Republika Kosova - Republic of Kosovo
Qeveria –Vlada - Government
Ministria e Mjedisit dhe Planifikimit Hapësinor
Ministarstvo Životne Sredine i Prostornog Planiranja
Ministry of Environment and Spatial Planning

CLIMATE CHANGE STRATEGY 2019- 2028
ACTIO PLAN ON CLIMATE CHANGEP 2019- 2021

2018

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ABREVIATIONS

AEM	Agency for Emergency Management
ARDP	Agriculture and Rural Development Plan
CA	Copenhagen Accord
CCS	Carbon Capture and Storage
COP	Conference of Parties
DoF	Department of Forestry
DRR	Disaster Risk Reduction
EBRD	European Bank for Reconstruction and Development
EE	Energy Efficiency
EIA	Environmental Impact Assessment
EnCT	Energy Community Treaty
ERO	Energy Regulatory Office
EU	European Union
EU ETS	EU Emission Trading Scheme
EU TAIEX	Technical Assistance and Information Exchange Instrument managed by the Directorate-General Enlargement of the European Commission
FAO	Food and Agriculture Organization of the United Nations
GAINS	Greenhouse Gas and Air Pollution Interactions and Synergies Model
GCF	Green Climate Fund
GDP	Gross Domestic Product
GHG	Greenhouse Gases
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit

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HPP	Hydro power plant
ICJ	International Court of Justice
IEA	International Energy Agency
IFR	Institute for Forest Research
IMWG	Inter-Ministerial Working Group on Climate Change
IIASA	International Institute of Applied Systems Analysis
IPA	Instrument for Pre-Accession
KAA	Kosovo Cadastral Agency
KAP	Kosovo Agency for Privatization
KEEAP	Kosovo Energy Efficiency Action Plan
KES	National Environmental Strategy
KEPA	Kosovo Environmental Protection Agency
KEK	Kosovo Energy Corporation
KFA	Kosovo Forest Agency
KfW	Kreditanstalt fuer Wiederaufbau
LCP	Large Combustion Plants
LECRDS	Low-Emission Climate-Resilient Development Strategy
LEDC	Low Emission Development Component
LPG	Liquid Petroleum Gas
MAFRD	Ministry of Agriculture, Forestry and Rural Development
MEST	Ministry of Education, Science and Technology
MLSW	Ministry of Labor and Social Welfare
MESP	Ministry of Environment and Spatial Planning
MEF	Ministry of Economy and Finance

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MTI	Ministry of Trade and Industry
MIA	Ministry of Internal Affairs
MED	Ministry of Economic Development
MESP	Ministry of Environment and Spatial Planning
Mt CO2 eq.	Megaton (million tons) of CO2 equivalent
MRV	Measurement, reporting and verification
NAMAs	Nationally Appropriate Mitigation Actions
NAC	National Adaptation Component
NEAP	National Environmental Action Plan
NGO	Non-Governmental Organization
NREAP	National Renewable Energy Action Plan
RES	Renewable energy sources
SME	Small and medium size enterprise
SWD	Staff Working Document
TPP	Thermal power plant
UNDP	United Nations Development Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNSCR	UN Security Council Resolution
WB	World Bank
CCS	Climate Change Strategy
NDS	National Development Strategy

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CHAPTER I

EXECUTIVE SUMMARY

Climate change has already become a threat to the environment, human health and the economy, even in Kosovo. More and more, they are causing problems to communities; damage to homes, businesses and agriculture. It is important to start taking steps to combat climate change, to protect the environment, to push economies to build a low carbon economy and high productivity, but also to make planning to adapt to climate change, ensuring communities to face with Climate Change.

The Climate Change Strategy 2018-2027 sets out the policies for reducing greenhouse gas emissions (GHG) and adaption to climate change* Poashtu, ajo paraqet një mundësi që të gjinden dhe përcaktohen masat *–për zvogëlimin e emisioneve të gazrave serrë dhe përshtatjes me ndryshimet klimatike,* fshihet *komponenta të cilat do të nxisin zhvillimin e qëndrueshëm.

This Strategy is the initial step in the management policy process of the mitigation of GHG and adaption to climate change for the next ten years. It is also an opportunity to see the mitigation and adaptation measures that will stimulate sustainable development. It is important to react and anticipate the impacts of climate change in Kosovo. Current and expected impacts include:

- Total emissions of all greenhouse gasses in 2008 in Kosovo reached 9.5 Mt CO_2 eq. In 2015, they increased by approximately 5.2%, thus reaching 10 Mt CO_2eq.. This relatively high increase was driven almost solely by increased fossil fuel combustion.
- In comparison with other countries in Europe Kosovo has relatively low emissions per capita (5.5 t CO_2 equivalent per capita per annum in 2015), while greenhouse gas emissions per unit of GDP (0,56 kg CO2 equivalent per EUR in 2015) are higher. Per capita emissions are just over half of the EU average (9.93 t) and emissions per unit of GDP are almost double of those in the EU average (0.4 kg/EUR).
- These statistics illustrate the economic and social challenges for Kosovo in the trap with low but growing emissions, and even lower GDP per capita. This situation justifies the application of the principle of common but differentiated responsibility defined in Article 3.1 of the United Nations Convention on Climate Change (UNFCCC).
- Exposure to hazards such as droughts, floods, and forest fires will become greater with climate change. Climate variability has already increased in Kosovo;
- Higher temperatures will make heat waves and forest fires more likely. Since 2000 there have been an increasing number of forest fires in Kosovo;
- Increased temperatures, more uncertain rainfall, and reduced runoff combined with socio-economic developments and increased use of water resources will heighten exposure to drought;
- Ecosystem degradation and reduction of ecosystem services;
- Increase and new forms of pollution and water-related diseases.

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Furthermore, it is important to take into account that climatic hazards have a much greater impact than should normally be the case in a country such as Kosovo.. This is the result of a variety of factors, including

- Industries that work with out-dated technologies (especially Thermo Power Plants)
- Building and uncontrolled urbanization from 1999 until now
- High socio-economic vulnerability due to a high incidence of poverty (among 45% of the population) and a fragile economy, combined with limited provision in the health, social welfare and employment sectors;
- Illegal construction in hazard zones and failure to adhere to building codes;
- Out-dated and inadequate infrastructure of drinking water supply and sewage systems to cope with current trends in development and population growth;
- Inadequate land use and municipal planning, which increase population exposure to hazards;
- Unsustainable water management and agronomic practices, deforestation, and destruction of slopes by mining activities.

The Climate Change Strategy is in line with the strategic priorities of the Government of Kosovo, in particular with the Government Program of the Republic of Kosovo 2017-2021 and the National Development Strategy (NDS) 2016-2021.

The Government Program of the Republic of Kosovo 2017-2021 addresses with priority the protection of the environment, the aim of which is to improve the state of the environment; Sustainable management and management of water resources and rehabilitation of river beds; Strengthen the management of national parks and other protected nature areas; and Strengthening spatial planning, construction, housing, land administration and cadastre development.

The National Development Strategy (NSD) is a document that defines Kosovo's development policies for the period 2016-2021. Since the NSDI addresses priorities that directly impact on the environment, it ensures that investments in infrastructure, energy, road infrastructure, agriculture and others are in line with Kosovo's commitment to environmental protection and climate change. The fourth pillar of this strategy - Infrastructure, foresees special measures for the provision of investments that will enable the sustainable use of natural resources, ensuring a balance between developmental needs and environmental care; 1. Investing in energy efficiency measures (which directly affects the reduction of GS emissions); 2. Rationalizing water use and increasing production and distribution capacities that will be a very important measure taking into account climate impacts (droughts); 3. - Ensure sustainable use of Kosovo forests. This will make Kosovo's forests not degraded and cause ecosystem consequences (Forests help to stabilize the climate. They regulate ecosystems, protect biodiversity, play an integral part of the carbon cycle, provide livelihoods, and can help promoting sustainable development). This strategy has served as a base reference for drafting the Climate Change Strategy.

On the other hand, Kosovo's Economic Reform Program (ERP) 2018 - 2020 - Priorities of structural reforms, as part of the economic governance dialogue between Kosovo and the

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European Union, focus on measures that directly affect the development of competitiveness in the country. With this program it is anticipated: Measure 2: Reduction of energy consumption through energy efficiency measures - which is planned to implement energy efficiency measures, which would directly contribute to the reduction of GS and Reform Measure 4: Investments in Infrastructure agriculture and agro-processing, through which through the implementation of the measures set out in the Climate Change Strategy will be assisted in creating preconditions for preventing the risks from possible climate change.

Kosovo, due to its status at the UN, is not a direct signatory of the conventions, protocols and other international environmental agreements. As a consequence, the Government of Kosovo is unable to cooperate as an equal partner in the multilateral level.

Although Kosovo has not participated in or signed the *UN Framework Convention on Climate Change* (UNFCCC) it has the responsibility to respond to the requirements as one of the signatories of the Energy Community Treaty. The Energy Community Treaty also sets clear reduction targets for the energy use while it demands increase the share of renewable energies.

MEA ratification is a priority within the six Environment Action Plan of EU. EU Community has ratified many international environmental agreements, either globally or regionally. Although the main goal of Kosovo is accession in the European Union, the obligations of MEA are additional tools to achieve harmonization of the legal and policy with the EU.

MESP is taking steps to involve the main provisions of MEA in national law and to prepare for a better implementation of the requirements. A number of principles and provisions of MEA are part of environmental legislation and climate change of the EU. Till now, Kosovo has transposed a considerable number of principles and provisions of MEA as part of the efforts of the approximation of national legislation with the EU acquis.

One of the highest priorities for the Western Balkans (BP6) and for foreign policy of the European Union's is "Agenda of Connectivity", part of which is and Republic of Kosovo.. Sectors that directly have obligations in this agenda are the energy sector and transport at the same time are the sectors with the largest weight in the National Strategy for Climate Change, which will reflect on the actions that will emerge from the measures specified in this strategy, (agreements and other international policies are more fully elaborated in Annex 1 of this document).

Considering the large uncertainty regarding the current level and future projections of GHG emissions in Kosovo it is difficult to set a meaningful mitigation objective in terms of quantitative emission reduction targets. For the same reason, and for the reason of uncertainty of future social and economic development of the country, it is also difficult to set LEDS objectives for long term (e. g. 2050 as in the EU Roadmap). Because of this the mitigation objectives are set in qualitative terms as follows.

This Strategy has set five strategic objectives, of which two are for low emission development (GS reduction) and three for adaptation to climate change, altogether five.

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Objectives of the component for GHG reduction (mitigation):

1. Developing Kosovo's capacity to meet its obligations under the UNFCCC Convention and the EU.
2. Increase of GHG emissions

Objectives of the component to adaption with climate change:

3. Development of mechanisms and improving current disaster risk mitigation measures, in the sectors of economic importance that are particularly vulnerable to climate change;

4. To increase capacities of adaptation of natural systems,

5. To increase capacities of central and local stakeholders, to integrate climate change issues and adaptation to development processes

The likelihood is that the GS emission reduction targets will send lower emissions to greenhouse gases than in the scenario without change. That will help in:

1. propose priority mitigation solutions, which provide economic opportunities;
2. identify the barriers to low carbon emissions economy development;
3. reinforce and build on existing projects/investments, attracting additional international support;
4. decide on a quantified emission reduction contributions/commitments in the future.

Major measures for achieving strategic objectives for low emissions development (reduction of GS emissions) that maximize benefits, minimizing the negative consequences are:

- Establish a National Inventory System and strengthen reporting on greenhouse gases
- Implementation of the National Action Plan for Energy Efficiency 2010-2018
- Implementation of the National Renewable Energy Action Plan (NPWR) 2011 - 2020
- Reconstruction and extension of district heating networks
- Improve the efficiency of existing TCs
- Concepts of sustainable mobility in Kosovo's cities and towns

Using simple extrapolation of the GHG emissions and correlating them to the predicted energy demand in the Energy Efficiency Action Plan and compare them with the impact of these measures, we get an emission reduction of 7 to 14 % compared to the Business as usual scenario in 2018. This gives a first approximation of how an emission target could look like, which will be further refined when the emission inventory and projections are fully developed.

For achieving strategic objectives, the general measures of the sectors for adapting to climate change are:

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1. Flood protection
2. Drought, low flow and water scarcity
3. Forest and biodiversity management
4. Public health
5. Information management and exchange
6. Capacity building, training and awareness raising
7. Finances, cost recovery and risk management
8. Cooperation structures

This adaption component identifies 38 optimal interventions, ones that maximize benefits while minimizing negative consequences. This includes measures which are cost effective in reducing risks and can be implemented safely without compromising (other) sustainable development trajectories, as well as adaptation options that provide benefits regardless of future climate conditions.

Climate change adaptation refers to adjustments in ecological, social, or economic systems in response to actual or expected climatic stimuli and their effects or impacts. It refers to changes in processes, practices, and structures to moderate potential damages or to benefit from opportunities associated with climate change (UNFCCC Definition: http://unfccc.int).

Adaptation measures include using scarce water resources more efficiently, adapting building codes to future climate conditions and extreme weather events, building flood defences and raising the levels of dykes, developing drought-tolerant crops, choosing tree species and forestry practices less vulnerable to storms and fires, and setting aside land corridors to help species migrate.

These policies provide a comprehensive framework for the development of the 2018-2021 Climate Change Action Plan, which is part of this document, which sets out the actions whose implementation would contribute to reducing GS emissions and preparing for adaptation with climate change.

While climate change represents a huge challenge, it also represents an opportunity for innovation in the management of water resources and sustainable development of a modern economy, especially by means of new growth (e.g. wind and solar energy, development of green infrastructure, (sustainable) production of biofuels, thermal combustion, wastewater recycling, and technologies for carbon-neutral housing, carbon-neutral transportation and industries.

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Finally, this Strategy intends to disseminate and upscale lessons learned, good adaptation practices, experiences and advocacy to influence policy and decision making processes at local, national and regional levels.

The Climate Change Strategy 2018-2027 and the Climate Change Action Plan, 2019-2021, consist of 7 chapters and 6 supplements. Following an executive summary presented in the first chapter, a second introductory chapter is included in the second chapter, including a work methodology, while in the third chapter there is a background (current state), including the part of the reduction of GS emissions and adaptation to climate change and also elaborate specific sectors that contribute to GHG emissions but also to sectors affected by climate change impacts including legislation aimed at tackling climate change, while in Chapter Four there is a vision, mission and objectives where measures are also included to achieve the objectives set out in this Strategy. Chapter Five presents the monitoring and evaluation of the implementation of the strategy, while in Chapter Six is included a summary of key activities, calculated costs and future steps, and in Chapter Seven the Climate Change Action Plan is presented. The analytical background is provided in the six Appendices to this document.

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CHAPTER II

INTRODUCTION

The Climate Change Strategy is in line with the strategic priorities of the Government of Kosovo, in particular with the Government Program of the Republic of Kosovo 2017-2021, the National Development Strategy 2016-2021 and the Kosovo's Economic Reform Program (ERP) 2018 – 2020.

In the Kosovo Environmental Protection Strategy (KEPS) and the Environmental Action Plan (EAP), climate change has been identified as a priority and also for the process of approximation of Kosovo with the EU and fulfillment of the obligations arising from the Stabilization and Association Agreement .

The development of the Climate Change Strategy has been initiated by Ministry of Environment and Spatial Planning with support from UNDP. The present Strategy is an initial step in an adaptive management feedback policy process for reduction of GHG emissions and adaption on climate change. In addition, this document presents an opportunity to found and determined measures to reduce greenhouse gas emissions and adaptation to climate change, the component that will promote sustainable development.

The purpose of the Strategy on Climate Change is to provide a comprehensive climate change mitigation policy framework based on the present level of information. On one hand, the Strategy is taking into account the ongoing efforts of Kosovo and on the other it provides guidance towards the next steps to be taken in terms of meeting EU requirements and future global responsibilities of Kosovo. Annex 1, point 1 of this document presents the international context / International Position of Kosovo.

The strategy addresses two components: Low Emission Developments (GS Emission Reduction) and Adaption with Climate Change.

This Strategy includes two components; Component on Low Emission Development and Adaption component, the abovementioned components are presented in two separate chapters.

To cope with climate change, this 2018-2027 Strategy will help implement appropriate capacity-building measures, institutional strengthening, promotion of clean development mechanisms, and preparation for natural disasters. Since these actions result in a significant number of actions, the Action Plan on Climate Change 2018-2021 will include priority actions that can actually be realized for this period.

The Strategy Kosovo envisages to effectively anticipate, and respond to, the impacts of climate change, taking into account internationally endorsed principles for sustainable development.

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Adaptation to climate change is crucial for reducing the risk and damage from current and future impacts of climate change in a cost-effective manner and to exploit potential benefits stemming from climate change. The NAS will aim to introduce new and improve current mechanisms of disaster risk reduction, especially important for sectors of economic significance that are particularly vulnerable to climate change impacts, and to enhance adaptive capacity of natural systems, in particular vulnerable ecosystems, and society, in particular vulnerable communities, such as poor farmers, marginal groups and women, to address the climatic impacts and related risks on their lives and livelihoods. Hence, the Strategy intends to build the capacity of the local partners, actors and stakeholders to integrate climate change issues and adaptation into the local and regional development processes, and empower them for addressing climate change issues.

The main challenge for reducing GS emissions is the financial constraints of public and private companies to invest in their technologies to reduce these emissions.

Since the main GHG contributors are the different sectors, which are monitored by Ministries and Municipalities, then this strategy addresses specifically the necessary measures that will be implemented by these authorities.

The Climate Change Strategy is the basic framework for the reduction of GHG and adaption with climate change, on the basis of which, following the approval of the Government, further steps will be taken in the harmonization of legislation with EU provisions, implementation of legislation, implementation of standards through defined policies, in coordination with other strategies and action plans.

This document was developed in accordance of the Administrative Instruction (GRK) No. 07/2018, on the planning and drafting of strategic documents and action plans.

METHODOLOGY

Ministry of Environment and Spatial Planning, as body of the Republic of Kosovo is responsible for drafting Climate Change Strategy, ensuring that all institutions and the wider community are aware for the importance of the contribution for climate change.

For drafting this Strategy and Action Plan, MESP established the Inter-Ministerial Working Group on Climate Change (IMWGCC). The working group was supported by the UNDP Kosovo office, providing important information from local and international experts, as well as the EU TAIEX Instrument for Technical Assistance and Exchange.

An important function of the planning process was the integration of various interests for the Adaption Component, and Low Emission Development Component, which were compiled in parallel, both under the auspices of MESP.

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The Strategy 2018-2027 and Action Plan 2018-2020 is prepared by the expert working group, organized within MESP and participants from relevant Kosovo institutions:

- Ministry of Environment and Spatial Planning (MESP)
- Ministry of Agriculture, Forestry and Rural Development (MAFRD)
- Ministry of Economic Development (MED)
- Ministry of European Integration (MIE)
- Ministry of Infrastructure (MI)
- Ministry of Trade and Industry (MTI)
- Ministry of Internal Affairs (MoIA)
- Ministry of Local Government
- Ministry of Health
- University of Prishtina,
- Kosovo Energy Corporation
- Trepca,
  Feronikeli,
- Sharrcemi

To monitor the development of this process, MESP has established the Steering Council from the hierarchy structures, which has been periodically reported to the working streams of the working group.

