



**NATIONAL BACKGROUND REPORT ON
ENVIRONMENTAL RESEARCH FOR KOSOVO
(under UNSCR 1244)**

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LIST OF ABBREVIATIONS

| | |
|--------|--|
| EAR | European Agency for Reconstruction |
| EU | European Union |
| GDP | Gross Domestic Product |
| GTZ | German Technical Cooperation |
| INKOS | Institute of KEK |
| KEK | Kosovo Energy Corporation |
| KHMI | Kosovo Hydro-Meteorological Institute |
| KNIPH | Kosovo National Institute for Public Health |
| MEST | Ministry of Education, Science and Technology |
| MESP | Ministry of Environment and Spatial Planning |
| MoH | Ministry of Health |
| NCS | National Council for Science |
| NGO | Non-Governmental Organizations |
| R&D | Research and Development |
| REC | Regional Environmental Center |
| SEE | South-Eastern Europe |
| SIDA | Swedish International Development Cooperation Agency |
| SWOT | Strengths, Weaknesses, Opportunities and Threats |
| UN | United Nations |
| UNDP | United Nations Development Program |
| USAID | The United States Agency for International Development |
| UNICEF | United Nations Children's Fund |
| USAID | The United States Agency for International Development |
| WB | World Bank |
| WUS | World University Service |

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Executive Summary

Kosovo¹ has inherited a large number of environmental problems, accumulated for decades as a consequence of uncontrolled use of natural and mineral resources, high density of the population, and the presence of economic activities with a strong environmental impact, such as agriculture, electricity and mining, and urban dwelling coupled with high level of pollution. The tremendous environmental threatens and degradation are the main reason to established research resources to solve environmental problems in order to improve, protect and restore natural and man-made environment in Kosovo. In this context the main objective of this report is to provide a summary of research activities in the field of environment and identification of national research priorities in order to facilitate the interaction between the WBC INCO-NET, and EU member states in the European Research Area (ERA). This initiative is supported by the European Commission under the 7th Framework Programme for Research and Technological Development (FP7). The report provides a brief overview of the environmental research in Kosovo. It includes key facts and figures concerning policy framework, as well as short overview of main drivers of environmental research, research infrastructure and main environmental sectors in Kosovo.

The consultation process started with data collection from environmental experts, academic research actors, and stakeholders continued with data review and analysis in order to identify key elements of environmental research position in Kosovo. The SWOT analysis technique was utilized to survey environmental research capacities.

The final Strategic Research Agenda identified a set of environmental research priorities for Kosovo selected from different environmental sectors and thematic issues driven by Environmental Strategy for Kosovo and Kosovo Environmental Action Plan 2006-2010 developed by the Ministry of Environment and Spatial Planning. The environment Strategic Research Agenda is intended to contribute to the shaping of future EU-WBC research co-operation through relevant European Commission research policies and funding programs in a way that meets the interests and actual needs of regional environmental research area.

¹ Under UNSCR 1244

Introduction

The economies of the Western Balkans Countries have been largely based on agriculture, natural resources and industry. These sectors used to employ large numbers of people, but at the same time they caused resource depletion and pollution. Many traditional economic activities have collapsed since 1990, leading to improvement of environmental quality but causing widespread unemployment, poverty and migration to large cities and abroad. Following the conflicts and economic crisis of the nineties, the governments in the region are working to improve the quality of life, with increased expectations of their citizens regarding living standard. In this context, Kosovo faces tremendous economic and social problems, exemplified by the fact that unemployment soars at around 40 percent . There is also a shortage of capital for investment in the economy and the infrastructure. As a result of the conflict and the harsher living conditions, a World Bank study has found that 45% of the population lives below the poverty line, and around 15 percent live in extreme poverty² (World Bank, 2007). The dire economic and social situation can be ascribed to both the unfavorable economic situation, that the country went through during the 1980's, the conflict and the present transitional nature of the economy, moving from a planned economy to a market based economy. Due to these problems it is of paramount importance to kick-start the economy and improve the well being of the people. Nevertheless, these are not the only problems that the country faces at present. There are namely huge environmental problems, which have an impact on the well being and the health of the people, which will be discussed below.

1. Purpose of the national background report on environmental research and methodology/summary of the consultation process

This National report is compiled within the framework of WBC-INCO.net project and its main goal is to provide an overview of the current situation in the environmental sectors in Kosovo regarding main environmental indicators and research policies. The report is based mainly on quantitative data gathered from different sources. The report also includes a SWOT (Strengths, weaknesses, opportunities and threats) analysis of the environmental research capacities.

² World Bank. **Kosovo - Poverty Assessment** (October 2007),
<http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/ECAEXT/KOSOVOEXTN/>

Consultation process in Kosovo took place during April and May 2009 which included several face to face and phone interviews conducted during the data collection phase. Consultation process involved the following stakeholders:

- National research and development policy-makers: Ministry of Environment and Spatial Planning, Ministry of Health (MoH), Ministry of Education, Science and Technology (MEST), Ministry of Agriculture, Forestry and Rural Development, Ministry of Energy and Mines, Ministry of Transport and Post Telecommunication, Ministry of Trade and Industry, Ministry of Public Services.
- Research actors: Kosovo Academy for Sciences and Arts, University of Prishtina (Faculty of Natural Sciences and Mathematics, Faculty of Medicine, Faculty of Agriculture and Veterinary, Faculty of Mine and Metallurgy, Faculty of Construction and Architecture), National Institute of Public Health of Kosovo (NIPHK), Institute of Hydrology and Meteorology, INKOS Institute- KEK
- International, governmental and nongovernmental organizations involved in environmental issues and environmental research (EU, EAR, UNDP, WB, SIDA, GTZ, USAID, WUS, REC.
- Local Non-Governmental Organizations (NGOs) from different environmental sectors

The national background report on environmental research identified a set of environmental research priorities for Kosovo, which are presented further below.

