

# Creating Conditions for Environmental Restoration, a Step towards Sustainability of Economic Development and Environmental Health in R. Kosovo

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## Abstract

Human intervention on the environment with its industrial activities induced major environmental changes in biodiversity, which have led to major economic and environmental damage.

These long-term interventions on land ecology that create negative economic and environmental impacts. The dynamics of direct destruction of environmental settlements and ecosystem interventions led to the destruction of a large number of species, within a year many species are lost, which no longer return to the ecological systems which directly affects the economic development of a country. This has directly impacted the global climate change (rising and falling temperatures, floods), posing a threat to the survival of the whole of living beings on earth. Environmental repair is a compelling solution and an ecological imposition, it is necessary to undertake some key strategies for preserving the ecological environment. The global economy has given the alarm as an emergency need for a new strategy for environmental restoration, a sustainable and effective environment, and opportunities for preserving biological diversity, environmental management and environmental-ecological testing. It aims to determine that ecosystems are necessary to support the future environment for sustainable socio-economic development.

**Key words:** *dynamics, ecosystem, economy, restoration, health, law.*

## INTRODUCTION

Rehabilitation of the damaged environment is the application of ecological principles, species return to the ecosystem that has been damaged by human activities and their return to their natural state[1]. Ecological restoration has come to be introduced as mandatory subjects in state or private educational institutions and in all economic, legal, environmental, pedagogical programs ,etc [2]. To apply the environmental law strictly, not to remain in government drawers, which would affect more efficient ways for restoring the environment, economic and social environment. Healing the environment is relatively long process compared to the time of environmental degradation [3]. Improvement can be done in the natural way but is a very slow process. Environmental improvement initiates the human factor and accelerates the process of environmental recovery which will enable not only a good health but also a steady growth of the country's economy [4]. The main environmental improvement strategy is the creation of environmental conditions for biodiversity conservation, the application of legislation as a condition for not changing the climatic conditions to the addition of biological species to ecological systems which is closely related to the economy of each country [5].

Ecosystem recovery is the use of organisms such as: (prokaryotes, mushrooms, plants, etc.), which means the release of accumulated poisons in polluted environments that accumulate toxic components in their body. Biological augmentation or regeneration of ecosystems in the environment is the process of nutrients envisaged with the help of specific organisms such as: (nitrogen fixation in plants in the nitrogenous environment) [6].

Improvement is not only a tool to address the problem of degradation, but a tool for environmental research that enhances our knowledge of environmental regeneration that would impact the growth and prosperity of humanity[7].

## Microbiological control of harmful species, economic growth and food safety

Microbiological control of mollusks and their habitat is considered an important process related to food safety. *Escherichia coli* is a bacterium found on the sites of all warm-blooded animals, including man. In Europe and elsewhere, it is used as an indicator of the hygienic quality of mollusks [8]. The *E. coli* level in the mol uses indicates the level of fecal contamination (Rivers, Lakes) in which they are exposed and determines the treatment required before consumption of food products.

## RESULTS AND DISCUSSION

The monitoring of this bacterium is the year: 2016, Drin i Bardhë River Basin. The results show that during 2016, *E. coli* values in molasses are much higher than in 2015. We also note that the values of the three stations are higher.

It turns out that the river waters in the part before discharging the urban liquid waste are generally microbiologically clean in the sample (100ml). Referring to EU norms for bathing waters, it results that river waters after the discharge of urban liquid waste are microbiologically polluted. This indicates that in no case liquid urban waste is cleaned before discharge. Pollution rate is in the order of 104-106 for CF 103-105 for Cfu / cm<sup>3</sup> 100 ml highest pollution. Referring to the periods of the year, with rare exceptions, higher pollution is observed in July-August due to lower water level and temperature increase, while lower pollution in October-November due to lower temperatures, and increased level of water water . According to Directive 2006/7 / EC of the Parliament and Council of Europe, adopted in March 2006, it lays down the obligation that by 2014 all member states should reach the microbiological norms for surface waters.