As the Strategy includes two components; Lower GHG emissions and Adaptation to Climate Change are established two sectorial subgroups:
G.P. for low emission of GPs
G.P. to adapt to climate change

⇨ Stakeholders involved in strategy development

Stakeholders which have been consulted during the process of strategy development, either by their participation in the roundtable meetings, by means of bilateral interviews or by means of the questionnaire survey at the local level (largely presented in Annex 1 of this document), are:

- UNDP Kosovo and UNDP RBEC,
- European Commission Liaison Office in Kosovo
- Secretariat of the Inter-Ministerial Water Council, the Prime Minister Office
- FAO team in Kosovo
- Regional Environmental Center (REC), Kosovo
- Kosovo Emergency Management Agency (KEMA)
- World Health Organization (WHO), Kosovo
- Technical Assistance Instrument Exchange (TAIEX)

In Appendix 2 of this document are included and Consultations, Role and Responsibilities, Institutional and Legal Framework.

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CHAPTER III

BACKGROUND

There are multiple lines of evidence that climate change is happening now, and the impacts are being seen now (Intergovernmental Panel on Climate Change (IPCC), 2007, 2013; World Water Development Report, 2009; Human Impact Report, 2009; International Association of Research Universities (IARU), 2009; WHO, WMO, 2012). Even worse, recent observations show that greenhouse gas emissions and many aspects of the climate are changing near the upper (!) boundary of the IPCC range of projections (IARU, 2009). Climate change is happening more rapidly than anyone thought possible (Human Impact Report, 2009; IARU, 2009). Many key climate indicators are already moving beyond the patterns of natural variability within which contemporary society and economy have developed and thrived. These indicators include global mean surface temperature, sea-level rise, global ocean temperature and extreme climatic events (IARU, 2009).

Climate change can directly affect the hydrological cycle and, through it, the quantity and quality of water resources. An increase in the surface temperature of water, and changes in the hydrological cycle could result in changing rainfall patterns over the region. Some areas may experience intense rainfall resulting in heavy floods, while other areas may witness less rainfall, and also frequent droughts (IPCC, 2013; IARU, 2009; World Water Development Report, 2009). Climatic changes can lower minimum flows in rivers, affecting water availability and quality for its flora and fauna and for drinking water intake, energy production (hydropower), thermal plant cooling and transportation via rivers, channels and lakes. As a direct result, many sectors are extremely vulnerable to the impacts of climatic changes, in particular agriculture, fishery, industry, navigation, tourism, human health, public safety, biodiversity and environmental services from ecosystems.

Besides environmental and economic damage, the ultimate impact of climate change is a toll on our most precious resource - human lives and health. Health impacts are among the most significant damages from climate change – and health can be a driving force for public engagement in climate solutions.

Hence, it is widely acknowledged by responsible authorities that Kosovo needs to be planning to adapt to the challenges and opportunities that a changing climate will bring. Institutions responsible for water, agriculture, forestry, navigation, industry, public health, land use planning, and environment related issues are under pressure to respond to the unprecedented impacts of climate change such as larger floods, more severe droughts, ecosystem degradation and reduction of ecosystem services, water supply shortages, increase and new forms of pollution and water related diseases.

In Annex 3 in details are given explanation for the socio-economic situation and the climate change mitigation policies.

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LOW EMISSION DEVELOPMENT (MITIGATION OF THE GHG EMISSIONS)

The transition to low-emission development in both developed and developing economies has been recognized internationally as an imperative to stabilizing greenhouse gas (GHG) concentrations in line with a 2 ^{0}C temperature increase scenario. Reaching emission reduction requires transition to low emission development pathways around the globe. This means decoupling carbon emissions from economic growth through a series of measures across all economic sectors, such as energy efficiency improvements, usage of renewable energy sources, managing land use change and others.

Low Emission Development is a strategic document that helps countries to change the development path towards an economy with lower emission of carbon and the realization of sustainable development, based on their priorities and socio-economic development. Low Emission Development contains a long-term component, which has a strategic vision, and short and medium components, which represent the specific actions to be taken to move to "development with low carbon emissions."

Development with Low Emission based on specific circumstances in each country, including institutional and professional capacity of its previous experiences in "combat" climate change and the overall policy context.

Even though is not a party of the convention, Kosovo supports and contributes to global efforts to stabilize the concentrations in accordance with the scenario of temperature increase of 2 degrees and it should to cross in the path of low-emission development. Kosovo is already committed to reducing emissions under the Energy Community Treaty. The first step is to develop a strategy for Low Emission Development and NAMAs to be presented after signing the Convention, or while on other donors to support the development and implementation.

The Greenhouse Gas Inventories for 2008-209 are one of the first initiatives in Kosovo contributing to the global efforts to minimize the human impact on the climate change. This project continues with further capacity building activities on GHG monitoring and reporting. Kosovo has not yet started to submit National Communications to the Secretariat in the UNFCCC.

TOTAL GHG EMISSIONS IN KOSOVO

GHG INVENTORY

The responsible authority for environment and climate policy is the Ministry of Environment and Spatial Planning (MESP). In 2012, funded by Czech government, with the support of UNDP, Kosovo prepared its first national inventory of GHGs for the period 2008 – 2009 and second inventory of GHGs prepared for period 2008-2013. The Ministry of Economic Development has responsibility for energy policy and is leading the efforts to achieve the EU

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20-20-20 targets in the framework of the Energy Community Treaty, including the Renewable Energy Action Plan and Energy Efficiency Action Plan and the Kosovo Energy Efficiency Agency planning several projects to reduce Greenhouse Gases (GHG) in buildings and other sectors.

According to the results the total emissions of GHG in 2008 reached 9.5Mt CO_2 eq. They increased by 11% to 105Mt CO_2 eq. in 2009. In 2015 GHG emissions are increased by 5.2%, reaching total emissions of around 10Mt CO_2 eq (correspondingly 10065 Gg CO_2 eq). This relatively high increase was driven almost solely by increased fossil fuel combustion. Carbon dioxide constitutes about 80 % of all emissions, while methane and nitrous oxide are both about 10%. The so called F-gasses, such as HFCs and PFCs, are almost negligible.

Compared with other European countries, Kosovo continues to have low emissions per capita of 5.5 tons of CO_2 eq., whereas the GDP unit emissions for 2015 were 0.56kg/ euro.

In the context of monitoring of greenhouse gas emissions, Kosovo till now has prepared an inventory of greenhouse gases for the period 2008-2013. The average greenhouse gas emissions in Kosovo are about 9.5 million tons of CO_2 equivalent. The main source of greenhouse gas emissions is the energy sector with a share of 88% of total emissions. The second sector is agriculture with 7%. The waste sector represents 3% of total emissions and industrial processes and the use of products sector with around 2.5%. Forestry sector and land use is the only sector of greenhouse gas accumulation.

GHG Emmissions in Kosovo for 2013	Gg CO_2 eq.
Total emissions	9568.4
Energy	8428.4
Industrial processes	198
Product use	36
Agriculture	690
Forestry and land use	-34
Waste	250

Tab. 1 GHG Emissions in Kosovo for 2013

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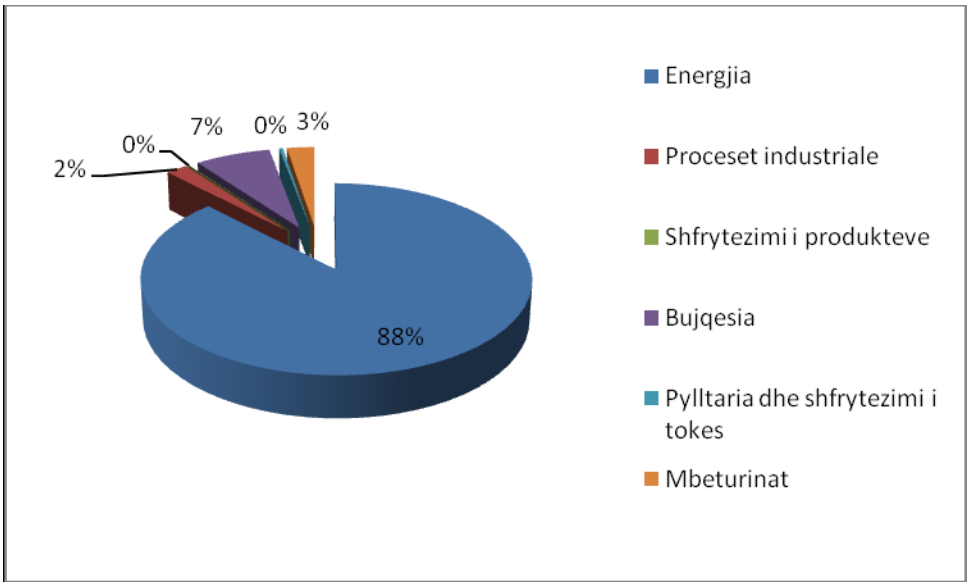

Figure 1. Emission of GHG in% by sectors

The trend of total GHG emissions in Kosovo in 2013, marking a significant increase compared with 2012 (9568.4 Gg CO_2 eq in 2013 compared to 9526.7 Gg CO_2 eq in 2012). The year with the biggest emissions from current inventory is estimated to be 2009 to 10507.2 Gg CO_2 eq. The main source of greenhouse gas emissions in Kosovo derived from electricity generated from coal.

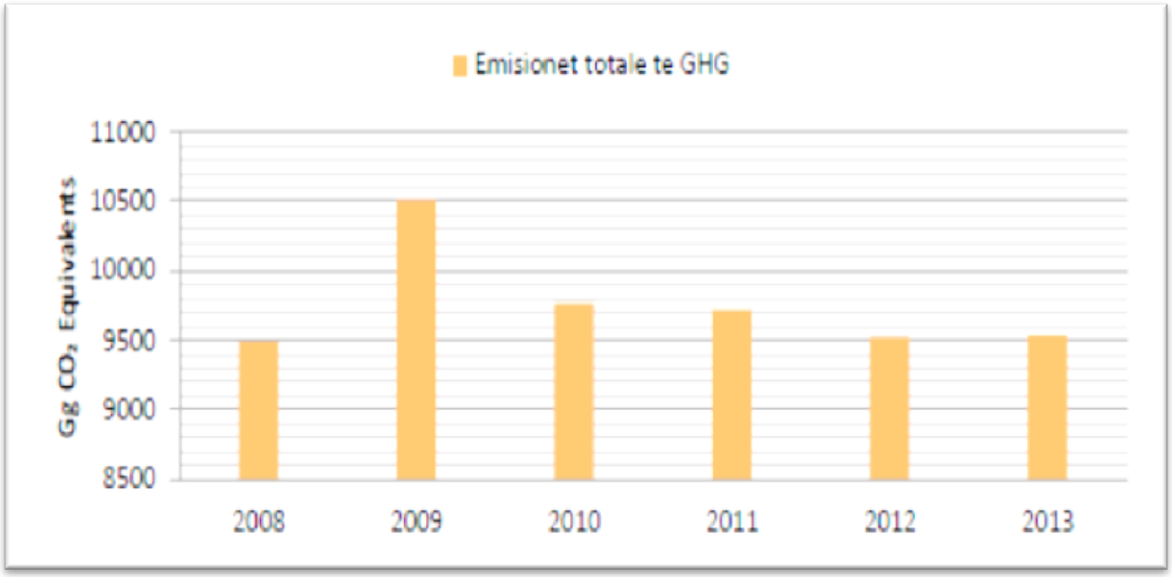

Fig. 2. Total GHG Emissions in Kosovo for 2008-2013

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

In comparison with other countries in the Europe, Kosovo has relatively low emissions per capita 5.5 t CO_2 equivalent per capita in 2015, while greenhouse gas emissions per unit of GDP (0.56 kg CO_2 equivalent per EUR in 2015) are high. Per capita emissions are just over half of the EU average (9.93 t) and emissions per unit of GDP are almost double of those in the EU (0.4 kg/EUR). These statistics illustrate the economic and social challenges for Kosovo in the trap with low but growing emissions, and even lower GDP per capita.This situation justifies the application of the principle of common but differentiated responsibility defined in Article 3.1 of the UNFCCC. In Fig. 3 are shown CO_2 emissions (ton equivalent) per capita in Kosovo, compared to some countries in the region, Europe and the world.

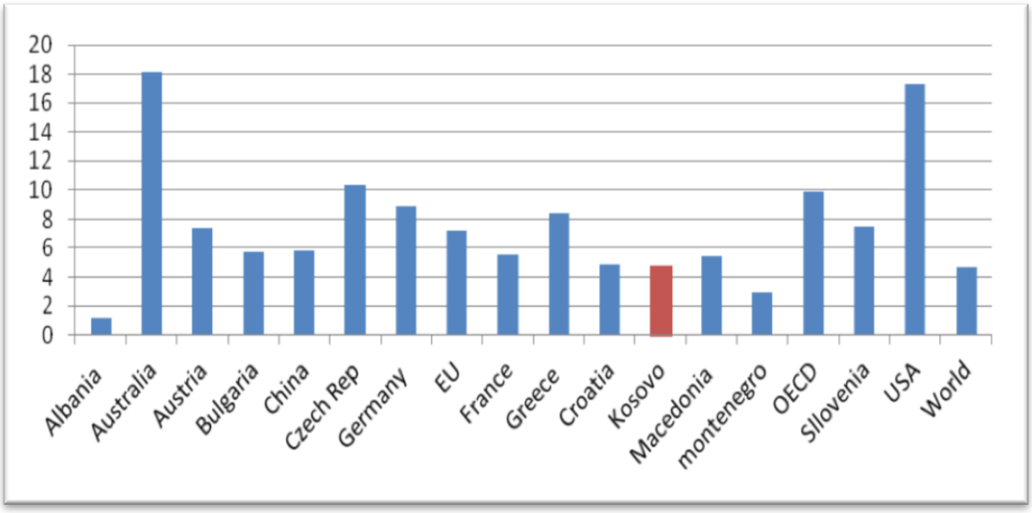

Figure 3. CO_2 emissions (ton equivalent) per capita in Kosovo compared with some countries in the region, Europe and the world

ENERGY

Energy sector includes around 88% of total emissions of greenhouse gases in Kosovo or 8428.21 Gg CO_2 eq. GHG emissions for this sector are calculated according to the methodology IPCC 2006 by applying relevant emission factors according to TIER 1.

This sector belongs to the first category under the IPCC 2006 and consist three other sub-sectors (categories). The first sub-sector 1.A includes emissions from fuel combustion activities, sub-sector 1.B. Emissions resulting from the exploration, exploitation and distribution the fuels and sub-sector 1.C. Storage and transport of carbon dioxide.

The main sources of CO_2 emissions in the energy sector come from the first sub-sector 1.A. Activities from fuel combustion. This includes mainly emissions from the electricity

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production, heating, transport and manufacturing industries. From this sub-sector come 8392.4 CO2eq or 99.95% of the total CO_2 eq, in the energy sector since the other two sub-sectors 1.B. arising from the exploration, exploitation and distribution of the fuels is not a significant source of greenhouse gas emissions in Kosovo 35.85 CO2 eq or 0.5%, because only abandoned mines (small) and open surface mining (lignite coal) are located in Kosovo, and 1.C. Storage and transportation of carbon dioxide is also not relevant to Kosovo.

Category according to IPCC 2006
1- Energy
1.A - Activities from fuel combustion
1.A.1 – Energy sector
1.A.2 – Manufacturing and construction isector
1.A.3 – Transport
1.A.4 – Other sectors
1.A.5 – Unspecified
1.B – Fugitive emissions from fuels
1.B.1 – Solid fuels
1.B.2 - Oil and natural gas
1.B.3 – Other emissions from energy production
1.C – Storage and transportation of CO_2
1.C.1 – CO_2Transport
3.C.5 – CO_2 storage
3.C.6 – Other

Transport sector GHG emissions are growing due to the increasing number of cars and also increasing fuel consumption. As the incomes of people increase and the road system becomes more developed this category will certainly grow in importance.

Fugitive emissions that are included in the category 1B come from exploitation and distribution of fuels. In case of Kosovo it is minor importance as the lignite that is mined in Kosovo is relatively young and does not contain much methane. In Fig. 4 are presented the GHG emissions, in the energy sector

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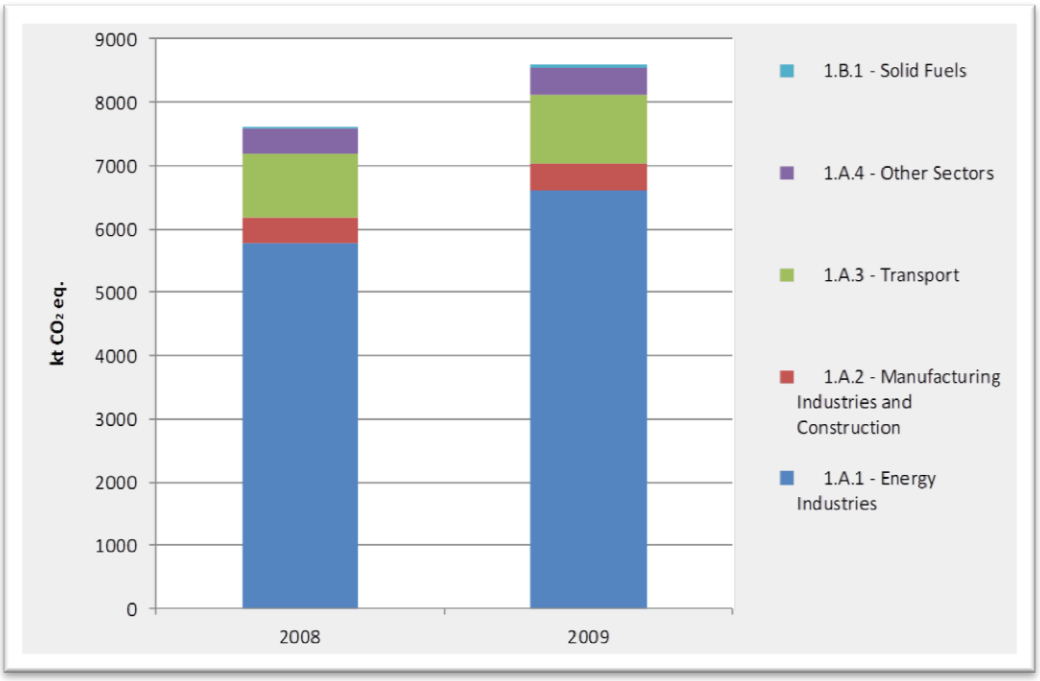

Figure 4: GHG emissions in energy sector

In 2013, about 6431 Gg CO_2 eq. are registered from energy sector that represents about 76% of emissions from this sector, 965.95 Gg CO_2 eq., from transport, or 11.5% of total CO_2 emissions in the energy sector.