The biggest problem was the lack of a centralized data collection system, and a high degree of fragmentation of the research data.

2. The Environment S&T System in Kosovo

Ten years after the war, Kosovo has not set up a fully fledged scientific research system yet. National economy remains too weak to support research and development, as it is not able to absorb the products of research and benefit from them. Research activities remain sporadic and marginal, based mainly on individual initiatives in the university sector and with almost no support from Government, which remains focused on teaching component of higher education. Public expenditures for research and innovation in Kosovo remain at level of 0.1% of the Gross Domestic Product (GDP), indicating

minimum conditions for any scientific and research work. This funding is mostly used to cover operational costs of the existing research institutions³.

Besides a lack of financial support and capacities for research in Kosovo, there is not enough interest among institutions to use opportunities available for the development of science and technology, such as 7th Framework Program of the European Commission.

2.1. Kosovo environmental policy framework

The basis of the policy framework is set up by Kosovo Assembly and Government, which adopt and implement legislative acts. The Kosovo Assembly has three operating Committees that develop the legal framework in areas of environment and research:

1. *Committee for Agriculture, Forestry, Rural Development, Environment and Spatial Planning*, responsible for planning general strategy on agricultural development, forestry and rural environments in Kosovo, following the most advanced examples in these fields
2. *Committee for Education, Science, Technology, Culture, Youth and Sports*, which reviews legislation and policies related to all levels of education, as well as to the field of science and technology; and
3. *Committee for Health, Work and Social Welfare*, responsible for monitoring the implementation of health related legislation and policies by the Government of Kosovo.

Environmental protection and environmental research activities in Kosovo are partially regulated by the following laws and policy documents:

- a. The Law on Scientific Research Activity⁴
- b. Environmental Law⁵

³ Pupovci D. Kosovo National Research and Technology Program 2010-2015 - Foresight exercise. Draft.

⁴ Assembly of Kosovo. The Law on scientific research activities . http://www.assembly-kosovo.org/common/docs/ligjet/2004_42_en.pdf

⁵ Assembly of Kosovo. Kosovo Environmental Law- http://www.assembly-kosovo.org/common/docs/ligjet/2004_4_en.pdf

- c. Strategy for Development of Higher Education in Kosovo (2005-2015)⁶.
- d. Environmental Protection Strategy and Sustainable development for Kosovo⁷
- e. Kosovo Environmental Action Plane 2006-20010

a. The Law on scientific research activities

The most important document that regulates the area of research in Kosovo is the Law on Scientific Research Activity, which defines establishment, activity, organizing, governance and termination of public legal persons in scientific-research activity field; status of National Council for Science (NCS); and other issues related to scientific-research activity in Kosovo.”

Scientific research according to this Law, includes fundamental, applied and development research. For the purpose of fulfilling the necessary conditions and providing the means, the Law prescribes that up to 0.7% of GDP shall be allocated through the Kosovo Consolidated Budget for the purpose of research though Kosovo is far from achieving this level of funding.

In July 2007 Kosovo Assembly elected the National Council for Science (NCS) of Kosovo composed of 15 members. The decision of the Assembly was implemented only in October 2008 when the first meeting of the Council took place. Since then, the Council announced the intention to develop a five-year National Research Program for Kosovo, but the negotiations with the Government to start working on this project are still ongoing.

b. Kosovo Environmental Law (No.2003/9)

Forms the basis for environmental management in Kosovo. The law addresses the prevention and reduction of pollution, monitoring and, how to define pollution levels. It provides binding provisions for environmental impact assessment and the implementation of the polluter pays principle. Monitoring of the situation of the environment is implemented in country's level by the Ministry through Kosovo Environmental Protection Agency (KEPA)

⁶ Strategy for development of higher education in Kosovo (2005-2015). Ministry of Education, Science, and Technology, Prishtina 2004. www.see-educoop.net/education_in/pdf/str-develop-high-educ-kos-enl-t02.pdf.

⁷ Ministry of Environment and Spatial Planning

Kosovo Environmental Protection Agency, established by this Law is an institution which includes hydro-meteorological Institute and Institute for protection of environment and nature under the authority of the MESP, for carrying out administrative, professional, back up, scientific and research tasks in the field of the environment protection, protected areas of the nature, biodiversity and in the field of hydrometeorology.

The Law on Environment treats scientific research activities in several articles. Article 61 states that except Kosovo Environmental Protection Agency (KEPA) “Other research, scientific and publicly authorized organizations may do the conduction of environmental state, if they meet the professional skills, equipment, space, accreditation, in conformity with certain standards and parameters”

c. Strategy for Development of Higher Education in Kosovo (2005-2015)

The Strategy for Development of Higher Education in Kosovo (2005-2015) developed by MEST addresses also the issue of research to the extent it is linked to higher education. One of the six objectives defined in this document is to improve the capacity for scientific research. Based on strategy the following measures are recommended to achieve this objective: conceptualize new policies, amend existing legislation supporting the research and scientific activity, build institutional and intellectual capacity, set standards for research and scientific work, find the needed funds and provide appropriate incentives.

So far, no policy was adopted or specific measures taken to improve research cooperation and integration into the European Research Area.

2.1.1 The overall environment policy framework

Kosovo has a new environmental legislation which adheres to European environment principles.