Table 1. Tabular layout of the locations and veils of the CFU in the places

Pollution rate 104 - 106 for CF 103 - 105 for Cfu / cm <sup>3</sup> 100 ml highest pollution.				
No	January	June	October	November
D1	77	95	104	99
D2	79	97	101	98
D3	80	96	103	88
D4	81	98	101	89
D5	78	98	104	90
D6	82	99	103	95

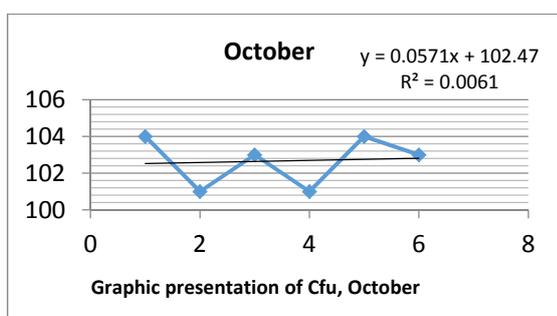
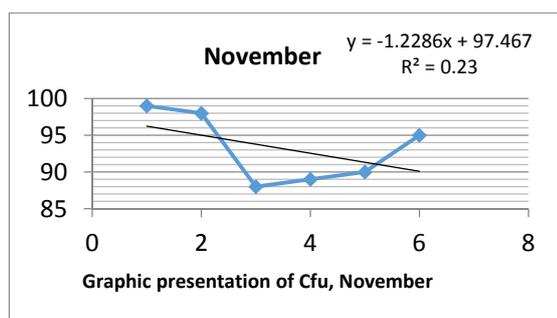
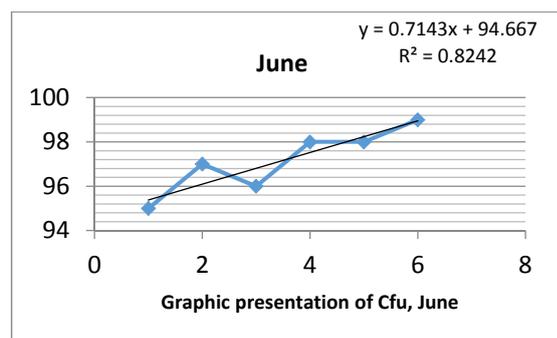
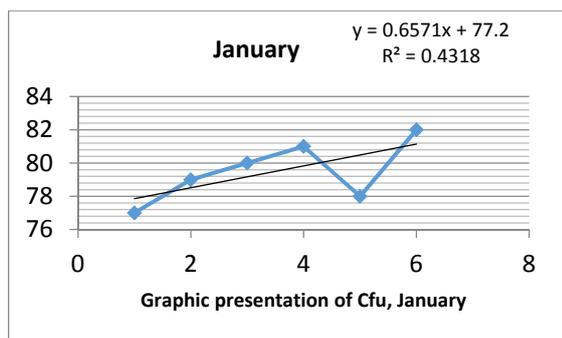


Fig 1. Graphic presentation of Cfu, by months and place of the monographs based on the regression analysis.

### Improving the ecological condition for the future of the environment and human society

Although the world's economic systems are enjoying rapid expansion, ecological systems are degrading to an alarming level. The rapid growth of the human population has resulted in deforestation of natural resources and destruction of natural habitats. Industrialization, non-application of environmental legislation and uncontrolled use of various toxic substances (pesticides, herbicides, etc.), has destroyed many flora and fauna of Kosovo, which is gradually disappearing[9]. Environmental contamination is caused by the disappearance of various species, the contamination of agricultural products (foods), and the appearance of a large number of different carcinogenic diseases. In 2016, according to the health ministry in Kosovo, more than 1,678 people were affected (cause, contaminated environment, contaminated food and tobacco use compared to 2015, 250 cases more). Approximately 117 million acres of wetlands have been lost in the United States since 1780, excluding Alaska[10]. Conversion of natural habitats into agricultural and industrial landscapes and ultimately in degraded land is a major influence of human activities on the natural environment.

Restoration is necessary to mitigate climate change pressures and take ecosystem services to the maximum and balanced relationships of species, whether directly or indirectly, have a positive impact and sustainable growth of species in ecosystems

### Ecological restoration projects in R. Kosovo

Issues, successful and assessment of procedures, restoring ecologists face practical and genetic consequences when selecting plants and animals for ecological restoration projects. Increased genetic variability takes attention to restoration and research practices because it is the basis of insecurity of adaptation to species in the environment and reduces the effect of cultivation. Many flora species to help restore the degraded part contain some special bills. Some species of *Lupinus Albus L.* are used for ecological restoration because they have the capacity to fix nitrogen[11]. Other species such as *ammophila breviligulata* are widely used for restoration and almost show wide genetic differentiation across its geographic range. Many researchers suggest ecological restoration that is successful and can be based on their vegetation characteristics, species diversity, or different ecosystem processes[12].