Emission sorces	CO_2 Gg. eq.	%
1.A.1 – Energy sector	6431.05	76.3
1.A.2 – Manufacturing and construction sector	549.33	6.5
1.A.3 – Road transport	965.94	11.5
1.A.4 – Other sectors from fuel combustion	446.02	5.3
1.B.1 – Solid fuels	35.85	0.4

Tab.2. The main sources of greenhouse gas emissions in the energy sector

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

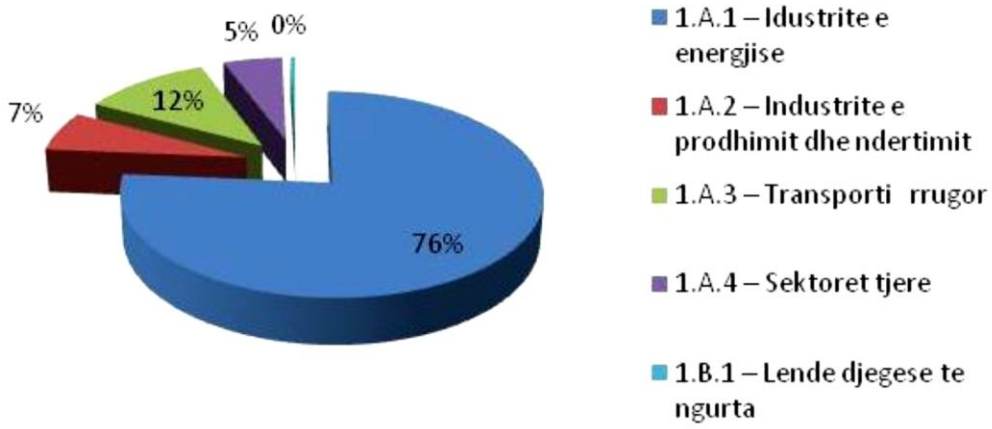

Fig 5: Participation in % of the emissions by the energy sector categories

According to data from 2008 to 2013, there is increases of CO_2 increase -reduce emissions during the years. Even in 2013 we have an increase of CO_2 in comparison with the previous year.

Years	CO_2 (Mt)
2008	7,58
2009	8,41
2010	8,71
2011	8,62
2012	8,13
2013	8,31
2015	5.5
AVERAGE	7.85

Table 3: CO_2 emissions, 2008-2015

The main source of data for this sector is energy balances from Ministry of Economic Development and the Kosovo Statistical Agency.

The main possibilities for reducing emissions from this sector would increase the use of renewable sources of energy: solar energy, wind energy, water energy and the reduction of the use of coal for energy, and in the transport sector replacing old vehicles with new, use of public transport and promoting sustainable transport with less motor traffic, cycling, etc.

Energy sector together with mining and agricultural sector have been traditionally basic pillars of Kosovo economy. Kosovo has significant potentials for electricity production. The lignite

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

reserves of Kosovo with around 12.5 billion tons, of which 10.9 billion are exploitable, are considered as the largest lignite reserves in Europe. Nevertheless, Kosovo is facing with serious problems in meeting electricity demand for entire last decade even though since 1999 some improvements have been some improvement.

Electricity production capacities are mainly thermal and composed of two power plants, TPP Kosovo A and TPP Kosovo B. The rest of the produced energy comes from HPP-Ujmani and other HPP distributions, with around 3%.

On the following table are presents the installed generation capacity by type and year of entry into operation.

Over recent years there are no major changes in the installed generation capacity. Change is the growth capacity of HPP Dikance. It is expected to soon put into operation several small HPP as private investment under the RES.

Manufacturing units	Units capacity (MW)			Putting into operation
	Instaled	Neto	Min/max	
TPP				
A1	65	Non operate		1962
A2	125	Non operate		1964
A3	200	182	100-130	1970
A4	200	182	100-130	1971
A5	210	187	100-135	1975
TPPKosova A	800	551		
B1	339	310	180-260	1983
B2	339	310	180-260	1984
TPP Kosova B	678	620		
HPP				
HPP Ujmani	35.00	32.00		1983

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

HPP Lumbardhi	8.08	8.00		(1957) 2006
HPP Dikanci	3.34	3.18		(1957) 2013
HPP Radavci	0.90	0.84		(1934) 2010
HPP Burimi	0.86	0.80		(1948) 2011
Total HPP	48.18	44.82		
Wind Power	1.35	1.35		2010
Total	**1,527.53**	**1,217.17**		

Table 4. The installed capacity of electricity production

The installed capacities from power plants are 1478 MW, but because of their age, their currently operating capacity is around 900 MW.

Rising demand for electricity recovered from the production of two lignite-based power plants (Kosovo A and Kosovo B), several hydropower plants, from import and in case of failure of supply have been made reductions. Over the years there have been significant improvements in meeting energy demand through domestic production sufferers should. Electricity imports have fluctuated from 10-14% of the amount of energy needed to cover the demand for electricity.

In 2015, gross electrical energy produced by existing power plants was 5,383.975[1] GWh, while electricity produced in hydropower plants amounted of 95.579[2]GWh. Demand for electricity is at least 10% higher than the electricity produced in recent years relative average annual growth the electricity consumption in Kosovo was about 6-7%.

Intermittent supply of electricity is considered the main obstacle to economic growth in the past decade.

In Annex 4, it is presented the scenario for energy demand is presented by 2022, the emissions calculated from TPP Kosovo A and Kosovo B.

BUILDINGS

[1] *Burimi: draft balanca e realizuar e energjisë elektrike më 2012.*

[2] *Burimi: draft balanca e realizuar e energjisë elektrike më 2012.*

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

According to the WB National Buildings Energy efficiency study of 2013, the buildings sector account for 48% of energy consumption and represents the largest share of Kosovo's final energy consumption. Biomass (45%) and electricity (44%) were the main energy sources used by the household sector, while for the services sector electricity was the main energy source (52%), followed by petroleum products (38%).

The total floor area of the building stock of Kosovo is estimated to be 45 million m^2. About a third of the entire building stock is accounted for by one store residential buildings and the residential building sector itself has a total floor area of just below 35 million m^2, followed by the private building category with almost 8 million m^2 , while public buildings have a total floor area of just over 2 million m^2.

The overall savings potential of the building sector in Kosovo is almost 11% of primary energy supply and 20.07% of final energy consumption for 2010. Total energy savings for the whole building stock are almost 45% of the total combined energy consumption of the household and service sectors.

The market assessment carried out for this study identifies a significant level of potential energy savings that could be achieved in Kosovo by implementing energy efficiency measures in the country's building stock. Realizing the full energy saving potential based on cost effective measures would require a total cumulative investment of €1.367 billion and this would generate annual cost savings to investors and end-users of about €198 million.

The largest contribution to the energy saving potential comes from the residential sector (72%), followed by the private and commercial sector (20%). Although the total energy saving potential of municipal and central public buildings is low in comparison with the other two sectors (8%), public buildings at present provide the best opportunities for achieving real energy savings because in many cases they already meet the required comfort levels. This fact suggests that any energy efficiency program should begin with the implementation of measures in public buildings.

MINERALS AND INDUSTRY

Until the end of 1980's, industry and mining were participating in gross domestic production with about 50%, and was mainly based on rich natural resources (coal, ores etc.). Kosovo is rich in zinc, lead, gold, cadmium and bismuth, bauxite, nickel, etc. There are different mines, while the lead and zinc reserves of Kosovo are estimated to be around 48 million tones, those of nickel to 16 million tones. Chrome reserves amount to 89 million tones and bauxite reserves to 13.2 million tones.

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

After the end of war in 1999, the major part of industrial and mining activities has been stopped due to the delays in process of privatization of socially owned enterprises.

In 2011, mining and quarrying represented 1,5 per cent of GDP, manufacturing 8,7 per cent and construction 7 per cent. At the same time other services represented 25 per cent, agriculture 13 and public administration (Including health and education) 16%. This means that the level of industrial activity in Kosovo is low and will probably increase in the future, also increasing the GHG emissions related to mining and industry.

TRANSPORT

Transport in Kosovo is mainly based on road transport. The road network has 7,200 km of asphalt and non-asphalt roads in with 288.828 vehicles.

After 1999, an enormous increase of vehicles occurred. Participation of public transport in general transportation is low. The largest numbers of vehicles in Kosovo are old, made in late 80's and 90's, which do not meet minimum technical requirements. Around 99% of vehicles uses diesel and gasoline as energy sources, while railway transport uses only diesel. This resource presents the air, water and soil pollution.

Railway is not in full function after the war. Kosovo Railway network consists of 334,451 km for public transport and 103,4 km for industrial use. Railway transport uses diesel as source of energy. In Kosovo railways circulate 8 Diesel locomotives, which carry 27 wagons, 9 for passengers and 18 for luggage. The priorities identified in the transport sector are:

- Completion of legislation framework for environment protection resulting from transport and its harmonization with international and EU norms;
- Use of better quality fuel;
- Use of alternative transport that will cause less environmental pollution (railways, transport means that runs on electricity, etc.);
- Time limit for use of old vehicles and those without catalyst;
- Rehabilitation of existing road infrastructure to avoiding traffic jams;
- Solving of the problem of abandoned old vehicles.

WASTE MANAGEMENT

Based on the recent data the amount of domestic waste is about 1.92 kg/capita/day, and the total amount of generated waste (of municipal origin) The quantity of waste is increasing from year to year due to better collection and increasing consumer lifestyle.

Separate collection and recycling system for waste management started to be applied. Hazardous waste is mainly connected with large industrial complexes and main "hot spots" are: Trepca, KEK, Ferronikeli, Sharrcem, ect.

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

AGRICULTURE

Considering the importance of this sector, which contributes 11.9% to GDP and that can bring economic development, providing employment opportunities, especially in rural areas, agriculture is entered within the priorities of the Government of Kosovo[3].

Because of big pressure and demand for agricultural products i.e. food, agriculture even though small and still not sufficiently developed, remains to be a sector with a potentially high impact on climate change.

Agriculture accounted for 25% of GDP in the 1980s and early 1990s, at present it reduced its share to about 11.9% of GDP. Agriculture accounts for around 26.7% of total employment. Agricultural sector also accounts for 16% of total export value and remains an important economic sector. In the other side, Kosovo still depends a lot on imported agricultural products, which accounted for 24.4% of overall imports.

Total area of agricultural land is assessed to be about 43,7% or (470,400 ha)4. Based on the latest information of the Agricultural Household Survey 2014 around 80.8% (413,635 ha) of this land is arable land and around 14% or (65,856 ha) is accounted as pasture.

Agricultural Sector, Forestry and Land Use is accounted for about 13% of total emissions of GHGs in Kosovo. This sector consists of three distinctive sub-sectors. The livestock, as first subsector, generates annually around 600 thousand tons of CO2 eq. Land use subsector is dominated by forestry, which could be a powerful sink of atmospheric carbon. But in terms of carbon that annually flows through this sub-sector is the second largest sector in the country with about 2.750 thousands of tons of CO2. Good forest inventory and sustainable management of forests could contribute greatly to decreasing emissions. And the third sub-sector emissions of this category relate to manure management and fertilization of crops, which in total emits about 800 thousand tons of CO_2 eq.

[3] Raport I Gjelber 2015, MBPZHR

[4] Inventarizimi nacional i pyjeve Kosove, 2012.

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

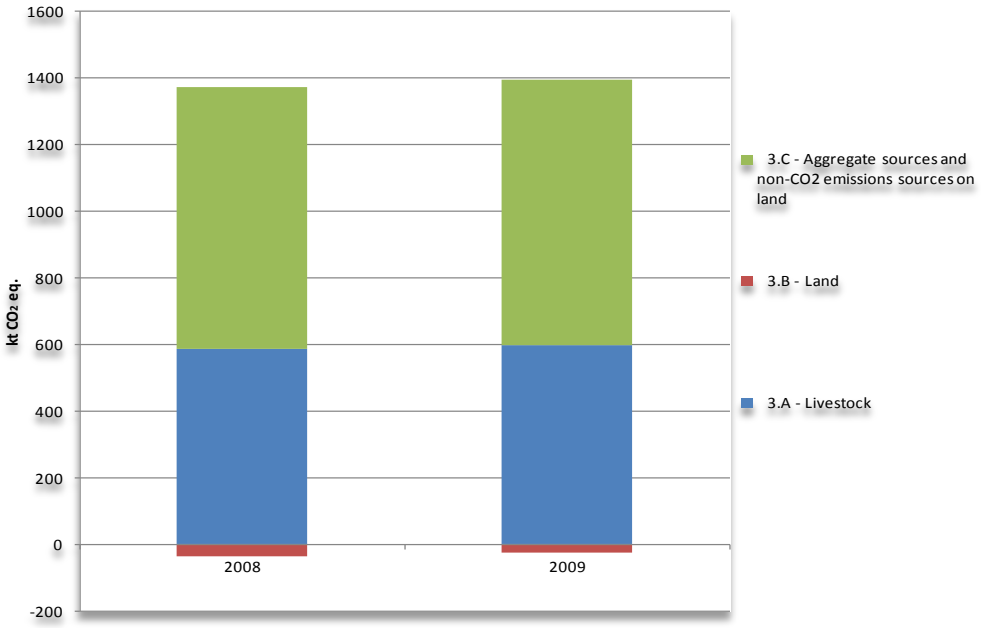

Figure 6: GHG emissions in agriculture, forestry and land use sector

FORESTS AND NATURE CONSERVATION

From forested area of 481,000 ha, 295.200 ha or 60% are state-owned forests. The remaining 40% (180.800 ha) are private forests, and 5.000 ha of the unknown area.

The forest coverage in Kosovo is bigger than in neighboring countries (Albania 28%, Macedonia 39%, Montenegro 40%, and Serbia 31%); however, the quality and productivity of the existing forests is of high concern as a result of continuous degradation. In particular, in steep, mountainous terrain there are alarming signals of desertification due to serious soil erosion. There are basically only 2 types of forests widespread in Kosovo:

- Timber forests cover more than 90% of forest area. the dominant species are deciduous oaks and beech.
- Pine forests cover 7% of the total forest area, are dominated by Abies alba, Picea abies and Pinus sp, and 3% other forest land.

The area covered by forests and forest land in Kosovo is estimated at 47.4% (481,000 ha)[5].

During the years 2003- 2004, a country-wide forest inventory was conducted; it is estimated that total standing volume on public forestlands is about 40.5 million m^3.

[5] Inventarizimi nacional i pyjeve Kosove, 2012.
http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

Strategic objective	Aim
Forest management and silviculture	Seeding production, planting, thinning operations, road construction and maintenance
Forest planning	Forest inventories (strategic), management planning, annual planning
Harvesting & transport	Annual harvesting targets (public/private), sales of wood, control mechanisms
Capacity building	Education/training, research functions, awareness rising
Forest environment protection	Management restrictions, protected zones, biodiversity conservation, certification
Wood use	Optimal use of existing and future wood resources
Private sector development	Privatization issues, roles in admin/mgt of public forests, financing facilities
Non-wood products	Berries, herbs mushrooms fruits, medical plants, etc

Table 5: Strategic objectives in forestry sector

In 2012, the Climate protection strategy in the forest sector in Kosovo[6] was prepared under an EU twinning project between MAFRD/KFA and Austrian Federal Forests. In the Strategy deforestation and forest degradation agents have been identified. It confirms that the illegal logging of forests for commercial purposes to be among the most important drivers. It has also been cited that poor villagers living nearby forests cut wood for subsistence purposes.

The outbreak of forest fires takes place due to the careless burning of nearby harvested agricultural plots or grassland by farmers and pastoralists. The lack of awareness of the entire society also contributes to the outbreak of forest fires nearby camp grounds and picnic places.

Inadequate forest planning and implementation of management due to insufficient cooperation between Kosovo Forest Agency (KFA) and municipal authorities undermines needed investment in the forest sector. Two baselines for carbon emissions and two mitigation scenarios were considered and presented in the figures 7 and 8 below.

[6] Krause, M.; Ruiz, P.; Horst, A.: Climate protection strategy in the forest sector in Kosovo. Final report. EU Twinning Project KS09IBEN02 „Further support to sustainable forestry management". MAFRD/KFA and ÖBf-led international consortium. Prishtina, Kosovo. http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

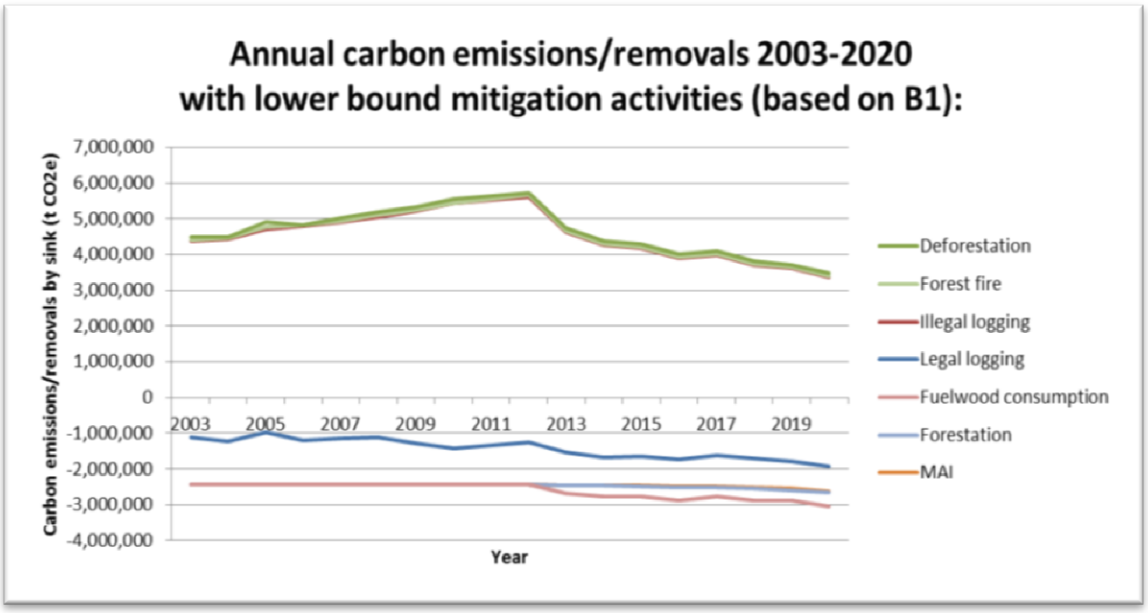

Figure 7: Estimated potential of a portfolio of mitigation activities across time (B1, lower bound)
Source: Climate protection strategy in the forest sector in Kosovo

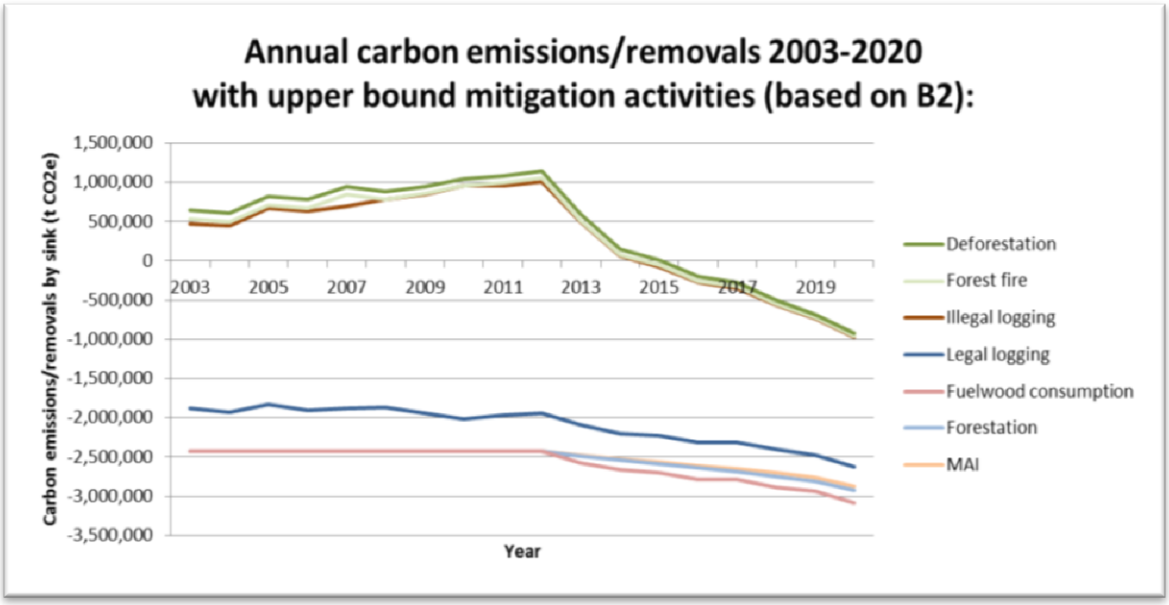

Figure 8. Estimated potential of a portfolio of mitigation activities across time (B2, upper bound)
Source: Climate protection strategy in the forest sector in Kosovo

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In both scenarios, the highest potential for emission reduction is in prevention of illegal logging as shown in fig.9 below.