However, the environmental legislation continues to be fulfilled and improved to respond in a most effective manner to sustainable development of environment.

Completion with legal personnel for the environment sector is seen by the Government as one important instrument for development of environmental policies.

The list of the Laws approved by Kosovo's Assembly 2003-2007, which are closely related to environmental field

| Nr. | Name of Law | Law No. |
|-----|--|----------|
| 1. | Law on Environmental Protection | 03/L-025 |
| 2. | Kosovo's Forestry Law | 03/3 |
| 3. | Law on Spatial Planning | 03/14 |
| 4. | Law on Pesticides | 03/20 |
| 5. | Law on Waters | 04/24 |
| 6. | Law on Air protection | 04/30 |
| 7. | Law for the Irrigation of Agricultural lands | 02/L-9 |
| 8. | Law on Animal Welfare | 02/L-10 |
| 9. | Law on Energy | 04/21 |
| 10. | Law on Nature Conservation | 02/L-18 |
| 11. | Law on Agricultural Land | 02/L-26 |
| 12. | The Waste Law | 02/L-30 |
| 13. | Law on Hunting | 02/L-53 |
| 14. | Law on Hydro-Meteorological Activity | 02/L-79 |
| 15. | Law on Fishery and Aquaculture | 02/L-85 |
| 16. | Law on Plant Protection | 02/L-95 |
| 17. | Law on Public Health | 02/L-78 |
| 18. | Law on Noise Protection | 02/L-102 |
| 19. | Law on Chemicals | 02/L-116 |
| 20. | Law on Special Protective Zones | 03/L-039 |
| 21. | Law on Environmental Strategic Assessment | 03/L-015 |
| 22. | Law on Environmental Impact Assessment | 03/L-024 |
| 23. | Law on Integrated Prevention Pollution Control | 03/L-043 |
| 24. | Law on Agriculture and Rural Development | 03/L-098 |
| 25. | Law on Protection from Non-Ionized, Ionized Radiation and Nuclear Security | 03/L-104 |

Approach of Kosovo's environmental legislation with European Union

The Kosovo's national policy includes the process of European Integration. One of main challenges in this process is environment, and fulfillment of European environmental standards and approximation of national legislation with European legislation. In a period 2006-2007, European Commission has monitored the progress, made in harmonization of the Kosovo's environmental legislation, with EU and its implementation.

*The monitoring results of the progress made in harmonization of the environmental legislation with the EU*⁸

| Field | EU Directives | The level of harmonization (%) |
|-------------------------------------|--|---------------------------------------|
| Horizontal legislation | Directive for AIE (85/337/EEC) | 86 |
| | Directive for VSM (2001/42/EC) | 19 |
| | Directive about environmental information (2003/4/EC) | 32 |
| | Directive of public participation (2003/35/EC) | 30 |
| Air quality | Frame Directive for environmental air quality (96/62/EC) | 59 |
| | Directive for value limits of SO ₂ , NO ₂ , NO _x , particulate matter) and Pb in environmental air (99/30/EC) | 41 |
| | Directive for bensen and carbon monoxide (2000/69EC) | 41 |
| | Directive for ozone (2002/3/EC) | 52 |
| | Directive for arsenic ,Cadmium ,mercury, nickel and polycyclic aromatic hydrocarbons in environmental air (2004/107/EC) | 20 |
| Waste management | Directive for waste (2006/12/EC) | 91 |
| | Directive for hazardous waste (91/689/EC) | 47 |
| | Directive for packaging as waste (94/62/EC) | 55 |
| | Directive for dumping sites (99/31/EC) | 58 |
| | Directive for waste incineration (2000/76/EC) | 43 |
| Water quality | Frame directive for waters (2000/60/EC) | 25 |
| | Directive for urban contaminated waters (91/271/EEC) | 15 |
| | Directive for potable water (98/83/EC) | 35 |
| | Directive for nitrates (91/676/EEC) | 16 |
| Protection of nature | Directive for wild birds (79/409/EEC) | 64 |
| | Directive for habitats (92/43/EC) | 75 |
| Control of industrial contamination | Directive for integrated control of contamination (96/61/EC) | 18 |
| | Directive for plants of large burnings (2001/80/EC) | 36 |
| Chemicals | Directive for hazardous substances (67/548/EEC) | 53 |

The key body coordinating activities in the field of environmental protection at the national level is the Ministry of Environment and Spatial Planning (MESP). The Mission of the MESP is to protect and improve the environment and water facilities of Kosovo. In addition to promote efficient regulation and development of spatial planning through the design and implementation of

⁸ European Commission , DG ENV, Progress Monitoring Report, Year 10-2007, June 2007

relevant policies, strategies, programs and projects for the benefit of sustainable growth.

In 2004 MESP developed a ten year Kosovo Environmental Protection and Sustainable Economic Development Strategy required by the Environmental Protection Law, a document which reflects relevant environment policy framework. The strategy presents an overall picture of Kosovo's natural environment, identify problems, develop priorities for action, and propose priority programs to be implemented. Priority actions are addressed more fully in the Environmental Protection Program. According to Kosovo Environmental Action Plan (2006), and other sources some of the key facts related to the environmental situation in Kosovo are described below:

Kosovo's environment has severe problems with regard to water quality, waste management, and air and soil pollution. In general, the quality of drinking water and of groundwater is unsatisfactory, and the area covered by sewage treatment is small. Pollution that affects surface water and groundwater is mainly caused by untreated municipal and industrial wastewater and by sources of diffused pollution (particularly agricultural nitrates). Furthermore, treatment and disposal of waste is a major concern, reflecting the poor implementation of extant waste regulations. Air pollution is a significant problem in larger cities and industrial areas, caused mainly by heavy emissions from the electricity, mining and transport sectors.