The success of species restoration depends on all ecological processes and the occurrence of vertebrate, invertebrate and prokaryotic (bacterial community, nitrogen decomposition and bacterial regulation)[13].

The Society for International Ecological Restoration with the Purpose of Promotion for Ecological Restoration as well as the tools supported for the diversity of life on earth and the reestablishment of a healthy ecological relationship, is well-suited to these principles: Tab 2.

Table 2. General principles for nature health

No	Principle
Principle I	The consistency between diversity structures and the community
Principle II	Presence of native species
Principle III	The presence of the groups that are needed for long-term stability
Principle IV	The capacity of physical environments to support reproduction of populations
Principle V	Normal operation with the landscape
Principle VI	Elimination from potential threats
Principle VII	Resilience to Natural Disorders
Principle VIII	Self-sustainability

Ecological improvement takes a lot of time, big financial investments for which each government should allocate amounts allocated to the budget for this purpose[14]. For rapid and successful improvement, there is a need for: Tab 3.

Table 3. Principles of ecological improvement

No	Needs for environmental restoration
1	Regular monitoring of the restored site and land quality
2	Protection against grazing, pests and weeds
3	Resident population of native species

### Genetic diversity and structure of population species

Size, the population of species for ecological restoration is directly related to their genetic variation, the small population carries less genetic variation than the large population. In the natural population, genetic diversity is more restored. Restoration starts with a relatively small number of individuals representing only one sub-sample of genetic diversity found in the natural population. Interaction between small population size and reduced genetic diversity can affect the success of sample population [15].

Several successful restoration projects around the world have hundreds of restoration projects that were reported to have been successfully completed.

According to the latest scientific data since 1992, when the Rios Summit was held, about 11.4 -11.8% of intact environments in the world were changed by human activity. It is assumed that in the last 60 years, human actions have changed the diversity of life on the planet beyond any other stage of human history. The data shows that in the last 100 years, the extinction of man-made species has increased by about 1,000 times. Also about 14% of birds, 25% of mammals, 28% of coniferous and 34% of groundwater are threatened with extinction, while the world's fishing reserves have been reduced to 90-92% since the beginning of the fishing industry [16].

Experts assume that if this trend continues, the loss of biodiversity will have fatal consequences for mankind. Recent scientific estimates predict that, with today's deforestation rates, within the next 35-40 years, up to 15-18% of species of species known in the planet will disappear. The consequences of this loss will also be reflected in the world economy and social developments in

general, given the fact that nearly 40-45% of the world economy and 80-85% of human needs are met by biological resources.

There are many factors that are responsible for the eradication of species, but the most important are: the increase in the world's population, the high level of deforestation of forested areas, drying of swamps, industrial development, global warming, acid rain, Herbicides and pesticides, floods, droughts, etc.

### CONCLUSIONS

The upcoming era will be the era of ecological improvement, which will be very intertwined with economic development. Along with the interest of the common people on ecological improvement, scientific studies related to ecological improvement have become very popular in recent years in R Kosovo, where special role is dedicated to enterprises that are and influence in this field. Improvement is a multidisciplinary approach where people from different disciplines ranging from ecologists, engineers, economists, politicians, and ordinary people should be involved in the future. Successful improvement can only be achieved with this multidisciplinary approach. The human society currently recognized with this cannot survive unless ecological improvement and environmental conservation are applied. We also have ethical responsibilities for the next two generations and with other organisms that we share the living space.

### RECOMMENDATIONS

Conserving biodiversity is important and necessary for many reasons, but we will mention only a few of these:

- Conserving biodiversity is our moral obligation to give successors a rich environment as we have inherited from our ancestors,
- Every living thing has the right to live, just like the man himself,
- Living beings that have lived and evolved in thousands of millions of years may disappear very quickly, but cannot be recreated again,
- Many plant species have extraordinary health values, so their disappearance means extinction for mankind,
- Natural biological processes are the best regulators of preserving clean environment and life on our planet,
- Biodiversity and biodiversity of nature presents a high potential for the development of tourism and recreation of a country,
- Economic production during the exercise of their activity is subject to regulations dealing with environmental protection, especially the chemical industry.
- The economic development of a country can be ensured through the preservation and sustainable use of natural and biological assets,
- And above all, the life of mankind on earth is dependent on the biodiversity of plant and animal exploitation,
- For the realization of these objectives, the environmental legislation on environmental protection in R should be applied. Kosovo,

- Education of future generations starting from school institutions such as primary, secondary and university,
- Facilitating training of state and private institutions for the conservation of ecological biodiversity.