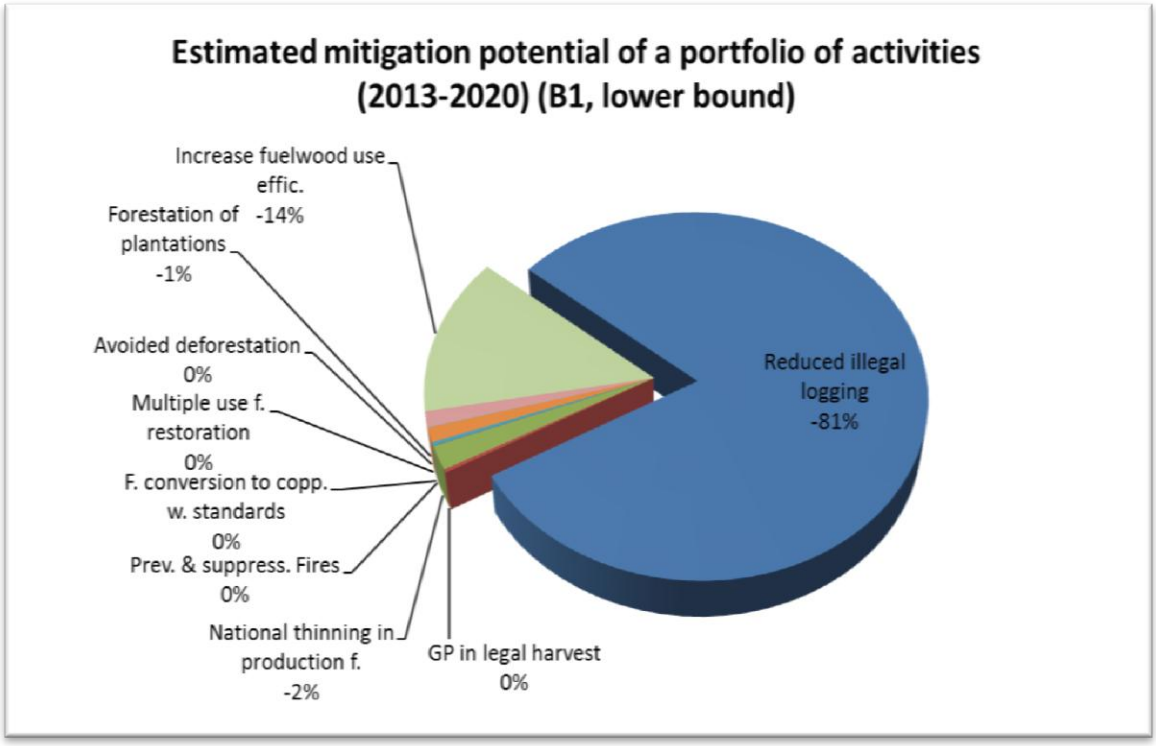

Figure 9. Estimated potential of a portfolio of mitigation activities (B1, lower bound)

ALTERNATIVES CONSIDERED: POSSIBLE DEVELOPMENT SCENARIOS

GLOBAL PREDICTION MODELS

The GAINS model, used by the European Commission in climate policy planning, and the *US based International Futures* considers Kosovo as part of a group of countries together with Serbia and Montenegro due to lack of separate historic statistical data. So, only very general observations regarding scenarios for Kosovo are possible until separate data sets are developed and entered in these models for the country.

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

The GAINS model[7] is a set of models managed by the IIASA in Luxemburg, Austria on behalf of the EU. It includes various scenarios and data resulting from different EU research project. Below the projections from some of these scenarios are presented for the group of countries.

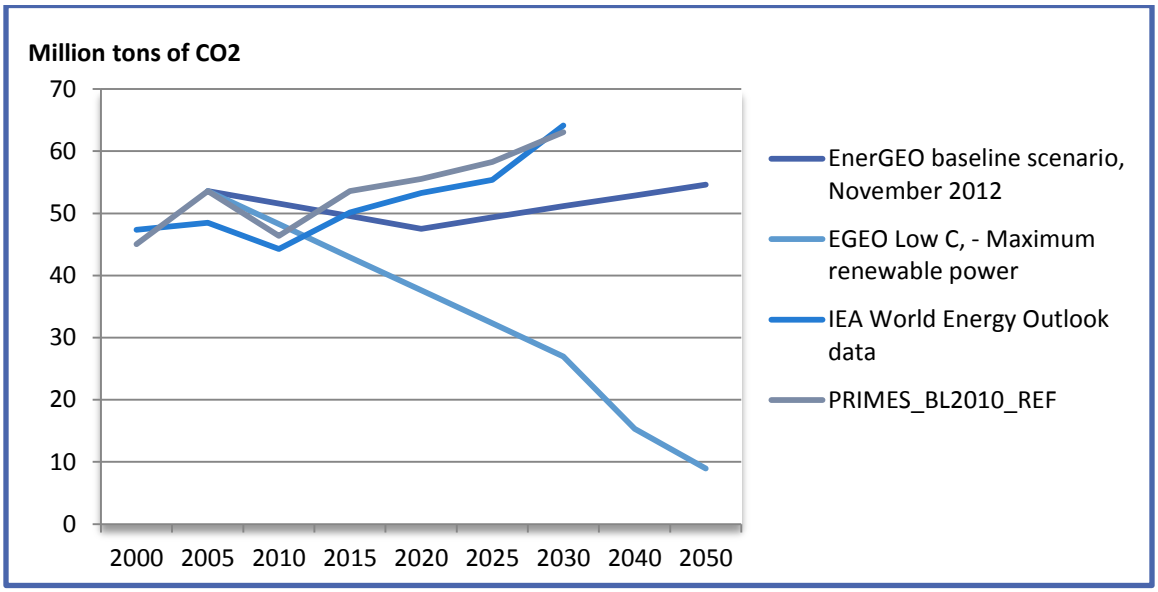

Figure 10: Past and future emissions under different scenarios of the GAINS model. Because not all scenarios are calculated for all years, some of the values are interpolated. Source: Gains Europe http://gains.iiasa.ac.at/gains/emissions.EUN/index.menu?page=241

The two EGEO Scenarios compare different low carbon policy options to the baseline scenarios. PRIMES 2010 is the main EU scenario and the IEA World Outlook scenario is using the International Energy Agency data instead of the EU base data. The different scenarios produce very different results and are only useful to demonstrate the choices available. Except the EGEO Renewable, they all predict a future increase of emissions in the region.

The International Futures is a global model and sometimes numbers for small countries are not very good. But it provides different scenarios in global context. The Figure below presents the predicted emissions for the group of countries until 2050. Different from GAINS, all scenarios under IFs predict a moderate drop in emissions in the future.

[7] http://gains.iiasa.ac.at/gains/EUN/index.login?logout=1
http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

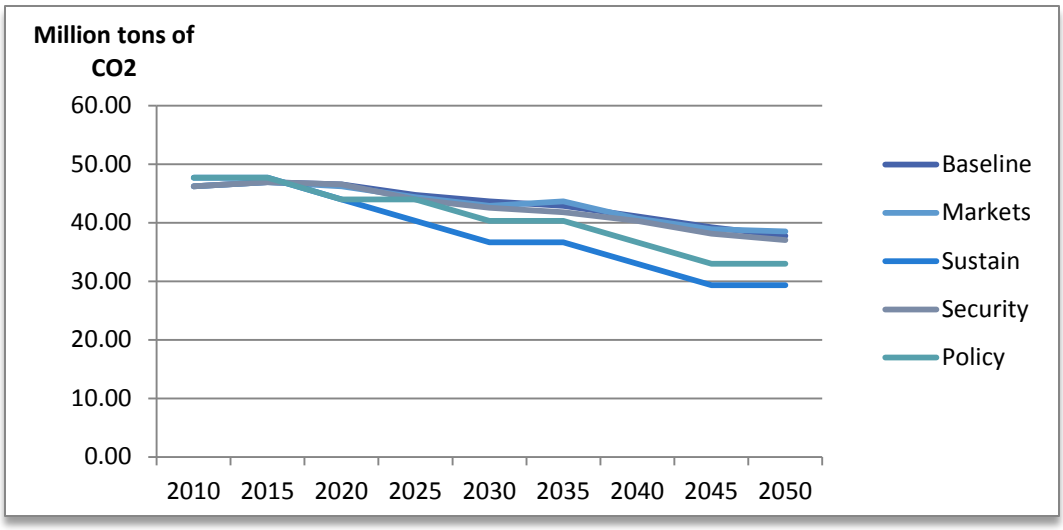

Figure 11: Predicted emissions under the baseline and 4 development scenarios developed by UNEP in 2007: Markets First, Security First, Policy First and Sustainability First. The International Futures (IFs) modeling system, version 6.69. IFs was initially developed by Barry B. Hughes and is based at the Frederick S. Pardee Center for International Futures, Josef Korbel School of International Studies, University of Denver, www.ifs.du.edu.

GEO 4 development scenarios were developed by UNEP in 2007 and are presented below. (http://www.unep.org/geo/geo4/media/fact_sheets/Fact_Sheet_17_The_Future.pdf)

- **Markets First** pays lip service to sustainable development in terms of the ideals of the Brundtland Commission, Agenda 21 and other major policy decisions. There is a narrow focus on the sustainability of markets rather than in the context of the broader human-environment system.
- **Policy First** introduces some measures aimed at promoting sustainable development, but the tensions between environment and economic policies are biased towards social and economic considerations.
- **Security First** focuses on the interests of a minority: rich, national and regional. It emphasizes sustainable development only in the context of maximizing access to and use of the environment by the powerful.
- **Sustainability First** gives equal weight to environmental and socio-economic policies, accountability, and it stresses transparency and legitimacy across all actors. It emphasizes the development of effective public-private sector partnerships not only in the context of projects but in the area of governance, ensuring that stakeholders across the environment-development discourse spectrum provide strategic input to policy making and implementation.

Based on the existing information and scenarios it is not possible to set quantitative targets for the future emissions of Kosovo.

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

But it seems that there are two main axes along which the possible scenarios for the present LEDC could be developed. First axis is related to energy efficiency and sustainability and the second to investment in electricity generation – coal or the renewables. The possible scenarios are presented in Figure 12 below.

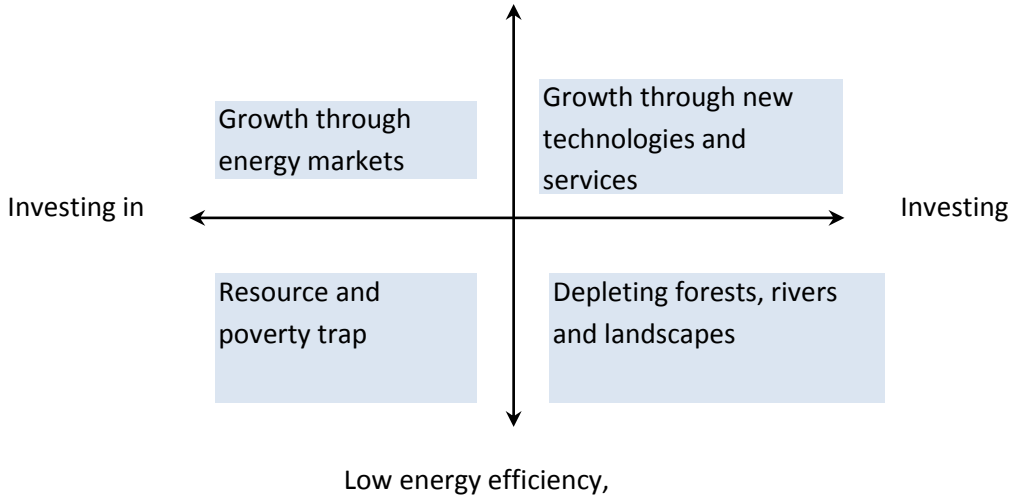

Figure 12: Possible LEDC scenarios

The description of these scenarios is as follows:

- **Resource and poverty trap:** Kosovo continues to depend heavily on coal for its electricity production as well as heating of buildings. Modern thermal power-plants are built with higher efficiency and lower emissions, but the energy demand and energy prices grow. Households and industry, who cannot afford investments in energy efficiency, pay higher and higher cost of energy, especially after the energy sector enters EU ETS and has to pay for the emission quotas.
- **Depleting forests, rivers and landscapes:** Kosovo will create environment for foreign investors. Potential is in hydropower large and small scale wind energy and solar power. At the same time coal mining areas are in decline and require additional government support for restructuring. Due to low energy efficiency the energy demand grows faster than the supply of energy, leading to over exploitation of natural resources such as forests, rivers, landscape and biodiversity in general. This causes additional problem with adaptation to climate change, reduces quality of life and tourism potential of the country.
- **Growth through energy markets:** Kosovo attracts investment in its coal power sector with imported technology, significantly improving its efficiency and reducing specific

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

emissions. The life span of coal mines is extended for another generation, making it possible to gradually restructure their economy at low cost. At the same time energy efficiency measures in households and industry keep the energy demand below the supply and energy costs within reason. Kosovo exports electricity to other EU countries and can thus afford the necessary emission quotas under the EU ETS.

- **Growth through new technologies and services:** An energy sector transformation is achieved combining investment into renewable energy and energy efficiency. This generates new business opportunities and workplaces replacing the lost workplaces in the coal mining regions. High technology manufacturing, service and financing businesses emerge that increase the exports of industrial products and services. Energy demand and energy prices are stable; households and industry are not exposed to increasing price of carbon or the volatility of global energy markets.

Obviously the first two scenarios should be avoided if at all possible, while a genuine choice exists regarding the future investment in the electricity generation. If Kosovo decides to invest in the next generation of coal fired power plants, it should do this before entering the EU. In doing this it can count on the interest of investors due to high demand for electricity in the Mediterranean region of the EU. But Kosovo can probably attract similar investment in its renewable potential. Here biomass, hydropower (small and large scale) and wind are already commercially viable and photovoltaics should be competitive without public subsidies before 2020.

Regardless of the choice made on the energy supply side, investment is very justified on the demand side – in energy efficiency and sustainable transport. Here the cost effective potential and co-benefits in terms of poverty reduction and generating economic growth are significant.

The proposed mitigation goals of the Strategy accommodate both possible scenarios in terms of sources of energy while clearly setting energy efficiency as a key priority.

CLIMATE CHANGE ADAPTATION

If one takes into consideration that under present conditions climate variability is already important to successful management of water in many parts of the world in that it drives processes of local, national and regional adaptation (Palmer et al., 2008; Hallegatte, 2009), then climate change adds to the existing complexities of achieving just socio-economic development which involves multiple uses of water among growing numbers of users in ways that are both fair and sustainable (Lebel, 2007, 2009).

For this reason it is important pro-active integration of climate change adaptation, disaster risk reduction, and sustainable development strategies is often needed. However, we know yet, little about the 'politics' of how strategies actually work, e.g. in regard to trust building, conflict resolution and the way in which different interests are weighed against each other.

Often, technical measures are not sufficient anymore, and public authorities, non-governmental organizations and private companies are looking for other solutions to ensure that the

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vulnerable water resources are managed in a sustainable manner. However, current institutional arrangements are often insufficient to manage these new challenges adequately and innovative and adaptive ways for the governance of climate adaptation are required.

Within this context, Kosovo is faced with great challenges to make its public governance system more resilient and flexible, for instance related to: 1); training especially, dealing with uncertainties in decision-making, in particular related to the unpredictable future of climate change, for example by means of long term scenario analyses, risk assessments and vulnerability assessments; 2) involving the private sector in natural resources management, for instance through public-private partnerships; 3) introduction of integrated approaches and adaptive management concepts;; 4 introduction of pricing, cost recovery and stimulation measures.

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CLIMATE CHANGE IMPACTS IN KOSOVO

A Climate Change Adaptation component is crucial for responding and anticipating the impacts of climate change in Kosovo. These current and expected impacts include (Sources: IPCC, 2007, 2013, UN-Habitat 2009, OSCE 2008, and UNDP/WMO 2009):

- Exposure to hazards such as droughts, floods, and forest fires will become greater with climate change. Climate variability has already increased in Kosovo;
- Rising intensity and frequency of precipitation extremes like heavy rain events, as well as more severe drought, particularly since the 1980s. Flash floods are getting more common in mountain areas, while river floods occur more often in plains and lowlands;
- Higher temperatures will make heat waves and forest fires more likely. Since 2000 there have been an increasing number of forest fires in Kosovo;
- Kosovo has been struck by drought several times in the last two decades (1993, 2000, 2007, and 2008);
- Increased temperatures, more uncertain rainfall, and reduced runoff combined with socio-economic developments and increased use of water resources will heighten exposure to drought;
- Since 2004, 80% of Kosovo municipalities have suffered from water shortages due to hydrological drought and the misuse of water resources (OSCE, 2008);
- Ecosystem degradation and reduction of ecosystem services;
- Increase and new forms of pollution and water-related diseases.

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It is important to take into account that climatic hazards have a much greater impact than should normally be the case in country such as Kosovo, owing to a high degree of vulnerability. This is the result of a variety of factors, including (source: UN-Habitat 2009, OSCE 2008, UNDP/WMO 2009):

- Unprecedented construction boom and urbanization since 1999;
- High socio-economic vulnerability due to a high incidence of poverty (among 45% of the population) and a fragile economy, combined with limited provision in the health, social welfare and employment sectors;
- Illegal construction in hazard zones and failure to adhere to building codes;
- Lack of maintenance and destruction during wartime;
- Inadequate design of drainage and sewage systems;
- Inadequate land use and municipal planning increase population exposure to hazards;
- Unsustainable water management and agronomic practices, deforestation, and destruction of slopes by mining activities.

The following subsections provide a more detailed problem definition for different sectors especially vulnerable for climate change impacts.

WATER RESOURCES

Kosovo has relatively small and limited amounts of fresh water resources. Fresh water resource shortages are most likely to occur in near future dry years if appropriate adaptive actions are not implemented right now.

Furthermore, available water resources are unevenly distributed throughout the territory, divided into four river basins / watersheds: Drini i Bardhë, Ibër, Morava e Binçës and Lepenci. The average annual renewable water supply per person in Kosovo is about 1'987 m3/person/year, and is classified as no stress (Falkenmark indicator), which is significantly low compared to the world average of 7'243 m3 (CEDARE AWC, 2006). Because the water availability differs from one river basin to other, there is a need to conduct research to explore the possibilities and potentials for additional water storage reservoirs within river basins. Development of environment impact assessment, feasibility studies analysing viability of water transfer options, shall precede the final establishment of appropriate infrastructure to transport water from one to the other river basin.

The western and southern parts of Kosovo, known as Dukagjini Plain, are richer in surface and groundwater resources. The northern and eastern parts of Kosovo, known as Kosovo Plain, have less water resources available. Yet, this area has the largest concentration of population and the most hot spots sites that causes extreme water pollution.