Today, Kosovo's environment is affected directly by unplanned constructions, as a result of the lack of spatial planning, including city planning activities, little management of industrial land and improper use of natural resources. Air pollution in Kosovo is relatively high and has various sources, including energy production (thermo power plants), heavy industry (metallurgy factories, quarries and cement factories), transport, agriculture, urban illegal waste Energy production facilities in Kosovo primarily use fossil fuels (coal and oil derivatives with relatively high sulphur contents). The thermo-power plants and the other existent industries were established in the 1960s and have outdated systems and technology with poor gas emission cleaning, with a direct impact on the concentration of air pollutants (SO₂, NO_x, heavy metals, CO₂, dust, suspended solids, dioxins, hydrocarbons, etc) exceeding the maximum limits set by the EU.

Industrial pollution sources in Kosovo pose a serious health risk due to the environmental pollution caused by emissions of lead, cadmium, zinc, copper, and other toxic substances into the air and ash landfills. Organized and continuous monitoring has not been carried out. A study done in year 2000 on the blood lead levels of workers from the Zveçan lead smelter, as well as people living in and around Mitrovica, showed very high blood lead levels especially in workers as well as in children..

Heavy traffic - 215,500 vehicles were registered in Kosovo in 2002, not counting KFOR and UNMIK vehicles and about 25% of the vehicles in Kosovo that have not been registered, all of which release gases in processing fuel, a process that results in increased air pollution. Based on some analyses that were conducted in the year 2002, 15.0 liters of oil and 12.2 liters of petrol are used annually per capita⁹.

Water-river resources- the surface of Kosovo is divided into four riverbeds: 1). Riverbed of Drini i Bardhë-with yearly capacity of 60m³/sec that runs into the Adriatic Sea, 2). Riverbed of Ibër - with 33m³/sec that runs into the Black Sea, 3). Riverbed of Morava e Binçës - with 7m³/sec, which also runs into the Black Sea, 4). Riverbed of Lepenc - with 8m³/sec that runs into the Aegean Sea, as well as 5). The artificial lakes created by the branches of these rivers (Gazivoda with 380 million m³; Radoniqi with 113 million m³; Batllava with 40 million m³; Badovc with 26 million m³; Perlepnica with 4.2 million m³ and Livoq with 1.6 million m³) with a total capacity of around 570 million m³.

The measurements conducted by the Hydro Meteorological Institute of Kosovo, in 50 measuring points in all rivers, were used to get the following physical and chemical parameters and the situation proved to be as follows:

⁹ DE: Air Section, 2002

All rivers in Kosovo exceed EU standards as regards water color, especially in the areas around the middle and the end as a result of industrial water and sewage discharge (app. 1500 l/s are discharged in the eastern part of Kosovo alone)¹⁰. This phenomenon is highlighted even more with the extraction of sand and gravel from riverbeds in an uncontrolled manner. Based on the measurements and chemical parameters: cyanide, nitrates, zing and phenols, are present in greater quantities from time to time, when compared to EU determined standards. Based on these analyses conducted disposal sites, central and domestic heating, poor quality infrastructure, etc. in the rivers of Kosovo, only the river Sitnica turned out to have values at a dangerous level¹¹. Water pollution is increased by the sewage, which is discharged in the water, as well as garbage, use of sand and gravel and land being washed. Plants used to process urban sewage do not exist in any urban center and the few industrial plants available are not working. Another permanent risk is rainfall, which impacts the water level, increasing it and making it flood large areas of land.

Potable water- Only 40-50% of the total population living in urban areas has access to the water supply system. The rural population is covered with around 9%. There are six larger regional schemes serving about 900,000 people. These schemes use water from artificial storage lakes and underground sources. Moreover, about a dozen small systems serve about 150,000 people, with water usually coming from boreholes and artesian springs. Deficiency of chlorine used to disinfect the water and the fact that the drinking water sources are not properly protected also represents a significant problem.

Wastewater- Kosovo does not have wastewater treatment plants and 28-30% of the residents of urban areas have access to a sewage system. In the rural areas it is common that wells are contaminated by sewage, leading to a high incidence of gastrointestinal tract infectious diseases. No studies have been conducted in order to define the number and state of septic tanks in the rural areas.

Waste- Problems with waste management are linked with problems deriving from illegal landfills, which pose a great potential for generating serious health problems.

Dumpsites – Based on GTZ calculations regarding the amount of waste produced in Kosovo in the year 2000-2001, approximately 1.2 kg of waste were produced daily per inhabitant (438kg or 3.2 m³ annually). This amount, besides household waste, also includes waste from aluminum, glass, plastic,

¹⁰ DW-Department of Water

¹¹ HMIK

fabrics, etc. Whereas, according to the most recent information from the GTZ, that amount is now 0.6 kg/per capita daily. Out of the 30 municipalities in Kosovo, 26 had municipal dumping sites from the past, while now, it has been noted that there are about 140 other waste disposal areas.

Waste management has improved greatly thanks to donations from the EAR, COOPI and DANIDA, which have improved financial conditions in municipalities through their programs. Some of the municipal dumpsites have been rehabilitated, while others, which have been sources of pollution and degradation, have been closed. High level regional dumping sites are now being built and some of them have started to operate, like in Prishtina, Peja, Prizren, Gjilan, Mitrovica, Podujeva, Ferizaj, Dragash and Zveçan.