#### REFERENCES

1. Wang Q, Cuellar WJ, Rajamaki ML, Hirata Y, Valkonen JP. 2008. Combined thermotherapy and cryotherapy [2]. for efficient virus eradication: relation of virus distribution, subcellular changes, cell survival and viral RNA degradation in shoot tips. *Mol Plant Pathol.* 9(2): 237–250.
2. Wang Q, Liu Y, Xie Y, You M. 2006b. Cryotherapy of potato shoot tips for efficient elimination of Potato leafroll virus (PLRV) and Potato virus Y (PVY). *Potato Res.* 49: 119– 129.
3. Wang QC, Panis B, Engelmann F, Lambardi M, Valkonen JPT. 2009. Cryotherapy of shoot tips: a technique for pathogen eradication to produce healthy planting materials and prepare healthy plant genetic resources for cryopreservation. *Ann Appl Biol.* 154: 351–363.
4. Wang, Q.C., Tang, H.R., Quan, Q. and Zhou, G.R. 1994. Phenol induced browning and establishment of shoot tip explants of Fuji apple and Junhua pear cultured in vitro. *J. Hortic. Sci.* 69, pp. 833–839.
5. Waterworth P, Kahn RP. 1978. Thermotherapy and aseptic bud culture of sugarcane to facilitate the exchange of germ plasm and passage through quarantine. *Plant Dis Rep.* 62: 72– 776.
6. Watpade S., Raigond B., Pramanick K.K., Sharma N., Handa A., Sharma U. 2013. Simultaneous detection of Apple Chlorotic Leaf Spot Virus and Apple mosaic virus in crab apples and apple rootstocks by duplex RT-PCR. *Scientia Horticulturae*, v. 164: 88-93.
7. Wild CP and Gong YY. (2010): *Mycotoxins and human disease: a largely ignored global health issue.* *Carcinogenesis.* Vol.31(1):71-82
8. Wu J, Gao H., Zhao L., Liao X., Chen F., Wang Z., Hu X. (2007). Chemical compositional characterization of some apple cultivars, *Food Chemistry*, 103, 88-93.
9. Yordanova, P., Wilfried, K., and Dimitrov, P. (2010): *Ochratoxin A and  $\beta$ 2 Microglobulin in BEN Patients and Controls.* *Journal List Toxins (Basel)*, V2 (4).
10. Zimmerli B. and Dick R. (1996): *Ochratoxin A in table wine and grape-juice: Occurrence and risk assessment.* *Food Additives and Contaminants* 13, 655-668.
11. Dreshaj , Adem. Product quality management and environmental impacts in business, Prishtina 2014, Literature : f. 325-327, ISBN 978-9951-635-32-5.
12. Jesse Ausubel, Iddo Wernick and Paul Waggoner, “Peak Farmland and the Prospects for Sparing Nature,” *Population and Development Review*, vol. 38 (supplement), Population Council and Rockefeller University (2012).
13. Robert M. Carter, *Climate: The counter consensus*, London: Stacey International (2010), pages 83-85.
14. Law on Environment protection–Assembly of Kosovo, file:///C:/Users/Vostro/Downloads/p df-test.pdf UNECE Water Convention, (<http://www.unece.org/env/water/text/text.html>).
15. Kyoto Protocol to the United Nations Framework Convention on Climate Change, Kyoto, 11 December 1977. The full text of the convention is accessible at the following online address: [http://unfccc.int/essential\\_background/kyoto\\_protocol/items/1678.php](http://unfccc.int/essential_background/kyoto_protocol/items/1678.php) (last visit 15 April 2017).
16. Legislation on environment area applicable in Kosovo is accessible at the following address: <http://mmph-rks.org/en-us/Environmental-Laws> (last visit 15 April 2017).