Main user categories of fresh water resources are: Drinking Water Supply for households, Water Supply for Industry and Energy (for hydro-power and for cooling power plants) and for Irrigation purposes. Based on the Annual Performance Report of Water Service Providers in Kosovo for the year 2012, the water industry in Kosovo is still weak; showing deficiencies in most of performance indicators such as service covarage which is at the level of 78%. A lot of

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rural villages are not covered by the regional water supply schemes and some villages are still using ground water from shallow wells of deteriorated quality. Kosovo possesses approximately 237'800 hectares of agricultural land, of which only 42'200 hectares are irrigated, or about 17.7%. Despite the figures provided above, Kosovo is most advanced in the region in relation to utility performance. E.g. 78% coverage does not mean the rest of the population does not have access to water services. Instead they may have own systems, or use wells.

River water quality in Kosovo is poor owing to the lack of wastewater treatment plants, disposal of wastes along / or near the river banks, poor or no maintenance of river beds. Usually the quality of rivers upstream represents a healthy aquatic habitat and meets the environmental standards. Some of the main rivers downstream of larger municipalities and industries are heavily polluted that the water cannot be used for water supply or for irrigation purposes. The main rivers in Kosovo belong to the pollution category 2 and 3, while the Sitnica River is categorised as "dead river".

The impact of climate change may further aggravate the quality of water courses, in particular during summer months when it is expected the variation in the precipitation pattern that will be reflected in lower river stream and by the increase of temperatures, while the sources of contamination remain constant. Pollution of surface and groundwater resources would have serious effect on people's health; it may hamper economic growth and can impact food sufficiency and security. In Annex 3 are presented data on the coverage of water supply and sewerage in Kosovo

Pressure on the already limited natural water resources is being enhanced by human activities, which are contributing to the depletion and deterioration of resources through increases in water demand in all sectors and pollution along the water courses.

The expected temperature increase and decrease in rainfall patterns will be directly reflected in river flow regimes, in the groundwater levels and amount of recharge to groundwater, as well as the evaporation of water from the soil. Furthermore, climate change will increase vulnerability to extreme flooding and drought events with unpredictable socio-economic impacts on human well-being and environmental conditions.

ACTIONS TO RESPOND TO THE IMPACTS OF CLIMATE CHANGE IN KOSOVO

Based on above considerations, freshwater vulnerability assessment to identify potential risks, providing decision makers with an early warning signal about the need to monitor potential variation over time is crucial. This is highly important in order to detect the occurrence of threats as early as possible, for being able to properly design and implement appropriate measures to reduce negative impacts. Moreover, the assessment enhances public awareness about the threat that the entire society may face.

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

- To adequately respond to the challenges of climate change, Kosovo shall urgently develop new policy papers and/ or amend existing policy framework to mainstream the climate change mitigation and adaptations measures within the legal framework and within the overall national development strategy. Development of new policy papers and/ or amendment of existing policy framework shall be based on a comprehensive scientific research to evaluate potential climate change impacts on water resource in all four river basins in Kosovo. The following issues are recommended to be mainstreamed with the water strategy and river basin management plans, under the legal framework for water resources management:
  - Preparation of the regulation on wastewater treatment, water reclamation and reuse, including incentive packages for water reclamation and reuse.
  - Preparation of the regulation on groundwater management, replenishment of groundwater aquifers, mandatory groundwater withdrawal restrictions and groundwater monitoring.
  - Preparation of the Program for risk management, including flood protection and identification of the flood prone areas.
  - Preparation of the Program for management for droughts, water allocation/ portioning and prioritizing the customer categories under the drought situations.
  - Preparation of the regulation for stimulating rainwater harvesting. Incentive programmes for rainwater harvesting.

AGRICULTURE, FORESTRY, BIODIVERSITY AND LAND USE PLANNING

Kosovo is in the process of restructuring the agricultural and forestry sector with a view to sustainable economic development based on European environmental standards, especially in legislation. The Government of Kosovo is in support of an integrated approach aiming to find a balance between economic developments, environmental protection and land use.

Kosovo has inherited many environmental problems accumulated over decades, affecting the uncontrolled exploitation of natural resources, high population density, uncontrolled construction on agricultural land, uncontrolled use of forest, illegal logging, economic and industrial activities, including mining and processing industry which affect the environment. Additional to all those factors which are affecting the agriculture, forestry and land use, the climate change adds to the existing complexities of achieving a just socio-economic development. Under point 2 of Annex 3, statistical data on agriculture, forestry and biodiversity have been analysed.

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

PUBLIC HEALTH

The impact on human health is one of the most significant impacts from climate change, but at the same time health can be a positive driving force for the climate agenda, and a means to engage the public in finding solutions. The responsibility for protecting lives and wellbeing ultimately falls on the health sector. Investing in health protection and adaptation can save lives now and increase resilience to climate change. Hence, protection and enhancement of health is an essential pillar of sustainable development, and of the response to climate change. A more integrated and inter sectorial approach to improving health resilience, fostering pro-poor growth, and protecting the environment, should improve policy coherence and increase efficiency.

KEY ISSUES AND CHALLENGES

Climate change adaptation requires adaptive approaches for resources management (i.e. water, agriculture, forestry, biodiversity, etc. This is achieved with implications for the institutional set up, participation in all levels and **civil society.** Në vijim jane permbledhur sfidat kryesore që kanë të bëjnë me përshtatjen ndaj ndryshimeve klimatike

Governance has to be adapted to the context and to capacity, and be tailored to the size and nature of the problem as well as to the objective targeted. The challenge is increased by the local specificity of areas affected by climate impacts, given that each area has its own physical, geographical and socioeconomic characteristics.

Kosovo presents many examples of sectors with competing interests, such as agriculture, industry, domestic water supply, health and minimum flows for sustaining ecosystems. Development and implementation of management plans often remain a problem because of poor cooperation between different ministries, poor cooperation across administrative boundaries, and also the protection of vested interests of important individuals in government, industry or the scientific world. Thus, the process of formulating climate adaptation action plans should involve not only representatives of the different sectors that depend directly on water resources (such as agriculture or industry), but also sectors that indirectly affect water resources (such as urban development and rural planning). A major challenge to the governance of climate adaptation is cross-sectorial cooperation. If successful, cooperation between policy fields and sectors provides tremendous opportunities in terms of cost efficiency.

Delegating to local governance structures can produce good results, and a framework for encouraging subsidiarity should be in place, in line with several EU directives. In some cases, collective management approaches at the local level have demonstrated good outcomes, often in partnership between stakeholders and local public agencies or projects.

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Information, knowledge sharing and communications are insufficient to support management or to foster good governance. Even where information exists, information asymmetry often constrains its exchange between different stakeholders.

Improving "participatory planning" approaches that integrate public and stakeholder input in decision-making. Empirical evidence suggests that participation and local collective management can be effective approaches to good governance. Participation appears to be effective in improving outcomes because it increases stakeholder ownership and because stakeholders often have access to information and can devise solutions better than or complementary to those delivered from the top down. Perhaps the most important aspect of participation is that it can align government objectives with those of local people. This gives the local stakeholders incentives to manage natural resources and environment well, and can empower them by giving them influence over outcomes during the implementation process.

There is a risk that participatory approaches may reflect existing inequalities. The more powerful stakeholders may either dominate participatory deliberations or not participate at all. A further aspect of this asymmetry of power is that most people do not 'own' any land and/or water[8], but they are nevertheless stakeholders. Ways to include and empower these people are often hard to negotiate, especially when there are social or cultural barriers. An equal challenge is how to get the participation of those who are not directly benefitting from the resource but who may be polluting, or are vulnerable to the impacts of climate change. Hence, the NAS Kosovo recommends involving a wide representation of stakeholders during implementation of the strategy, including those directly, but also indirectly, benefiting from the proposed strategy.

Experience yields some do's and don'ts: build on existing social capital, promote equity and inclusion, start in areas of good potential, go step-by-step, and learn lessons and adapt. It seems that costs are less and outcomes better where participatory approaches build on existing social capital, and so interventions should be adapted to take advantage of it. Principles of equity and social fairness demand that the voices of the less powerful should also be heard, and this is something that public agencies can advocate. Interventions could start in areas with potential for success and where intervention costs are lower, in the expectation of spontaneous replication.

Adjusting the incentives structure is a possible mechanism for supporting climate adaptation at the local level, but adjustments are politically difficult and can have negative or unintended consequences. **Positive and negative incentives** are very powerful determinants of behavior and, in the case of climate adaptation; governments are usually able to adjust them easily. Thus, they are attractive mechanisms, especially in an area with limited administrative capacity. Options include adjusting input prices like energy or output prices like farm produce;

[8] In Kosovo water resources are "assets of general interest and property of the Republic of Kosovo".

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

providing subsidies to encourage specific behaviors; or imposing bans on crops or on irrigation methods, for example. However, all these approaches have also big disadvantages.

ACTIVITIES AND LEGISLATION AIMED AT ADDRESSING CLIMATE CHANGE

This section provides a summary of major existing and planned (funded) government activities and legislation aimed at addressing climate change.

⇨ AT INTERNATIONAL LEVEL

The 2011 UNDP Human Development Report provides overwhelming evidence that we are reaching an upper limit to our capacity to emit greenhouse gases without dire consequences. It has been estimated that stabilizing the greenhouse gas concentrations in the atmosphere at a level that prevents catastrophic climate change will require a 50% reduction of the GHG emissions by 2050 from 1990 levels.

Addressing climate change requires two types of response. Firstly, and importantly, we must reduce our greenhouse gas emissions (GHG) (i.e. take **mitigation** action) and secondly we must take **adaptation** action to deal with the unavoidable impacts. The EU's recently agreed climate change legislation puts in place the concrete measures to reach the EU's commitment to reduce emissions to 20% below 1990 levels by 2020 and is capable of being amended to deliver a 30% reduction if agreed as part of an international agreement in which other developed countries agree to comparable reductions and appropriate contributions by economically more advanced developing countries based on their responsibilities and capabilities. However, even if the world succeeds in limiting and then reducing GHG emissions, our planet will take time to recover from the greenhouse gases already in the atmosphere. Thus we will be faced with the impact of climate change for at least the next 50 years. We need therefore to take measures to adapt.

The United Nations Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol (KP) under the Conventions and their subsequent decisions, as well as the EU policy in the area, support developing countries and countries with economies in transition in their efforts to continue economic growth with the least competitive distortions, while in the same time decrease growth in emissions and adapt to the effects of the changing climate. In the Bali Action Plan (2007), the developing countries agreed for the first time to design and implement Nationally Appropriate Mitigation Actions (NAMAs) in the context of sustainable development, supported and enabled by technology, financing and capacity building. The 15th Conference of the Parties" (COP) held in Copenhagen in December 2009, have taken note of the Copenhagen Accord (CA) - a political declaration containing which agrees to limit climate change to not more than 2°C above preindustrial levels in the context of equity and sustainable development and reaffirms the developmental aspects of climate change, including low-emission development strategies. The Conferences in Cancun and Durban provided further details in this regard.

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Many important steps have been taken in the development of the adaptation regime under the UNFCCC, as well as many activities mandated towards the implementation of the Convention. Two key milestones important for Kosovo are indicated below; however, these should be recognized within the context of the many other important steps that have been taken in the process leading up to, as well as beyond these milestones.

- **Nairobi Work Programme (NWP)**: In 2006, at COP 12 in Nairobi, the Subsidiary Body for Scientific and Technological Advice (SBSTA) was mandated to undertake a 5 year project to address impacts, vulnerability and adaptation in relation to climate change – the Nairobi work programme. Activities under the NWP are ongoing.
- **Cancun Adaptation Framework (CAF):** In 2010, at COP 16 in Cancun the Cancun Adaptation Framework (CAF) was established. Activities under the CAF relate to the following five clusters: Implementation, including a process to enable LDC Parties to formulate and implement national adaptation plans (NAPs), and a work programme to consider approaches to address loss and damage; support; institutions, including the establishment of an Adaptation Committee at a global level, as well as regional and national level arrangements; principles; and stakeholder engagement. Activities under the CAF are ongoing to enable full operationalization.

The national adaptation plan (NAP) process was established under the Cancun Adaptation Framework (CAF). It enables Parties to formulate and implement national adaptation plans (NAPs) as a means of identifying medium- and long-term adaptation needs and developing and implementing strategies and programmes to address those needs.

In addition to the mandates from the UNFCCC, there are now strong political mandates from the international health governing bodies, through a 2008 World Health Assembly resolution (WHA 61.19[9]) on climate change and health, and equivalent commitments at European Regional level (European Regional Framework for Action was welcomed in the 2010 Parma Declaration on Environment and Health[10]). These political mandates are also supported by advances in technical guidance, and in health adaptation projects.

Parties adopted the Cancun Adaptation Framework (CAF) as part of the Cancun Agreements at the 2010 Climate Change Conference in Cancun, Mexico (COP 16/ CMP 6). In the Agreements, Parties affirmed that **adaptation must be addressed with the same level of priority as mitigation**.

The objective of the **Cancun Adaptation Framework** (paragraphs 11-35) is to enhance action on adaptation, including through international cooperation and coherent consideration of matters relating to adaptation under the Convention. Ultimately enhanced action on adaptation seeks to

[9] http://www.who.int/globalchange/A61_R19_en.pdf

[10] http://www.euro.who.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-framework-for-action

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reduce vulnerability and build resilience in developing country Parties, taking into account the urgent and immediate needs of those developing countries that are particularly vulnerable. At the Durban Climate Change Conference in November/December 2011, Parties significantly advanced the implementation of the Framework.

⇨ AT EU LEVEL

In April 2009 the European Commission presented a policy paper known as a White Paper which presents the framework for adaptation measures and policies to reduce the European Union's vulnerability to the impacts of climate change.

The framework focuses on the following key areas:

- Building a stronger knowledge base since sound data is vital in the development of climate policy
- Taking climate change impacts into consideration in key EU policies
- Financing climate change policy measures
- Supporting wider international efforts on adaptation by helping for example non-EU countries to improve their resilience and capacity to adapt to climate change.

From 21 May 2012 to 20 August 2012 the EU implemented a consultation process on the Preparation of the EU Adaptation Strategy. This consultation seek to collect opinions from stakeholders and experts in the field of adaptation to climate change with a view to getting additional information for the preparation of the EU Adaptation Strategy.

To facilitate implementation of the first pillar of the White Paper, in March 2012 the web-platform Climate-ADAPT (European Climate Adaptation Platform) became publicly accessible. This platform provides users with information in the following areas:

- Expected climate change in Europe;
- Current and future vulnerability of regions and sectors;
- National and transnational adaptation strategies;
- Adaptation case studies and potential adaptation options;
- Mainstreaming at the European level;
- Tools that support adaptation planning;
- Profiles of adaptation-related research projects, guidance documents
- (e.g., for the management of uncertainty), reports, additional information sources,
- links, and announcements of events.

⇨ NATIONAL LEVEL

As a result of issues related to its status, Kosovo is still not recognized by United Nation Institutions. Consequently, it is not eligible to be party to international conventions and it can participate in negotiations only as an observer. However, compliance with international laws, including Multi-National Environment Agreements remains extremely important for the future of Kosovo in its domestic strategy as well as for its international relations.

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In order to address climate change from this issue, MESP has outlined the following sub-sections which deal with specific segments in this area:

- A.I. (GRK) NO. 01/2016 on mechanism for monitoring greenhouse gas emissions2
- A.I. (GRK) NO. 09/2015 for monitoring greenhouse gas emissions
- A.I. GRK - No.19/2013 for access to the information for economic consumption of fuel and co2 emission of new personal vehicles2
- A.I. GRK - No.19/2013 for access to the information for economic consumption of fuel and co2 emission of new personal vehicles
- A.I. No.20/2013 for application of clean development flexible mechanisms

In addition to legislation, MESP has developed GS Inventory for 2008, 2009 and 2015.

POST-DISASTER ASSESSMENT[11]

The Emergency Management Agency (EMA) within the Ministry of Interior is formally in charge of the coordination and or conduct of damage assessments. However, there is no pre-defined/arranged method and procedure for the collection of information, storage and periodic updating of disaster related historical data in Kosovo. Data collection and storage for each disaster event is ad hoc. For example, following the forest fires of 2007 Inter-ministerial Committee assigned the Ministry of Agriculture to conduct data collection and assessment. This was done according to the practices of this ministry. Finally all of the information was transferred to the Situation Centre (SitCen) within the Office of the Prime Minister, where it was stored and archived. A post-action analysis and report were later performed.

RISK ASSESSMENT[12]

EMA is tasked with coordinating and preparing risk assessments for natural and man-made disasters. In 2009 the Kosovo Risk Assessment was conducted covering all potential hazards for the population of Kosovo and attempting to quantify the expected level of damage. The assessment focuses mostly on hazards and structural vulnerability, as EMA and other organizations possess little expertise in analyzing socioeconomic vulnerability and assessing capacity. Besides hazard maps, other available relevant data include maps of road, railway and electric power infrastructure, as well as of population distribution. However, as of yet, climate change vulnerability data for Kosovo is not available (Source: Climate Change Knowledge Portal, World Bank Group, 2013.)

At the community level, municipalities possess little or no risk assessment capacity. Kosovo Red Cross is working with municipalities to strengthen this area and is looking to secure funding to conduct vulnerability and capacity assessments.

INFORMATION MANAGEMENT[13]

[11] UNDP/WMO, 2011. IPA Beneficiary Needs Assessment Kosovo (as defined by UNSCR 1244/99)

[12] *Ibid*
http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

EMA is formally charged with maintaining an emergency management database, which includes the collection, storage and updating of information. For this purpose the DEM has prepared a draft methodology, which has yet to be approved by the Government. However, as noted above in response situations most agencies forward their information to SitCen. It is unclear how EMA receives this information.

The Ministry of Environment and Spatial Planning also maintains a database in support of the Kosovo Spatial Plan. In addition to geographic, demographic, poverty, land and environmental data analyses, it includes sector reports and data on the system of education, habitation, agriculture, forests, rural areas, the energy sector, the health sector, transportation infrastructure, hydrology, trade, industry, culture, information technology and tourism in Kosovo. All of this information is managed under the oversight of the Department for Spatial Planning. There appear to be no coordination or linkages between this database and those of EMA and Sit Cen.

CHAPTER III

VISION, MISION AND OBJECTIVES

VISION

Kosovo with zero emission of GSs, capable of adapting to climate change, effectively mitigating the causes of climate change and effectively anticipating and responding to the impacts of climate change, taking into account international principles for sustainable development.

MISSION

Reducing GHG emissions the risk and damage from current and future impacts of climate change in a cost-effective manner and utilizing potential benefits arising from climate change.

OBJECTIVES

Considering the large uncertainty regarding the current level and future projections of GHG emissions in Kosovo, it is difficult to set a meaningful mitigation objective for reduction of greenhouse gas emissions in terms of quantitative emission reduction targets. For the same reason, and for the reason of uncertainty of future social and

[13] UNDP/WMO, 2011. IPA Beneficiary Needs Assessment Kosovo (as defined by UNSCR 1244/99) http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

economic development of the country, it is also difficult to set long-term development strategy objectives for the reduction of greenhouse gas emissions (e. g. 2050 as in the EU Roadmap). Because of this, the mitigation objectives are set in a qualitative sense, as follows:

OBJECTIVES OF LOW EMISSION DEVELOPMENT

FIRST STRATEGIC OBJECTIVE

Developing Kosovo's capacity to meet its future obligations under the UNFCCC Convention and the EU.