One of the most important issues in the field of environmental protection is uncontrolled forest cutting. Based on the data available, there are more than 12 thousand hectares of forest that has been destroyed. A great portion of the forests were damaged from the fires that broke out in some municipalities and destroyed more than 545 hectares, mostly in the municipality of Peja, Gjilan and Prishtina. Forest degradation also affects and damages other surfaces, as they have a protective role. Excessive rainfall for example and floods can now freely spread to other surfaces and areas, not to mention the human factor and impact. And then, the result of such cycles is floods spreading to agricultural land and dwelling areas. As regards stone grinders and sand and gravel separation processes, the information available shows that there are 120 active companies working in some of these municipalities, with the exception of some municipalities that we have no information about..¹²

2.1.2 The elements of Environment research policy making

Budgetary allocation for scientific research and technological development in 2008 from Kosovo Government was less than 0.1% of GDP. However, this amount is not purely dedicated to research, but includes salaries, goods and services, and public utilities for research institutions under the authority of MEST. There are several national strategies created by the Ministry of Environmental and Spatial Planning, but there is not any research strategy although The Kosovo Agency for Environmental Protection (KEPA) started to operate in April 2007. One of its tasks is to set up the environmental information system based on research activities.

¹² Forestry Agency- report 2003

Ministry of Environment and Spatial Planning developed “Strategy of Environment and Sustainable Development in Kosovo 2005-2015”, in accordance with the Millennium Development Goals¹³. Main national development policy goals set in health care by the Kosovo government in period 2005-2015 are:

1. Completing of the legislation for environmental protection, in harmony with existing conditions in Kosovo, gradual fulfillment of EU standards and efficient implementation of existing one.
2. Establishment of competent capable institutions completed with human capacities and equipped with equipment for implementation of environmental policies. The following institutions in the first place:
Decision making institutions
Monitoring institutions
Supervision and inspection institutions
3. Gradual increase of access to clean potable water for population, sewage system, waste treatment system and support to programs for recycling of black waters and waste;
4. Rational use of natural resources: soil, water, minerals, forest etc. Paying attention in the use of endangered kinds and orientation towards renewable resources.
5. Expand the area and protection of natural heritage areas and those with special natural value together with increase of capacities for their efficient management in accordance with Rio Declaration;
6. Establishment and functioning of environmental monitoring network in whole Kosovo with priority to major industrial pollutants “hot spots” in Kosovo.
- 7.. Provision of necessary financial and economic instruments, for environmental protection in harmony with economic development. Fast establishment of eco-fund.
8. Development of long term education programs, public awareness campaigns and support for environmentally focused scientific projects.
- 9.. Support the concept of import of clean technologies in Kosovo in starting phase of new industries and restarting of existing industry.
- 10.. Application of the concept of energy efficiency in all sectors of energy users.

¹³ United Nations. United Nations Millennium Declaration. 2000, available at: <http://www.un.org/millennium/declaration/ares552e.htm>.

2.2. Overview of environment scientific research activities in Kosovo

This overview presents research projects in the area of environment, major research topics and the infrastructure for environmental research. Environmental research activities in Kosovo are conducted mainly on personal initiatives at some faculties of the University of Prishtina, respectively in Faculty of Natural and Mathematical Sciences (Departments of Biology, Chemistry, Physics and Geography), National Institute of Public Health (NIPH), Faculty of Agriculture and Veterinary, Faculty of Mine and Metallurgy. There are no evidence about number and types of scientific research papers in the field of environment. These research activities, with very few exceptions, are not supported by any research grant from government, university or industry. So far, institutions had insufficient interest to use opportunities available for the development of research area, such is 7th Framework Program of the European Commission.

2.2.1 Environmental research projects

There is presently no research project in the environment issues funded through the MEST, nor the Academy of Science and Arts of Kosovo.

From 1999 to 2007, there were two kinds of investments for environmental issues in Kosovo, including here: Capital outlays (constructions), maintenance, trainings, development of environmental legislation, waste management, biodiversity management and other issues:

1. Investments from Kosovo Consolidated Budget /and
2. Donations (UNEP, GTZ, BGS, AER, WB, KFW and Swiss office)

From Kosovo's Consolidated Budget, respectively Ministry of Environment and Spatial Planning have been invested in total **1.031699,00 €**, whereas donor investments in the field of environment are presented below.

Donor investments in the field of environment

| Donor | 1999 – 2008 Amounts in millions in € |
|---------------|--------------------------------------|
| UNEP | 0.001 |
| BGS | 0.001 |
| AER | 95.450 |
| WB | 10.500 |
| KFW 2000-2006 | 32.850 |
| Swiss Office | 29.290 |
| Total | 168.090 |

Some of the implemented project in the field of environment funded by local and international organisations:

