enforcement to protect the environment and inappropriate intervention of people in the environment such as: destruction of dispositions, embankments, drainage ditches, uncontrolled cutting of more than 50-60 hectares forests, damage of more than 200 hectares of vineyard etc. Recently, there were some individual protective measures taken in some sectors

against the erosion process such as: construction of embankments on the road sides, stream banks, reforestation in some sectors etc., **(Photo 18&19).**

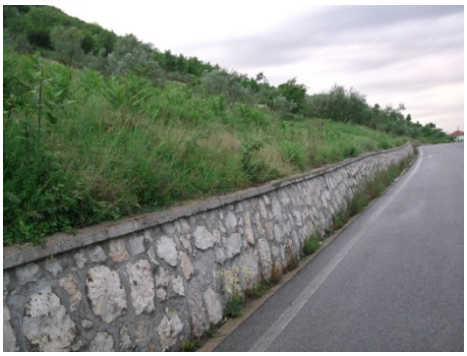


**Photo 18&19:** Protective measures against erosion

But these measures are almost non-existent considering the deterioration of the situation which the territory of this commune is facing. But the important thing is that all the possibilities exist to regenerate the physical environmental values if there would be carried out detailed scientific geomorphologic studies, on the bases of which the protective measures would be taken. This article is meant to serve this goal. Thus the improvement of the current situation would require the following protective measures:

- Planting trees on more than 350 hectares of land, which is deforested and is directly under the surface erosion process;
- Cultivation of over 250-300 hectares of pastures with perennial vegetation to make erosion less active and to use them more effectively;
- Regulating forest cutting according to the respective law;
- Mountain disposition, building single hedges etc., in the hilly slopes;
- Improvement of land in the field, rehabilitation of irrigation-drainage works;
- Construction of barriers on the stream banks which take a large area of land every year during the rainfall season;
- Construction of sewerage system;
- Providing service for the collection and transportation of urban waste which would limit their illegal landfills;
- Keeping the environment clean from the uncontrolled development of business and manufacturing activities. This problem is deteriorated by the failure of the local government to take measures in order to discipline them;
- Awareness campaigns to make the inhabitants of the community aware of a clean and well maintained environment.

It should be noted that collaboration between researchers, local decision makers and community will greatly help the improvement of the situation although there are no needed financial means, so it is important to provide them. There should be established friendly relationships and mutual respect between nature and inhabitants, because we have to think more about the future generations who will have more demands towards the environment where they work and live.

## CONCLUSIONS

The suitable natural conditions and misuse of physical environment by the human society make the environmental issues very widespread in the territory of Baldushk commune. The most concerning environmental problems are erosion and landslides which are the causes of land degradation.

The detailed scientific geomorphologic research will serve as the basis to take protective measures.

The experience from the years ’55-’85 in limiting the intensity and increase of the erosion and landslides area has shown that there exist all the opportunities to preserve and renew the values of the natural landscape.

Underestimation of negative effects of environmental issues from the inhabitants and local government decision makers has had negative consequences on the landscape, economy and social life of people.

There have been taken some individual measures against erosion but there is still much to be done in this direction.

A close collaboration between geomorphologic researchers and local government decision makers is required for a better management of the territory.

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