SPECIFIC OBJECTIVE 1: To develop and implement policies for climate change
SPECIFIC OBJECTIVE 2: To create a framework for the establishment of the GS Inventory System

Should Kosovo sign UN Framework Convention on Climate Change it will be obliged to annually monitor their GHG emissions. Initially Kosovo probably will not be part of the Annex I countries but will become part of the group of so called non-Annex I parties. Reporting system for non-Annex I Parties under UNFCCC is through National Communications with a flexible multiannual timetable, reporting on GHG inventories and other information. Annual monitoring, reporting and review of greenhouse gas emissions and removals are one of the key obligations for Annex I Parties under the Convention and its Kyoto Protocol (decisions 18/CP.8, 19/CP.8 and 14/CP.11). Kosovo may actually need to start annual reporting even before becoming Annex I party as part of reporting obligations towards European Environment Agency (EEA)

SECOND STRATEGIC OBJECTIVE

Reducing greenhouse gas emissions

SPECIFIC OBJECTIVE 1: Preventing/ Reducing Greenhouse Gas Emissions
SPECIFIC OBJECTIVE 2: Sustainable Mobility Planning and Promotion in the Largest Populated Centers of the Republic of Kosovo

Some of the actions like those in the energy and forestry sector are already in the process. Other actions are presented in the chapter of Climate Change Action Plan which should be implemented in cooperation with other relevant authorities and interested donors.

Interaction in the realization of this objective and the fifth Objective of the Energy Strategy of the Republic of Kosovo 2017-2026 - The fulfillment of targets and obligations in energy efficiency, renewable energy sources and environmental protection, would directly contribute to the reduction of emissions of greenhouse gases, which states that:

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

"Kosovo has pledged to meet the 9% saving target from total energy consumption, targeting according to EU Directive 2006/32 / EC. It has also assumed the obligations to implement the new EU policies deriving from European Directive 2012/27 / EC on Energy Efficiency.

In the RES sector, it aims to develop and improve the necessary regulatory and operational mechanisms to reach the target of 25% of GDP's share of GDP in gross final energy consumption by 2020. Thereafter, the Government will review its achievements of the integration of RES and will set new targets for the following period. It is expected that Kosovo will further promote RES through its potential, obligations and needs, as well as European developments and experiences.

Kosovo as well as other contracting parties to the Energy Community have obligations for the implementation of European environmental directives and this will remain one of the strategic objectives of the energy sector in Kosovo."

If supported with finance, technologies and capacity building for appropriate local mitigation actions Kosovo can achieve more significant emission reductions. The objectives are coordinated with goals and objectives of the strategic documents and policy documents of Kosovo, such as the Kosovo Environmental Strategy and National Environmental Action Plan, Energy Strategy as well as strategies for the Agriculture and Forestry sector. Some of the measures with low development are already being implemented for the resources of Kosovo and with donor support, such as Kosovo Energy Efficiency Action Plan, Renewable Energy Action Plan and Strategy on Forestry and Climate Protection.

The mobility is fuelled by carbon, and there is clear scientific agreement that carbon emissions are affecting the global climate with irreversible long term consequences. Transport is the one sector where a reduction in energy use and emissions is proving to be extraordinarily difficult to achieve despite some success in any urban area.

There are opportunities for cities in Kosovo to switch to low carbon transport futures, where action will be implemented are based on a combination of economic, planning and technological innovations working in mutually supporting ways.

RECOMMENDED MEASURES FOR REDUCTION OF SERRIA GASES

The table 6. below shows the planned GHG emission reduction measures by sectors in sequence of their priority. Due to insufficient level of information about present emissions, it is difficult to assess the mitigation impact of the individual actions.

Sector or sub-sector	Possible measures
Capacity building	**Setting up National Inventory System of and strengthening reporting on GHG (KEPA)**
	National climate change policy development and implementation
	Climate policy in different sectors and in local communities

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

	Training on negotiations under UNFCCC and EU respectively
Energy efficiency	**Implementing Kosovo Energy Efficiency Action Plan 2010-2018**
	Introducing energy efficiency standards
	Promotion and awareness raising
	Establishing subsidy/lending schemes for energy efficiency measures
Renewable energy	Implementing National Renewable Energy Action Plan (NREAP) 2011 - 2020
	Promoting use of biomass for district heating and industrial co-generation
	Setting favorable regulatory conditions for photovoltaic electricity generation (without subsidies)
	Shallow geothermal for heating
	Biogas production from animal husbandry waste
District heating and industrial co-generation	Reconstruction and extension of district heating networks
	Introducing renewable energy and high energy efficiency (combined heat and power) energy generation
	Co-generation on industrial sites for both district heating and industrial needs
Thermal power plants and coal mines	Improving efficiency of existing TPPs
	Increasing the efficiency of production of electricity through replacement of TPP Kosovo A with Kosova e Re Power Plant
	Preventing self-combustion of lignite
Transport	**Sustainable mobility concepts in the cities and towns of Kosovo**
	Promoting public road transport (bus)
	Reconstruction of railways, including securing quality passenger service
	Precedence of walking and cycling before cars in urban development
	Developing settlements, road network and intermodality facilitating public transport
Waste management	Separate waste collection and recycling
	Using non-hazardous solid waste (domestics, tires,…) as alternative fuel in industrial production
Agriculture	**Manure storage, preparation and application methods**
	Proper application of mineral and organic fertilizers
	Organic production
Forests and nature	**Implementing Climate Protection Strategy in the Forest Sector in Kosovo** Sustainable forest management increasing resilience of forests Protection from forest fires Forestation and reforestation of bare lands Integrating carbon sequestration into forest management Parts of forests and protected areas left to natural development
	Designation and development of protected areas

Tabel 6. GHG emission reduction measures by sectors and sub-sectors

Using the GHG emissions are extrapolated in correlation with the predicted energy demand in the Energy Efficiency Action Plan (assuming other emissions remain constant) and compare

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

them with the impact of these measures, it is expected to achieve a reduction of GHG's from 7 to 14 % compared to the business as usual scenario in 2018 (figure 12). This gives a first approximation of what an emission target could look like when the emission inventory and projections are fully developed.

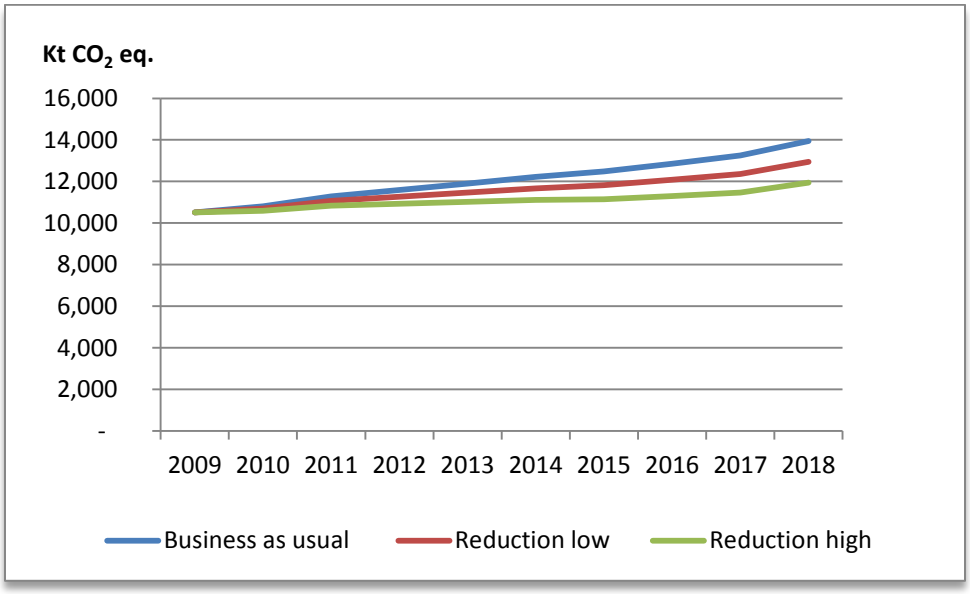

Figure14. Possible emission reduction based on proposed mitigation measures compared to rough estimate of the business as usual scenario. Low estimate of emission reduction is 1 Mt CO_2 eq. per annum in 2018 and high estimate is 2 CO_2 eq.

THE OBJECTIVES OF THE CLIMATE CHANGE ADAPTATION COMPONENT

Mission statement for Climate Change Adaptation Component - To reduce the risk and damage from current and future impacts of climate change in a cost-effective manner and to exploit potential benefits stemming from climate change.

THIRD STRATEGIC OBJECTIVE

Development of mechanisms and improving current disaster risk mitigation measures, in the sectors of economic importance that are particularly vulnerable to climate change;

SPECIFIC OBJECTIVES 1: Establishing mechanisms to reduce risk from disasters, for sectors that are vulnerable to climate change

SPECIFIC OBJECTIVE 2: Preparation of Climate Packages

The Strategy will aim to introduce new and improve current mechanisms of disaster risk reduction, especially important for sectors of economic significance that are particularly

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vulnerable to climate change impacts, and to enhance adaptive capacity of the vulnerable communities, particularly of the poor farmers, marginal groups and women to address the climatic impacts and related risks on their lives and livelihoods. By doing so, the Strategy intends to build the capacity of the local partners, actors and stakeholders to integrate climate change issues and adaptation into the local and regional development processes, and empower them for addressing climate change issues.

FOURTH STRATEGIC OBJECTIVE

To increase capacities of adaptation of natural systems

SPECIFIC OBJECTIVE 1: Improving the water balance through landscape improvement measures

SPECIFIC OBJECTIVE 2: Create better microclimatic conditions and more resistant landscapes to enable migratory species in more favorable habitats

In social systems, adaptive capacity refers to the ability to learn from mistakes and to generate experience of dealing with change, which in turn largely depends on the ability of individuals and their social networks to innovate.

Furthermore, it is emphasized that knowledge generation in itself is not sufficient for building adaptive capacity in social-ecological systems to meet the challenge of navigating nature's dynamics. Hence, learning how to sustain social-ecological systems in a world of continuous change needs an institutional and social context within which to develop and act.

FIFTH STRATEGIC OBJECTIVE

Capacity building of central and local stakeholders, stakeholders and stakeholders to integrate climate change issues and adaptation to development processes.

SPECIFIC OBJECTIVE 1: Capacity building for production of information, information use and communication

SPECIFIC OBJECTIVE 2: Development of awareness programs on climate change

SPECIFIC OBJECTIVE 3: Avoiding potential climate impacts on health

Building upon the insights above the Strategy includes several components which intended to increasing adaptive capacity:

1. Improving information management and exchange, i.e. joint/participative knowledge production, a commitment to dealing with uncertainties, broad communication between stakeholders, open and shared information sources, and flexibility and openness for experimentation.

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2. Capacity building, training and awareness raising, including public awareness programs and training for professionals.

3. Financial and economic measures and improving risk management.

4. Improving cooperation structures, i.e. inclusion of non-governmental stakeholders, governments from different sectors (supporting horizontal integration) and government from different hierarchical levels (supporting vertical integration);

STRENGTHENING THE INSTITUTIONAL FRAMEWORK

From the review of the existing strategies and of the problems with their implementation, institutional situation is a key obstacle and concern to effective implementation of the low emission strategy in Kosovo. This means that first priority will be the actions on capacity building. Other actions will be designed so that they involve private sector, public private partnerships, local communities and NGOs. It also seems that very little funding from domestic public sources will be available in the foreseeable future. This means that the financing of actions will have to be based mainly on private sector (population, companies, banks), "classical" donors and EU funds as they develop in the process of accession.

The Strategy envisages to effectively anticipate on, and respond to, the impacts of climate change, taking into account internationally endorsed principles for sustainable development. Adaptation to climate change is crucial for reducing the risk and damage from current and future impacts of climate change in a cost-effective manner and to exploit potential benefits stemming from climate change

One of the key objectives of the Strategy is to increase the adaptive capacity of both natural and social systems, based on a sound understanding of what determines resilience and vulnerability of these systems. The problem to be tackled is to increase the ability of the whole system to respond to change rather than reacting to undesirable impacts of change.

In short, adaptive capacity is an indication of the capacity to deal with change and disturbance, and reflects learning through knowledge sharing and responding to feedbacks. Increasing the ability of systems to adapt, or building their adaptive capacity, is an important consideration to prepare and respond to climatic changes: systems with high adaptive capacities can thus retain their integrity under a broader range of conditions than systems with low adaptive capacities. In social systems, adaptive capacity refers to the ability to learn from mistakes and to generate experience of dealing with change, which in turn largely depends on the ability of individuals and their social networks to innovate.

Furthermore, it is emphasized that knowledge generation in itself is not sufficient for building adaptive capacity in social-ecological systems to meet the challenge of navigating nature's

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

dynamics. Hence, learning how to sustain social-ecological systems in a world of continuous change needs an institutional and social context within which to develop and act. Knowledge and the ability to act upon new insights are continuously enacted in social processes.

Building upon the insights above the Strategy includes several strategy components targeted at increasing adaptive capacity:

1. Improving information management and exchange, i.e. joint/participative knowledge production, a commitment to dealing with uncertainties, broad communication between stakeholders, open and shared information sources, and flexibility and openness for experimentation.

2. Capacity building, training and awareness raising, including public awareness programs and training for professionals.

3. Financial and economic measures and improving risk management.

4. Improving cooperation structures, i.e. inclusion of non-governmental stakeholders, governments from different sectors (supporting horizontal integration) and government from different hierarchical levels (supporting vertical integration).

CHAPTER V

MONITORING, REPORTING AND ASSESSING THE IMPLEMENTATION OF STRATEGIC DOCUMENTS

The Ministry of Environment and Spatial Planning (MESP) as holder of the Strategy and Action Plan for Climate Change is responsible for the continuous monitoring of the implementation of this approved document. In order to ensure the effective and timely implementation of the activities set out in the Action Plan, MESP will have a proactive approach to monitoring implementation by linking monitoring activities with improved implementation.

For this reason, it is necessary to develop mechanisms for improvement by sending reminders to the institutions / persons responsible for implementation, organization of meetings, public information and the use of administrative or even political pressure instruments.

The Action Plan (AP) for the implementation of the Climate Change Strategy (CCS) foresees five key steps that relate to monitoring and reporting:

Step 1 - Assign staff responsible for monitoring and reporting related to the implementation of CCS/ AP
Step 2 - Draft and adopt the first Report on the Implementation of the CCS/AP
Step 3 - Drafting and approving the Second Report on the Implementation of the CCS/AP
Step 4 - Review of the Action Plan (if necessary)

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

Step 5 - Draft and approve the Final Report on the Implementation of the CCS/ AP

Institutional Structure for Monitoring and Reporting

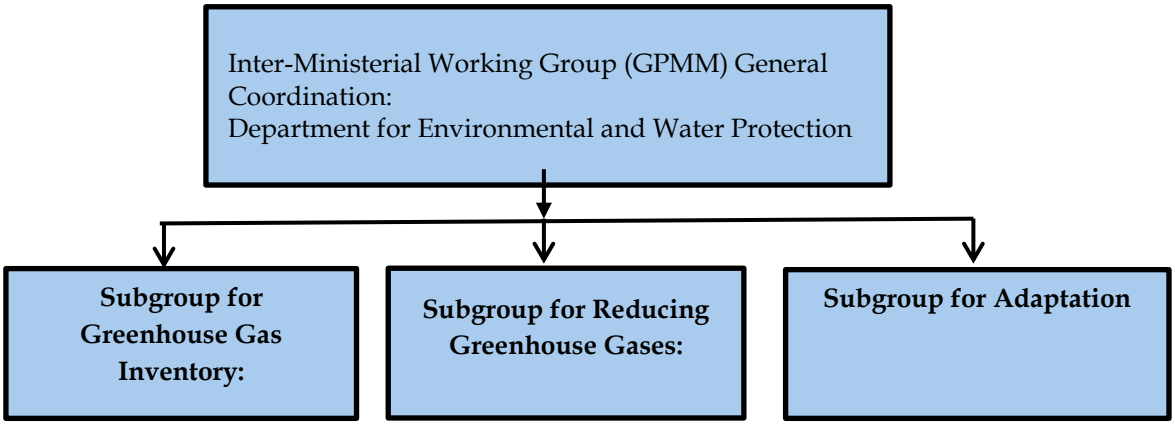
The first important step is to set clear roles and responsibilities for monitoring and reporting on the implementation of the CCS/AP.

The institutions involved in the monitoring and reporting of CCS and AP in Kosovo are:

- Ministry of Environment and Spatial Planning, as a leader
- Inter-Ministerial Coordination Committee
- Office for Strategic Planning
- Strategic Planning Committee
- Government of Kosovo

The Inter-Ministerial Climate Change Working Group (CCWG) established for drafting the Strategy and Action Plan for Climate Change will be used to set up a team responsible for monitoring and reporting on the implementation of CCS/AP.

Following the structure of the Action Plan, the responsible persons for each known set of measures will be assigned according to the tasks formulated according to the scheme presented and the Table



ROLES AND RESPONSIBILITIES

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Table 1 - Roles and Responsibilities

	Role	Responsibilities/tasks
1	**The Working Group (or responsible person) for monitoring of CCS Interventions related to the Strategic Framework and the CCS Interventions related to the functioning of Public Administration**	Monitoring and reporting on the implementation of strategic measures Improve the implementation of strategic measures Integrate the IAS's objectives into new and up-to-date sectoral strategies Ensuring public participation in the policy development process Monitoring and reporting on the implementation of administrative measures Improve the integration of IAS objectives into the legal framework Advancing the empowerment of existing institutions / bodies in accordance with the PV Establish schedules for the necessary trainings and integrate them into all relevant project activities both initiated and planned Advancing communication and sharing of information
2	**Working Group (or responsible person) for monitoring of PW interventions related to infrastructure investments and interventions related to financial and economic interventions**	Monitoring and reporting on investment activities Monitoring budget planning at national and local level Monitoring of international technical assistance and other projects Ensuring financial planning in accordance with the objectives of the CCS Monitoring and reporting on the implementation of financial and economic interventions Improve the introduction of incentives or fees, taxes, in accordance with the objectives of the CCS
3	**Working Group (or responsible person) for monitoring of SNAS interventions related to public awareness activities**	Monitoring and reporting on the implementation of public awareness activities Creating timetable for activities needed for public awareness Integrate the public awareness component in all project activities, both initiated and planned Establishing long-term cooperation with the media (newspapers, radio, television, social media) to promote

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		the objectives of CCS Collection of articles about climate change from the media
4	**Steering Committee / Main Advisory Body**	Organizes meetings at least once a year to discuss annual internal reports or official reports on the implementation of CCS/ AP Provide advice and guidance on inter-ministerial working subgroups in the form of conclusions of the meeting Provides timely delivery of data from responsible institutions Participate in public consultations on draft reports
5	**MESP / implementing institution of the PV and monitoring plan**	Coordinates the Monitoring and Reporting Process related to the implementation of CCS/ AP Provides logistical support (meeting rooms, organization of public consultation, data management, etc.) Official reports are submitted to the Government for approval Publishes approved reports on its website
6	**Government**	Approves official reports Supports the implementation of CCS/ AP with special decisions if necessary Provides budget support for the implementation of CCS/ AP
7	**Institutions responsible for implementation of CCS[14]**	Implement AP interventions Provide information on the implementation process to the Working Groups upon request
8	**Civil society**	Actively participates in decision making, monitoring and reporting process

Tasks formulated in Table 1 have to be performed in accordance with foreseen reporting dynamics, having in mind that monitoring, especially a pro-active one, (unlike reporting) is continuous activity which requires serious commitment and creation of timetable of activities.