| Title | Authors/institutions | Year | Budget |
|---|--|-------------------------------|---------------------------------|
| Water monitoring in KEK area: recipient waters, surface-effluent waters, underground waters in the area. | INKOS – KEK | 2000 – 2009 ongoing | |
| Air monitoring in KEK area: Emission monitoring, emission measurements in Power Plants (chimneys) and in the mines (coal self-burning) – discontinuous. | INKOS – KEK | 2000 – 2009 ongoing. | |
| Investigation of soil contamination in the area of existing mines – discontinuous. | INKOS – KEK | | |
| Measurement of noise and vibration discontinuously | INKOS – KEK | | |
| Environmental Impact Assessment for the “Project of returning fresh ash from Kosova B Power Plant in Mirash Surface Mine landfills. | INKOS – KEK | 2005 | |
| Environmental Impact Assessment for South-Western Sibovc. | KEK, Kosovo Consolidated Budget, INKOS | 2007 | |
| Recultivation project for South Western Sibovc. | INKOS – KEK | 2007 | |
| Closing, recultivating project for existing mines of Feronikel, 2008 (financed by Feronikel). | FERONIKEL-INKOS | 2008 | |
| Experimental greening project for existing landfills of Power Plants, with hidrosemia method in the area of 7 ha. | INKOS – KEK | 2005/2006 | |
| Introducing Strategic Community Development Principles in Kosovo/a | Balkan Trust Fund for Democracy - REC | April 2004 - April 2005 | 47,737 € |
| Developing Strategy for Environment and Sustainable Development for Kosovo/a in partnership with Ministry of Environment and Spatial Planning | SIDA – REC | November 2003 - April 2004 | 22.389 € |
| Accessing Environmental Information as a Tool for Solving Environmental Problems | British Office Prishtina – REC | September 2003 - October 2004 | 29.805 € |
| Promoting Networking and Cooperation of Environmental NGOs: Establishment of Electronic Computer Networks on a National and Regional Level | Norwegian Ministry of Environment, Dutch Ministry of Foreign Affairs and Italian Ministry of | March 2001 - December 2003 | 700.000€ for whole Region (SEE) |

| | | | |
|--|--|--------------------------------|-----------------|
| | Environment - REC | | |
| Environmental Awareness & Education in Kosovo/a | SIDA – REC | April 2002 - December 2003 | 174.939 € |
| 'National' Grants Program Kosovo/a | DANCEE –REC | May 2002 - December 2003 | Around 25.000 € |
| Sustainable Rural development and Eco-agriculture in Kosovo - Year III | Avalon Foundation – REC | March 2003 - December 2003 | 25.451 € |
| Solving household waste problems through local initiatives and public information in Kosovo/a | European Agency for Reconstruction – REC | July 2001 - November 2003 | : 232.423 € |
| Attention to Environment - Bringing Media and the Environmental Movement Together in Raising the Environmental Awareness in Kosovo/a | British Office Prishtina – REC | September 2002 - October 2003 | 24.150 € |
| Pilot project on household waste separation | Japanese Special Fund – REC | September 2002 - July 2003 | 58.269 € |
| Feasibility study on recycling in Kosovo/a | European Agency for Reconstruction – REC | September 2002 - February 2003 | 16.365 € |
| Capacity building of the environmental civil society in Albanian and Serbian communities in Kosovo/a - Through training, small projects & coaching | ICCO Netherlands- REC | January 2002 - December 2002 | 48.931 € |
| Eco Agriculture & Sustainable Rural Development in Kosovo - Year II | Avalon Foundation- REC | January 2002 - December 2002 | 28.121 € |
| Knowledge is Power: Information for Environmental Actions in Kosovo II | British Office Prishtina – REC | July 2001 - September 2002 | 21.701 € |
| Environmental Policy Course | Ministry of Environment and Spatial Planning – REC | April 2002 - September 2002 | 10.271 € |

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|---|---|-------------------------------|------------------------------|
| Aluminium Collection and Recycling as Sustainable NGO Financing Mechanism | SIDA – REC | January 2001- March 2002 | 30.308 € |
| Eco Agriculture & Sustainable Rural Development in Kosovo/a - Year I | Avalon Foundation – REC | January 2001 - December 2001 | 11.413 € |
| Small grants for Environmental NGOs in Kosovo | Dutch Ministry of Housing, Spatial Planning and the Environment – REC | December 2000 - November 2001 | 27.054 € |
| Participation of Kosovo in the Regional Environmental Reconstruction Program (REReP) for South Eastern Europe | UNDP –REC | March 2001 - September 2001 | 9.719 € |
| Strategic Environmental Analysis for Kosovo/a 2001 | SIDA – REC | April 2001 - July 2001 | 14.791 € |
| Capacity Building of the environmental civil society in Kosovo | ICCO Netherlands – REC | October 2000 - June 2001 | 46.386 € |
| Knowledge is Power: Information for Environmental Action in Kosovo I | KFOS – REC | January 2001 - June 2001 | 2.553 € |
| Support to environmental consultancy company on landfill research in Kosovo | DHV Consultants – REC | October 2000 - November 2000 | 1.176 € |
| Strategic Environmental Analysis for Kosovo/a 2000 | SIDA – REC | April 2000 - June 2000 | 17.165 € |
| Rural Water Supply and Sanitation Programme | Development Agency (ADA), respective municipalities and villages Ministry of Environment and Spatial Planning, Ministry of Local Governance and | 12.2007 – 12.2009 | CHF 1.680.000 CHF 850.000 |

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|---|--|-------------------------|--------------------------------------|
| | Administration, ADA, respective municipal authorities of Gjilan, Ferizaj, Viti, Kacanik, Vushtri and Suhareka, respective villages. Consultant Community Development Initiatives, Kosovo | | |
| Development of Water Resources in South-Eastern Kosovo (DWRSEK) | SECO | 11.2005 – 10.2008 | CHF 10'960'00 0 |
| South-Eastern Kosovo Water Supply and Sanitation project | SDC, : Perreten & Milleret SA, Switzerland, Regional Water Companies of Gjilan and Ferizaj, Kosovo Trust Agency, Water and wastewater regulatory office | 11.2007 – 10.2009 | CHF 1.680.000 |
| Incorporation of 7 Regional Water Utilities in Kosovo | SDC, KfW | 07.2006 – 04.2008 | CHF 714.085 |
| Water Management – Operational and Financial Monitoring Project | SDC, Water and Wastewater Regulatory Office, 7 Regional Water Companies of Kosovo, Kosovo Trust Agency | 01.2008 – 12.2009 | CHF 125.000 |
| Horticulture Promotion in Kosovo | SDC, Foreign Ministry of Denmark, Ministry of Agriculture, | 01.2007 – 12.2009 | CHF 2.880.000 CHF 2.850.000 |

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|---|---|---------|---------|
| | Forestry and Rural Development, Farmers' Association, Intercooperation, Switzerland | | |
| Biodiversity of Germia- values and threatening dangers | EAR/REC | 2002 | 6000DM |
| Campaign against throwing and burning of waste | REC | 2002 | 5000DM |
| Kosovo strategy for environmental protection constant development | MMPH | 2002 | |
| Plants along the border | REC | 2003 | |
| Improvement for environmental quality in Kosovo | Italian Foreign Ministry and UNMIK | 2003-04 | 30000 € |
| To know more nature of Kosovo- emission cycles | RTK | 2003/04 | |
| South East European network on plants genetic resources | SIDA | 2004 | 80000 € |
| Project Law on national parks | Governement of Kosovo | 2005 | |

2.2.2 Key competencies in Environment research field

Within the FP7 Cooperation Work Programme 2009: Environment (including climate change) the main research topics are grouped into four areas:

1. Climate change, pollution and risks

- Pressures on environment and climate
- Environment and health
- Natural hazards

2. Sustainable Management of Resources

- Conservation and sustainable management of natural and man-made resources and biodiversity

- Management of marine environments

3. Environmental Technologies

- Environmental technologies for observation, simulation, prevention, mitigation, adaptation, remediation and restoration of the natural and man-made environment
- Protection, conservation and enhancement of cultural heritage, including human habitat improved damage assessment on cultural heritage
- Technology assessment, verification and testing

4. Earth observation and assessment tools

- Earth and ocean observation systems and monitoring methods for the environment and sustainable development
- Forecasting methods and assessment tools for sustainable development taking into account differing scales of observation

Having in mind these research topics featured within FP7 we'd consider that competencies of Kosovar researchers should be as follow:

- Environment and health
- Biological valorization of terrestrial and freshwater ecosystems
- Chemical specification in aquatic and terrestrial ecosystems
- Sustainable management of natural and man-made resources

2.2.3 Environmental research infrastructure

Research institutions in the S&T field of environment in Kosovo are:

- Faculty of Mathematical and Natural Sciences
- Faculty of Agriculture and Veterinary
- National Institute of Public Health of Kosovo
- Academy of Sciences and Arts of Kosovo
- Faculty of Mine and Metallurgy
- Faculty of Civil Engineering and Architecture
- Hydrological and Meteorological Institute
- INKOS Institute- KEK
- International organizations

The University of Prishtina was founded in 1970 and is one of the two public universities in Kosovo. It has 17 faculties with approximately 35.000 students. Starting in the academic year 2001/2002, the University of Prishtina adopted the two-tier system of studies as prescribed by the Bologna Declaration. International cooperation is one of main priorities of the University of Prishtina and is focused on intensive participation in various programs. The University of Prishtina has signed 80 cooperation agreements with other universities all over the World. Teaching and research in the University of Prishtina represent the main activity of the University, respectively its mission pursuant to article 5 of the Prishtina University statute. However, there is little evidence of organized scientific activity at the University and of any strong links between research and teaching component. Faculties that are involved in environmental research activities carried out mainly by master and doctoral studies and other individual research initiatives without any financial support Academy of Science and Arts of Kosovo was founded in 1975. Today it is the supreme institution in the field of sciences and arts in Kosovo. It consists of four sections: Language and Literature, Social sciences, Natural sciences and Arts.

Another state body that defines and acts within the health policy framework and research is the National Institute of Public Health. The NIPH represents a multidisciplinary scientific and educational facility and is in charge of developing the health strategy in the fields of epidemiology, health education and promotion, disease prevention, laboratory diagnosis and health information.

Important support in health research in Kosovo was given by the international governmental and non-governmental institutions as follow: USAID, SIDA, REC, EAR, EU, UNDP, WUS, UNEP, SO, GTZ, WB, etc. .

The NGO Sector (Non-Governmental Organizations) consist from about 30 registered environmental NGO-s with very low budget and in this point of view Kosovo is ranked among the countries with the lowest total budget for NGOs in south-east Europe (382.500 €)¹⁴

2.3 Key drivers of Environmental research

2.3.1 Main Environmental sector trends in Kosovo

The implementation of policies to achieve a feasible rate of sustainable environment must take place through the integration of environmental strategy

¹⁴ MESP, State of Environment Report 2006-2007

with sectoral strategies, monitoring, information and reporting, including integrated and sustainable land use, waters and waste management.

The key environmental sector trends are:

- Climate changes and air pollution monitoring
- Water resources management
- Land management
- Biodiversity and natural heritage
- Waste management
- Health and environment
- Radiation
- Energy
- Transport
- Agriculture
- Integrated spatial management

2.3.2 Main socio-economic challenges in Kosovo

Due to the many difficulties over the last two decades and in particular through the post conflict period, Kosovo faces many economic developmental challenges. Underlying economic growth potential in Kosovo is roughly 3.0 – 4.0 per cent per annum. Unemployment is of the order of 35 – 40 per cent. Currently some 29,000 young people are entering the labour market every year. Even if the economy could move to a permanent growth rate of say 6.0 per cent, in ten to fifteen years time, unemployment will only have halved. This simple observation defines the real economic development challenge for Kosovo.