[14] Although CCS Intervention sheets in majority of cases note multiple responsible institutions for a single intervention, one of them have to be marked as leader/coordinator of intervention and provide all requested data on certain intervention implementation status.
http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

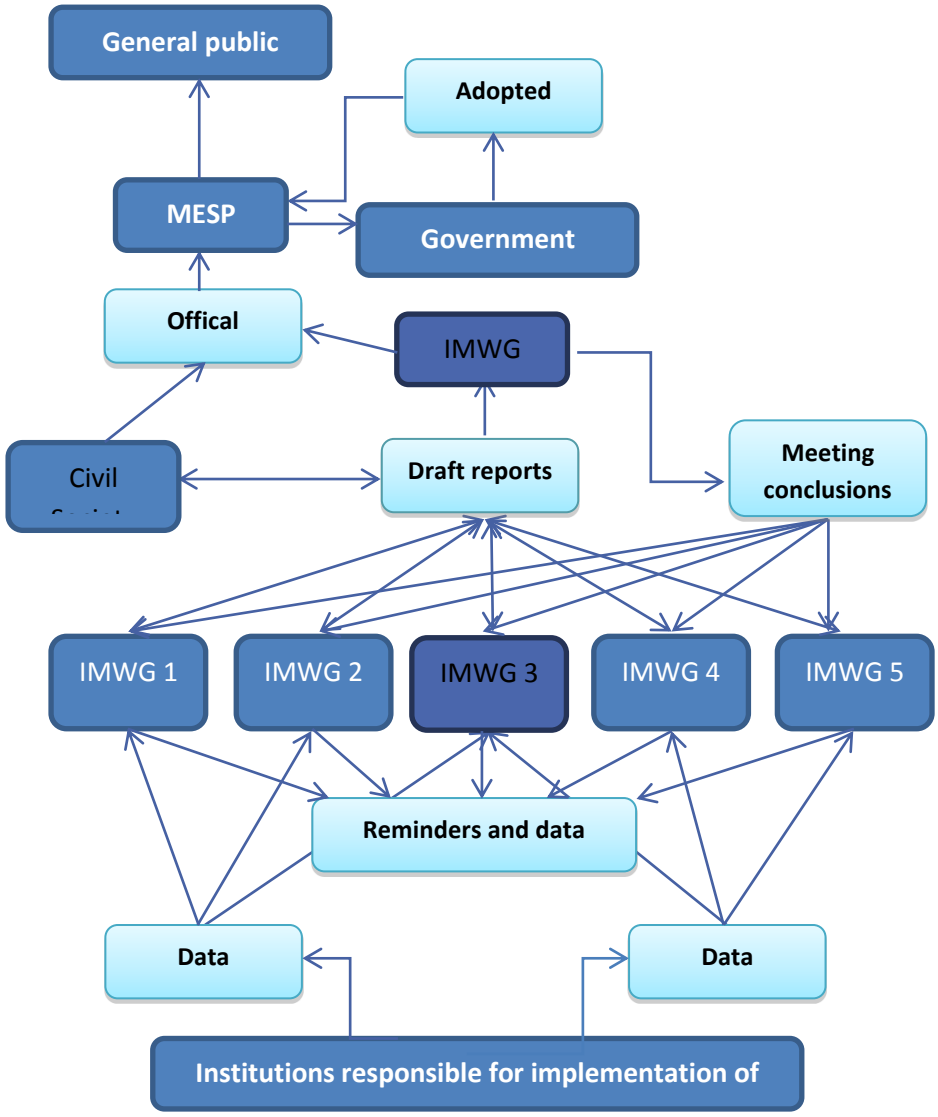
Table 2 - Frequency of monitoring reports

Action	Responsible Institutions	Deadline
Meeting of of Inter-Ministerial Working Group IMWG	MESP/IMWG	**2019 (II quarter)**
Reminder to responsible institutions for gathering information / data	IMWG sub/groups	**2019 (III quarter)**
Annual internal report	IMWG sub/groups	**2020 (II quarter)**
Meeting of IMWG	MESP/IMWG	**2020 (III quarter)**
Public consultation on draft report	MESP/IMWG	**2020 (IV quarter)**
Adoption of the 1st Report on implementation of CCS	Government	**2020 (IV quarter)**
Meeting of IMWG	MESP/IMWG	**2021 (I quarter)**
Reminder to responsible institutions	IMWG sub/groups	**2021 (I quarter)**
Annual internal report	IMWG sub/groups	**2021 (II quarter)**
Meeting of IMWG	MESP/IMWG	**2021 (II quarter)**
Public consultation on draft report	MESP/IMWG	**2021 (III quarter)**
Adoption of the final Report on implementation of CCS	Government	**2021 (IV quarter)**
Meeting of IMWG	MESP/IMWG	**2022 (I quarter)**
Reminder to responsible institutions	IMWG sub/groups	**2022 (II quarter)**
Revision of the AP if necessary	IMWG/IMWG subgroups	**2022 (III quarter)**
Public consultation on revised AP	MESP/IMWG	**2022 (II quarter)**
Adoption of the revised AP	Government	**2022 (IV quarter)**

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

Meeting of IMWG	MESP/IMWG	**2023 (I quarter)**
Reminder to responsible institutions Request for information/data collection	IMWG sub/groups	**2023 (II quarter)**
Annual internal report	IMWG sub/groups	**2023 (II quarter)**
Public consultation on Draft Final report	MESP/IMWG	**2023 (IV quarter)**
Adoption of the Final report on implementation of CCS (eventual adoption of the new CCS)	Government	**2023 (IV quarter)**

Data Flow



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The method of data management and the assessment of the implementation of IAS / PV are presented in Appendix 6 to this document.

CHAPTER VII

ACTION PLAN FOR CLIMATE CHANGE

The Climate Change Action Plan (CCAP) for the implementation of the Climate Change Strategy, 2019-2021, presents detailed activities for the implementation of the measures provided for in the Climate Change Strategy of the Republic of Kosovo 2019-2028.

The Climate Change Action Plan 2019-2021 presents a list of 11 specific objectives and 28 activities expected to be undertaken to reduce greenhouse gases and adapt to climate change by 2021.

Key projects that are envisaged to be developed during this period are considered: Drafting the Law on Climate Change; Development of the national greenhouse gas monitoring and reporting system in accordance with EU Regulation no. 525/2013 art. 5, 7, 12 on the monitoring mechanism and reporting; Preventing / reducing lynx self-sufficiency in coal mines in Kosovo through technical measures; Feasibility Study for Possibility Analysis using solid non-hazardous waste as alternative fuel in industry; Sustainable mobility planning and its promotion to the most populated centers of the Republic of Kosovo; Development of innovative building standards (eg leak surfaces, green roofs, etc.); Planning the terrain to improve the water balance; Establishment of Eco fond; Organizing public health programs to address health risks from climate change impacts as well as a number of projects that will contribute to reducing greenhouse gases and creating conditions for adapting to climate change.

The cost for disbursement of all activities foreseen for the period until 2019-2021 is 2,877,600.00 EURO.

Much of this amount is covered by BRK, while the rest of the Municipalities and KEK and eventually donations.

COST ESTIMATED FOR IMPLEMENTATION OF PES 2019-2021

The estimated cost for achieving the strategic objectives for the period 2019-2021, it is presented in the table below and include all institutions which through financial investments participate in the implementation of activities foreseen in the 2019-2021 APCC.

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The foreseen investments will mainly be from the BRK, while some of the municipalities and KEK will also be left the opportunity for possible donations.

For each Strategic Objective, respectively for each activity, are presented the costs and institutions that invest and have calculated the cost for the implementation of each strategic objective.

The total value foreseen for investments under the APCC 2019-2021 amounts to 2,877,600 EURO.

Strategic objectives	Specific objectives	BRK Euro	Municip ality	EC	WB	SIDA	Austrian Governme nt	KEK	
Objective 1	Specific objective 1	22,000							
	Specific objective 2	24,000							
Subtotal		**46,000**							
Objective 2	Specific objective 1	112,100						50,000	
	Specific objective 2	17,000	8,000						
Subtotal		**129,100**	**8.000.00**					**50,000**	**187,100**
Objective 3	Specific objective 1	1,498,0 00							
	Specific objective 2	24,000							
Subtotal		**1,522,0 00**							**1,522,000**
Objective 4	Specific objective 1	690,000							
	Specific objective 2	110,000							
Subtotal		**800,000**							**800,000**
Objective 5	Specific objective 1	259,000							
	Specific objective 2	4,500							
	Specific objective 3	15.000							
Subtotal		**278,500**							**278,500**
TOTAL INVESTMENT IN APCC 2,877,600 EURO									

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CONCLUSION

Action Plan on Climate Change, provides a series of measures proposed by the actions which have emerged / projects for the realization of which involved various stakeholders, including the public, who have been consulted.

Measures respectively actions specified measures will be implemented in partnership with key stakeholders.

Based on professional judgment, it is estimated that some of these more ambitious measures, planned, will not be easily fulfilled in the foreseeable future. The reason is that "**The financial resources for the implementation of medium and long-term measures of Climate Change Strategy will be provided when financial conditions are created after 2019 and will be scheduled based on the Medium-Term Expenditure Framework under the regular budget process."**

However, based on the fact that some of the actions respectively projects are being implemented are providing funds and projects can be implemented with existing capacities or providing donors considered that the actions identified in this document may begin to be implemented even before 2019/ 2021.

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

ACTION PLAN ON CRIME CHANGES STRATEGY

2019-2021

MATRIX

Strategic Objective #1: Developing Kosovo's capacity to meet its future obligations under the UNFCCC Convention and the EU.						
Specific Objective 1	**Indicator /s for measuring the achievement of the target**			**Basis 2015**	**Aim 2021**	**Aim 2027**
To develop and implement policies for climate change	- Concept Paper on Climate Change adopted - Law on Climate Change adopted - A.I, for capture of carbon dioxide approved			**20%**	**50%**	**90%**
Activity	**Implementation deadline**	**Total cost€**	**Source of funding**	**Leading institution**	**Supporting institution**	**Product**
1. Drafting the Climate Change Document Concept	2019	7,000.00	The Budget of the Republic of Kosovo (BRK)	MESP		Climate Change Document Concept, adopted
2. Drafting the Law on Climate Change	2020-2021	8,000.00	BRK and eventual donor	MESP	Donor-ECT	The Law on Climate Change, adopted
3. Drafting of A.I for carbon capture	2019	7.000,00	BRK	MESP		A.I for carbon capture, adopted
Specific Objective 2	**Indicator /s for measuring the achievement of the target**			**Basis**	**Aim**	**Aim**
To create a framework for the establishment of the GS Inventory	A national functional system for regular estimation of anthropogenic greenhouse gas			**2009**	**2021**	**2024**

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System	emissions from sources: to support the assessment of policy impacts and measures to reduce GS emissions			10%	80%	100%
Activity	**Implementation deadline**	**Total cost€**	**Source of funding**	**Leading institution**	**Supporting institution**	**Product**
1. Development of the national greenhouse gas monitoring and reporting system in accordance with EU Regulation no. 525/2013 art. 5, 7, 12 on the monitoring mechanism and reporting	2019-2021	15.000.00	BRK and eventual donor	MESP	SAK	The national monitoring and reporting system for greenhouse gases and projections, created
2. Review of Administrative Instruction QRK- Nr. 01/2016 on the Greenhouse Gas Emission Monitoring Mechanism,	2020	7,000.00	BRK	MESP		Administrative Instruction for the Greenhouse Gas Emission Monitoring Mechanism, Revised and Approved
3. Improve exchange and use of information	2019-2020	2.000,00	BRK	MESP		Organizing a workshop to clarify the importance of exchanging data with relevant institutions
Strategic Objective #2: **Reducing greenhouse gas emissions**						
Specific Objective 1.	**Indicator / s for measuring the achievement of the target**			**Basis** 2018	**Aim** 2021	**Aim** 2027
Preventing/ Reducing Greenhouse Gas Emissions	Reduction of greenhouse gas emissions, based on the reference scenario			0%	18.2%	12,3%
Activity	**Imple**	**Total cost€**	**Source**	**Leading**	**Supporti**	**Product**

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

	mentation deadline		of funding	institution	ng institution	
1. Preventing / reducing lignite self-ignition in coal mines in Kosovo through technical measures (spraying with special substances that prevent self-ignition on the surface of the coal mine)	2021	50,000 – 100,000	KEK BRK	KEK supervision: MESP, respectively environmental inspectorate of MESP	MZHE	- Improving the quality of air, which is of particular importance to employees, but also to residents of surrounding settlements. - Reducing the losses of a certain amount of coal from self-ignition
2. Feasibility Study for Possibility Analysis using solid non-hazardous waste as alternative fuel in industry	2020 (Kvartali i IV)	62,100 €	BRK	MESP, MED, MF		Feasibility study conducted and compiled report

Specific Objective 2	**Indicator /s for measuring the achievement of the target**	**Basis 2017**	**Aim 2020**	**Aim 2027**
Sustainable Mobility Planning and Promotion in the Largest Populated Centers of the Republic of Kosovo	Sustainable Urban Mobility Plan, developed	**5%**	**30%**	**100%**

Activity	**Implementation deadline**	**Total cost€**	**Source of funding**	**Leading institution**	**Supporting institution**	**Product**
1. Increasing of the central and local human capacity capacities for Urban Sustainable Mobility Planning	2019	10,000.00	BRK Komunat	MESP Komunat	MI	Creating Capacities for Sustainable Urban Mobility Planning through the organization of workshops in all major cities of

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

						Kosovo
2. Development of Sustainable Urban Mobility / Pilot Project for the City of Pristina	2020	15,000.00	BRK Municipality of Pristina	Municipality of Pristina	MESP	- Reducing greenhouse gases - Increasing the quality of life and attractiveness in urban areas - Improving traffic safety

Strategic Objective #3: ***for adaption on climate change***
Development of mechanisms and improving current disaster risk mitigation measures, in the sectors of economic importance that are particularly vulnerable to climate change;

Specific Objective 1	**Indicator /s for measuring the achievement of the target**	**Basis** 2010	**Aim** 2021	**Aim** 2027
Establishing mechanisms to reduce risk from disasters, for sectors that are vulnerable to climate change	- Reduction of uncontrolled extension of settlements - Reduction / stoppage of construction in endangered areas. - Reducing flood threats to the maximum extent possible.	0 0 0	30% 20% 30%	50% 50% 60%

Activity	**Implementation deadline**	**Total cost€**	**Source of funding**	**Leading institution**	**Supporting institution**	**Product**
1. Restriction of settlements / construction in hazardous areas	2019-2021	10,000.00	BRK	Government, MESP, MIA; MAFRD KFA MF	Advisory Services and Municipalities	Implementation of Law no. 04 / L-040 on Land Regulation which regulates rights and obligations related to construction land will reduce construction in endangered areas
2. Regulation of Sitnica river bed	2019-2021	1.2-1.7 milion	BRK and eventua	MESP	Responsible Group	Reducing flood threats to the maximum

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

			l donor			possible extent.
3. Promotion of ecological construction (eg vertical grinding, green roofs, etc.)	2019-2021	10,000.00	BRK	MESP	Municipalities	Organize two campaigns to promote the population for ecological construction
4. Field planning to improve the water balance (eg. change in land use)	2019-2021	278,000.00	BRK	Government, MESP, MAFRD KFA	Advisory Services / MEST, as well as Municipalities	- Protection of natural landscapes -Saving of the forest area - Reduction of illegal cutting

Specific Objective 2	**Indicator / s for measuring the achievement of the target**	**Basis** 2015	**Aim** 2021	**Aim** 2027
Preparation of Climate Packages	The Law on Eco-fond, where climate taxes are also set is approved	0	50%	100%

Activity	**Implementation deadline**	**Total cost€**	**Source of funding**	**Leading institution**	**Supporting institution**	**Product**
1. Develop a study on possible climate incentives - in the form of taxes and tariffs, taking into account international practices and local economic circumstances	2020-2021	7,000.00	BRK	MESP	MF	Developed study
2. Drafting the Law on Eco-fond	2019-2020	7,000.00	BRK	MESP, MF	Government	Approval of the Law on Ekofond
3. Establishment of the Eco-fond	2020-2021	10.000.00	BRK	Government, MESP	MF	Eco-fond established

Strategic Objective #4 To increase capacities of adaptation of natural systems

Specific Objective 1	**Indicator / s for measuring the achievement of the target**	**Basis** 2018	**Aim** 2021	**Aim** 2027

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

Improving the water balance through landscape improvement measures	- Afforestation and reforestation of degraded areas around river banks (28%) - Study on the areas designated for species migration corridors			0%	28%	90%
Activity	**Implementation deadline**	**Total cost €**	**Source of funding**	**Leading institution**	**Supporting institution**	**Product**
1. Planting trees/ reforestation, as flood prevention measure around river banks	2019-2021	290,000.00	BRK	MESP	Non-governmental organizations Active donors in Kosovo and other stakeholders.	Afforestation of 140km, or 28% of the length of rivers flooded (491km of rivers are at risk of flooding)
2. Prepare a study for determining ecological corridors to assist species migration	2020-2024	400,000.00	BRK	MESP	Municipalities Non-governmental organizations Active donors in Kosovo and other stakeholders.	- Creating security conditions for the movement of habitats residents from one country to another -Maintaining and preserving biodiversity of species - Reducing the impact of climate change on biodiversity,
Specific Objective 2	**Indicator / s for measuring the achievement of the target**			**Basis 2018**	**Aim 2021**	**Aim 2027**
Create better microclimatic conditions and more resistant landscapes to	- Identification of system shortage deficiencies - Creating corridors through planting trees			0	1	3

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

enable migratory species in more favorable habitats						
Activity	**Implementation deadline**	**Total cost€**	**Source of funding**	**Leading institution**	**Supporting institution**	**Product**
1. Analysis of the deficiencies of the protected area system, in terms of representative coverage of habitats and species; - Mountains of Nemuna (Albanian Alps); - Shala of Bajgora; - Anamorava; - Sharr Mountains; and - Drenica Region	2020-2021	10,000.00	BRK	MESP	Municipalities Non-governmental organizations Active donors in Kosovo and other stakeholders.	- 5 analyzed drafted
1. Creating different corridors (through tree planting) in order to reduce the impact of heat waves and maintain humidity in the habitat.	2020-2021 Faza e pare	100,000.00	BRK	MESP	Municipalities Non-governmental organizations Active donors in Kosovo and other stakeholders.	- Creating the best microclimatic conditions for the population to cope with the heat waves.
Strategic Objective #5: Capacity building of central and local stakeholders, stakeholders and stakeholders to integrate climate change issues and adaptation to development processes.						
Specific Objective 1	**Indicator / s for measuring the achievement of the target**			**Basis** 2018	**Aim** 2021	**Aim** 2027
Capacity building for production of information,	- Training on SIG training (staff of MESP/ KEPA); - Realization of training on risk			0	6	6

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

information use and communication	assessment and management - the willingness to face global and regional concerns, including weather, climate and water impact, disaster prevention and mitigation, climate change and human resource management.					
Activity	**Implementation deadline**	**Total cost€**	**Source of funding**	**Leading institution**	**Supporting institution**	**Product**
1. Training for SIG for mapping vulnerable areas	2019-2020	40,000.00	BRK	MESP, MPB	Active donors in Kosovo and other stakeholders.	Organize three trainings for mapping the endangered areas
2. Training on risk assessment and management	2019-2021	20,000.00	BRK	MESP, MPB		Organize three risk assessment and risk management training, to prepare disaster protection plans caused by climate change. Staff of MESP, MIA / MEA and MoH (from each institution of 3 persons) and also staff from the Faculty of Mechanical and Engineering Engagement of Mitrovica.
The modernization of the hydrometerology sector, with the advancement of the system of forecasting and disasters early warning	2019-2021	199,000.00 (faza e parë)	BRK	MESP	Active donors in Kosovo and other stakeholders	Improvement of operation and maintenance of all installed instruments (monitoring of water resources - groundwater and surface, and

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

						network for other climatic parameters (stations for temperature monitoring, precipitation, evaporation, condensation, solar radiation etc.)
Specific Objective 2	**Indicator / s for measuring the achievement of the target**			**Basis** 2018	**Aim** 2021	**Aim** 2027
Development of awareness programs on climate change	- Realization of two round tables, Forum and publication of a leaflet			0	3	6
Activity	**Implementation deadline**	**Total cost€**	**Source of funding**	**Leading institution**	**Supporting institution**	**Product**
1. Organize tables about the impact of climate change on ecosystem and health	2019-2020	1,500.00	BRK	MESP, MIA	Active donors in Kosovo and other stakeholders	two round tables organized
2. Water conservation campaign and harvesting / preparation of promotional materials	2019-2020	3,000.00	BRK	MESP, MPB	Active donors in Kosovo and other stakeholders	Conducted campaign and dissemination of leaflets for information and awareness of the population
Specific Objective 3	**Indicator / s for measuring the achievement of the target**			**Basis** 2018	**Aim** 2021	**Aim** 2027
Avoiding potential climate impacts on health	Strengthening health systems as the most priority challenge of adapting to climate change			0	2	4
Activity	**Implementation deadline**	**Total cost€**	**Source of funding**	**Leading institution**	**Supporting institution**	**Product**
1. Organization of public health programs to address health risks	2020	10,000.00	BRK	MH/ KPHI	MESP Active donors	Awareness-raising program for wider

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

from the impact of climate change					in Kosovo and other stakehol ders	involvement of the health sector in adaptation programs to ensure a successful response to epidemics emerging as a result of climate change
2. Krijimi i sistemit të paralajmërimit për valët e të nxehtit dhe rreziqet/ pasojat në shëndet	2019	5,000.00	BRK	MH/ KPHI	MESP Active donors in Kosovo and other stakehol ders	Designed system to alert the population to protective measures in hot waves (high tempratures).