At the same time, it is estimated by the World Bank (WB) that perhaps as much as 45 percent of the population may well live in a broadly defined state of poverty. Thus it is clear that even if economic growth is increased markedly and sustained through the longer term, there will be an underlying and continuing social challenge that must be addressed. In a very real sense, this is what can be called a ‘baseline’ policy priority.

Kosovo’s initial position contains a number of strengths. It has a young population, and significant natural resources. The social structure is characterized by the existence of networks both formal and informal that provide safety nets for the poor and the unemployed. The foundations for a liberal market economy and modern system of accountability are in place and international partners are supporting many dimensions of the developmental process.

3. Integration of Kosovo in the European environmental research

At present, Kosovo has no elaborate plans for the development of the environment R&D sector in the country neither for integration of the country in the European Research Area. The Government is still discussing terms for participation in the FP7 Program with the European Commission and setting up mechanisms needed for efficient cooperation¹⁵.

Researchers' mobility is expected to increase as the country gradually is getting further access to EU funded mobility programmes directed in higher education and research.

4. SWOT analysis of environmental research capacity in Kosovo

4.1. Strengths

- The government has set up a legal framework in science and higher education
- Environmental legislation established
- Environmental Protection and Sustainable Development Strategy developed
- Environmental Action Plane developed
- Active participation and collaboration in regional and international environmental initiatives

4.2. Weaknesses

- Inadequate allocation of budget for Research and Development
- Lack of national strategy on scientific research
- Low priority placed on environmental health research by Government
- Research is not linked to real needs of community
- Lack of project management skills
- Lack of skills for writing proposals for EU-funded research programs
- Overload of research staff with education and routine professional duties

¹⁵ Kosovo (UNSC 1244/99) progress report. Enlargement strategy and main challenges 2008-2009. European Commission, Brussels, 2008

- Lack of environmental curriculum based on integrated approach at all levels of education
- Small usage of existing environmental research equipments

4.3. Opportunities

- Implementation of Environmental Protection and Sustainable Development Strategy
- Implementation of Environmental Action Plane
- Organization of doctoral studies based on European experience
- Increased mobility of research staff
- Increased of awareness of the position of environmental issues in overall economic development
- Participation on EU research programs
- Presence of international organizations actively involved in environmental sector
- Potential to enhance collaboration and strengthen capacities with neighboring countries on environmental research issues.

4.4. Threats

- Economic threats (global financial crisis)
- Insufficient direct communication between research and industrial sector
- Brain drain
- Low level of research culture
- Insufficiency of specialized and experienced researchers in the environmental field.

5. Environmental research priorities for Kosovo

Research environmental priorities for Kosovo are driven by two documents Environmental Strategy and Sustainable Development and Kosovo Environmental Action Plane developed by the Ministry of Environment and Spatial Planning.

The main goal of this background report was to specify country environmental research priorities which will be interconnected with other WBC and the EU member States environmental research priorities. In this context we are focused on the great lines of the FP7 Work Program on the Theme of Environment.

After detail analysis and guidance the following environmental research priorities were formulated in terms of environmental research area, themes and sub themes:

I. Climate change, pollution and risks

- Energy production, industrial and transport air pollution
- Human health and environment

II. Sustainable management of natural and man-made resources

- Monitoring and sustainable management of water resources
- Sustainable management and use of biodiversity
- Natural and cultural heritage
- Soil processes and degradation

III. Environmental technologies

- Drinking and waste water treatment systems
- Clean technology

In accordance with postulate “Climate will change everything” all environmental research priorities are selected in correlation with effects of global climate changes on ecosystems structure and function. In text below will be presented detailed research priorities from each selected environmental research area:

- I. 1. Monitoring emissions from energy production, industry and transport
- I. 2. Establishing Early Warning Systems due to the harmful effects of Climate changes on humane health
- I. 3. Impact of climate changes on the effects of extreme events such as forest fires, forestry and agriculture production.
- I. 4. Air pollution and human and ecosystem health from molecular to ecosystem level
- I. 5. Indoor air and impacts on health
- II. 1. Capacity building needed for implementation of ecosystem approach in nature management.
- II. 2. Monitoring of water quality and quantity of freshwater ecosystems
- II. 3. Water pollution and waterborne diseases
- II. 4. Trans boundary ecosystems
- II. 5. Inventory of flora, fauna and fungi of Kosovo
- II. 6. Preparation of Red Book of plants, animals and fungi of Kosovo
- II. 7. Setting up of gene bank for genetic conservation of herbal resources in Kosovo under in situ conditions
- II. 8. Soil degradation (constructions, polluters, erosion) and rehabilitation

- II. 9. Waste hazards sources (radiation, heavy metals, pesticides) and effects on living systems
- II. 10. Application of GIS for preparation of map of degraded and threatened ecosystems (soil degradation, vegetation damage, erosion, drought, flood, forest fire)
- II. 11. Urban design and environmental problems
- III.1. Ground water treatment as a source of drinking water in rural area.
- III.2. Waste water treatment in industrial and municipality sector.

5.1 Environmental research priorities on the basis of the country's readiness

Based on existing infrastructure, human resources, recent performance and farther research capacity strengthening, the top fields in the Kosovo environment research sector include:

- **Priority 1**
Feedbacks between ecosystems pollution and climate changes
- **Priority 2**
Environment and health
- **Priority 3**
Biodiversity Management
- **Priority 4**
Water Resources Management
- **Priority 5**
Land use

5.2 Environmental research priorities on the basis of future potential

- **Priority 1**
Energy resources in Climate Changes
- **Priority 2**
Consequences of climate changes on biodiversity
- **Priority 3**
Molecular tools in nature conservation