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

ANNEX 1

International position of Kosovo

Kosovo is a developing country and an EU accession country. The important circumstances taken into account in Kosovo are amongst others the following:

- Kosovo is not yet a party to the UN Framework Convention on Climate change (UNFCCC)[15], however under its classification of countries it would be considered as a developing country (non-Annex I).[16]
- Kosovo aims at membership in EU, which entails transposing and implementing EU legislation and gradually moving from developing to a developed country status under the UNFCCC
- Being a new country, the capacity and track record in dealing with climate change are very limited due to other priorities in the recent years.
- The information on greenhouse gas (GHG) emissions and especially projections is still insufficient.[17]
- By now, a number of strategic documents and policies are developed and approved, but it remains to be implemented. In this context an overarching document is needed to pull together all the activities related to climate change and set the right priorities.

In the context of what was mentioned above, the key challenge and opportunity is to move towards a low carbon economy by reducing GHG emissions while achieving the objectives of rapidly improving the economic situation and social cohesion and receiving international support. This will require leapfrogging from the present situation to sustainable patterns of production, consumption and lifestyle so that Kosovo as future EU member contributes to European competitiveness and cohesion in a long-term.

As a basic principle of the present Low Emission Development component the Precautionary Principle of the UNFCCC (Article 3.3 UNFCCC) is used which states:

"The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects. Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing such measures, taking into account that policies and measures to deal with climate change should be cost-effective so as to ensure global

[15] UNSCR 1244 and the ICJ Opinion on the Kosovo Declaration of Independence

[16] According to UNFCCC Decision 1/CP.17 it is expected that the new UNFCCC agreement to be agreed by 2015 will cover all the countries with mitigation obligations after 2020

[17] Initial GHG inventory system of Kosovo was provided by the project "Transfer of Czech Experience: Developing Kosovo Greenhouse Gas (GHG) Inventory Management System" funded by UNDP. Because of the lack of separate historic statistical data, the global emission prediction models still consider Kosovo as part of a group together with Serbia and Montenegro.

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

benefits at the lowest possible cost. To achieve this, such policies and measures should take into account different socio-economic contexts, be comprehensive, cover all relevant sources, sinks and reservoirs of greenhouse gases and adaptation, and comprise all economic sectors. Efforts to address climate change may be carried out cooperatively by interested Parties."

This Strategy is an initial step in the process of policy with information on adaptive management. It is also an opportunity to look for appropriate mitigation measures which will boost development. Low Emission Development likely would send in lower emissions of greenhouse gases than in a business as usual scenario. This component will help to:

- propose priority mitigation solutions, which provide economic opportunities;
- decision-making on future commitments, related to reducing the amount of emissions;
- identify the barriers for economic development with low carbon emissions;
- strengthening and supporting existing projects/investments, attracting additional international support;

The UN Convention on Climate Change and Kyoto Protocol

The United Nations Framework Convention on Climate Change (UNFCCC)[18] was adopted on May 9, 1992 at the UN Conference on Environment and Sustainable Development[19] in Rio de Janeiro as a response of the international community to the global climate change phenomenon caused by the increased concentrations of greenhouse gases (GHG) in the atmosphere. The overall objective of the UNFCCC is aimed at stabilizing GHG concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. To-date, 196 countries are Parties to the Convention.

At the third Conference of the Parties, within the UNFCCC (Kyoto, 1997) adopted the Kyoto Protocol (KP), whereby industrialized countries and economies in transition included in Annex I to the Convention are committed to reduce the their total direct emissions of greenhouse gases by at least 5% from 1990 levels, for a five-year period 2008-2012 (the first commitment period). At the end of the first commitment period, in Doha in 2012, it adopted an amendment to extend the Protocol by 2020 (second commitment period from 2013 to 2020). In this amendment, the EU committed to reduce emissions by 20% during 2020, compared to the base year.

2.1.4. Climate action in non-Annex I Parties

[18] http://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/conveng.pdf
[19] http://www.un.org/geninfo/bp/enviro.html
http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

In the Bali Action Plan adopted at COP 13 (2007)[20], developing countries agreed for the first time to design and implement Nationally Appropriate Mitigation Actions (NAMAs)[21] in the context of sustainable development, supported and enabled by technology, financing and capacity building.

The 15th Conference of the Parties held in Copenhagen in December 2009, has taken note of the Copenhagen Accord (CA)[22] - a political declaration which agrees to limit climate change to not more than 2°C above preindustrial levels in the context of equity and sustainable development and reaffirms the developmental aspects of climate change, including low-emission development strategies.

The 16th Conference of the Parties held in Cancun in December 2010 adopted the Cancun Agreement[23], which encourages governments to prepare low-carbon development strategies in the context of sustainable development and also developing countries to undertake NAMAs in the context of sustainable development. The Cancun Agreement *"realizes that addressing climate change requires a paradigm shift towards building a low-carbon society that offers substantial opportunities and ensures continued high growth and sustainable development".*

The Copenhagen Accord foresees that both developed and developing countries will implement mitigation actions. It further envisages that developing countries will prepare Low Emission Development Component (LEDC) as plans for sharing their economic development and emission growth. Developing countries will also implement Nationally Appropriate Mitigation Actions.

In addition to setting overall vision and strategic goals of transition towards low-emission, sustainable, development, a Low Emission Development Component should contain a concrete set of measures leading to GHG emission reduction, quantification of the corresponding emission reduction for each measure and the financial requirements to implement them. For non-Annex I Parties, the set of measures can be expressed as Nationally Appropriate Mitigation Actions (NAMAs). Finally, a Low Emission Development Component should outline the approach to implementation, determining concrete steps and timelines, as well as the provisions for monitoring, measurement, reporting and verification of results achieved and a mechanism for further improvement based on the experience in the implementation.

Nationally Appropriate Mitigation Actions (NAMAs), the appropriate form of mitigation action by developing countries, may in principle include a wide range of different approaches to

[20] http://unfccc.int/resource/docs/2007/cop13/eng/06a01.pdf
[21] http://unfccc.int/focus/mitigation/items/7172.php
[22] https://unfccc.int/meetings/copenhagen_dec_2009/items/5262.php
[23] https://unfccc.int/meetings/cancun_nov_2010/items/6005.php
http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

mitigation actions with international support or domestically implemented, such as implementation of policies, programmes, individual projects or even implementing specific changes in the national economies to reduce emissions of greenhouse gases. There are two main types of NAMAs: (i) unilateral Nationally Appropriate Mitigation Actions: Nationally Appropriate Mitigation Actions undertaken by developing countries on their own (ii) supported Nationally Appropriate Mitigation Actions in developing countries, supported by finance, technology and capacity building from Annex I countries.

According to the Copenhagen Accord, non-Annex I Parties will implement mitigation actions. Mitigation actions taken by non-Annex I Parties (unilateral NAMAs) will be subject to their domestic measurement, reporting and verification (MRV) and reported on every two years through the biennial update reports based on guidelines to be adopted by the Conference of the Parties (COP). Provisions have to be made for international consultations and analysis under clearly defined guidelines that will ensure that national sovereignty is respected.

Nationally Appropriate Mitigation Actions will be recorded in a registry[24] along with relevant technology, finance and capacity building support requested. They will be subject to international MRV procedures in accordance with guidelines adopted by the Conference of the Parties. A Guidance For Nationally Appropriate Mitigation Actions design (building on countries experience) was recently developed by UNFCCC, it can be found at (http://unfccc.int/files/cooperation_support/nama/application/pdf/guidance_for_nama_design_(2013)_final.pdf)

The 17th COP[25] was held in Durban, South Africa, in December 2011. The conference agreed that EU and some other countries would commit to a second Kyoto target period in the time frame between 2012 and 2020. After that, a new global agreement should get in force, applying to all countries of the world according to the principle of common but differentiated responsibility, to be prepared by 2015, and to take effect in 2020. There was also progress regarding the creation of a Green Climate Fund (GCF)[26] for which a management framework was adopted. By 2020 the fund is to distribute a part of the US$100 billion per year to the developing countries for their mitigation and adaptation actions.

At the 18th COP in Doha, Qatar, an agreement was reached to extend the duration of the Kyoto Protocol, with the second commitment period until 2020, and to work on the Durban Platform, meaning that a "a new protocol, legal instrument or agreed outcome with legal force" is to be

[24] http://unfccc.int/cooperation_support/nama/items/6945.php
[25] http://unfccc.int/key_steps/durban_outcomes/items/6825.php
[26] http://gcfund.net/home.html
http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

agreed by 2015 and enter into force in 2020. The Conference produced a package of documents collectively titled The Doha Climate Gateway[27] . The documents collectively contained:

- An eight year extension of the Kyoto Protocol until 2020.
- The capitalization of the Green Climate Fund is planned for mid-2014 and all the institutional structures for mitigation, adaptation, technology development and transfer, capacity building and MRV are in place working as planned.

The COP19 in Warsaw in 2013 adopted a decision agreeing on a timetable to facilitate the development of the new agreement; a request to all countries "to initiate domestic preparations for their intended national determined contributions", and a request to further elaborate elements for the 2015 agreement negotiating text starting in March 2014.

Latest global conference on climate change was held in Paris, in which case resulted in an agreement at the international level to address climate change "Paris Agreement" which was reached on 12 December 2015 between 196 leaders of the participating countries. In this agreement the spotlight was to keeping temperatures *below* 2 ° C and to continue efforts to restrict it to 1.5 ° C. Within the concept of emission and resource balancing, the agreement states that in the second half of the century to achieve balance/net zero. This means that the transition from traditional economies in economy with low carbon emissions should be an immediate priority.

Paris Agreement contains five main pillars which are elaborated through different items. The first pillar is the national planning of *mitigation measures* which addressed through: Article 4 (Mitigation), Article 5 (Forestry), and Article 6 (Mechanisms). The second pillar addresses the *issue of adaptation* - Article 7. In comparison with the previous agreements, the Paris Agreement gives importance to the issue of finance to enable implementation. The third pillar has to do with the *financial framework for climate change*: Article 9 (Finances), Article 10 (Technology), Article 11 (Capacity Building) and Article 6 (Mechanisms). Another important pillar is addressed by Article 13 (Transparency) and that has to do with *monitoring, reporting and verification of effective* results for greenhouse gas emissions. Finally, within the pillar fifth, for the implementation of the agreement, should have *effective institutions and high political attention*: Article 2 (Purpose), article 3 (National defined contributions), Article 14 (Supervision) and Article 15 (Compatible). Currently, the Working Group has been established which will address legal gaps of the agreement, will continue to ensure consensus on this agreement by supporting countries in developing the legal framework, policies and their implementation until the entry into force in 2020.

[27] http://unfccc.int/key_steps/doha_climate_gateway/items/7389.php
http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

Implications of EU Accession

The report of the European Commission for Kosovo 2015, in point 5.2.3 Environment and Climate Change estimated that Kosovo remains at an early stage of harmonization with the acquis in these areas, and lacks a systematic approach to strategic planning and climate change. Therefore this strategy will create a policy framework which will address the challenge of climate change that contributes to sustainable development.

Stabilization and Association Agreement (SAA) between the European Union and Kosovo signed on October 27, 2015 entered into force on 1 April 2016.

With the entry into force of the SAA, Kosovo has started the journey formal EU membership and now the Republic of Kosovo is part of the formal process of accession to the EU, the same as all the countries of the region, taking over obligations to reform the sectors within this agreement. Article 116 of this agreement is intended specifically to climate change, thus emphasizes that this cooperation is intended to assist Kosovo in the development of policies for climate change, respectively for mitigation and adaptation to them, taking into account other relevant policies where including sectors such as energy, transport, industry, agriculture, health, education, etc. This cooperation also will support the gradual alignment of Kosovo's legislation with the EU acquis on climate change, in particular for monitoring, reporting and verification of results effective for greenhouse gas emissions, and the inclusion of Kosovo in international mechanisms.

For the implementation of the SAA Republic of Kosovo has approved the National Program for the Implementation of the Stabilization and Association Agreement (NPISAA), in which case climate change are addressed under Chapter 27: Environment and climate change where short and medium term action which are in harmony with the strategy. Under Chapter 18: Statistics, one of the medium-term measures is the production of indicators for GHG emissions according to the methodology of Eurostat, the EU regulations and the UNFCCC. Therefore the monitoring of the implementation of the strategy will be part of the ongoing dialogue with the European Commission.

The strategy provides a general climate change roadmap for Kosovo to support the EU accession process leading to an "Annex I type" (developed countries) or similar regime sometime after 2020. Until that time, the Strategy should make efforts mainly through the mechanism of bilateral VDKZ to support sustainable development of Kosovo, maximizing the use of international support for financing, capacity building and transfer of technology. These financial mechanisms will only work well if climate change objectives and projects are well integrated into the national economic development policies and strategies, such as related to

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

poverty alleviation, energy, transport, industry, etc. The consideration of these assumptions in the strategy may also require dialogue with the EU Commission within the available frameworks.

EU climate and energy targets[28] were set by EU leaders in March 2007, when they committed Europe to become a highly energy-efficient, low carbon economy, and were enacted through the Climate and Energy package in 2009. The package is a set of binding legislation which aims to ensure the European Union meets its ambitious climate and energy targets for 2020. These targets, known as the "20-20-20" targets, set three key objectives for 2020:

- A 20% reduction in EU greenhouse gas emissions from 1990 levels;
- Raising the share of EU energy consumption produced from renewable resources to 20%;
- A 20% improvement in the EU's energy efficiency.

The 20-20-20 targets represent an integrated approach to climate and energy policy that aims to combat climate change, increase the EU's energy security and strengthen its competitiveness. They are also headline targets of the Europe 2020 strategy for smart, sustainable and inclusive growth. This reflects the recognition that tackling the climate and energy challenge contributes to the creation of jobs, the generation of "green" growth and a strengthening of Europe's competitiveness. It is estimated that meeting the 20% renewable energy target could have a net effect of creating around 417 000 additional jobs[29], while getting on track to achieve the 20% energy efficiency improvement in 2020 is forecast to boost net employment by some 400 000 jobs. The climate and energy package does not address the energy efficiency target directly. This is being done through the 2011 Energy Efficiency Plan and the Energy Efficiency Directive.

The EU emission reduction effort is composed of two main approaches:

- The EU emission trading scheme - **EU ETS**[30], where a target of 21% emission reduction by 2020 is set for the entire EU. The system includes large emitters: factories, power plants and other installations and works on the "cap and trade" principle. This means there is a "cap", or limit, on the total amount of certain greenhouse gases that can be emitted by the system. Within this cap, companies receive emission allowances which they can sell to or buy from one another as needed. The flexibility that "trading" brings ensures that emissions are cut where it costs least to do so.

The so-called **"Effort Sharing Decision"**[31] establishes annual binding greenhouse gas emission targets for Member States for the period 2013–2020. These targets concern the emissions from

[28] http://ec.europa.eu/clima/policies/package/
[29] http://ec.europa.eu/clima/policies/package/
[30] EU emissions trading system (EU ETS) Emissions Trading Directive 2003/87/EC and it's amendments http://ec.europa.eu/clima/publications/docs/factsheet_ets_en.pdf
[31] Effort Sharing Decision (ESD) Decision No 406/2009/EC http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0136:0148:EN:PDF http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

sectors not included in the EU ETS - such as transport, buildings, agriculture and waste. It is part of a package of policies and measures on climate change and energy that will help transform Europe into a low-carbon economy and increase its energy security. The combined target for all EU member states by 2020 is 10%, but individual targets vary from -20% to +20% depending on the national circumstances and the economic strength of individual countries. Some of the Member states can increase their emissions while the more advanced countries have to reduce more.

Assuming that the system remains the same, when Kosovo enters EU, its cap for ETS will be set based on historic emissions in the ETS sector and non-ETS reduction target will be set based on the applicable criteria including the level of overall development.

Under the Renewable Energy Directive[32], Member States have taken on binding national targets for raising the share of renewable energy in their energy consumption by 2020. These targets, which reflect Member States' different starting points and potential for increasing renewables production, range from 10% in Malta to 49% in Sweden. The national targets will enable the EU as a whole to reach its 20% renewable energy target for 2020 - more than double the 2010 level of 9.8% - as well as a 10% share of renewable energy in the transport sector. The targets will also help to cut greenhouse gas emissions and reduce the EU's dependence on imported energy.

Another element of the climate and energy package is a directive that includes a legal framework for the use of certain technologies in terms of environmental carbon capture and storage[33]. Carbon capture and storage involves capturing the carbon dioxide emitted by industrial processes and storing it in underground geological formations where it does not contribute to global warming. The directive covers all geological formations in the EU and lays down requirements which apply to the entire lifetime of storage sites.

Energy Community Treaty

For Kosovo, the key instrument and driver of energy and related environmental policy in the region is the Energy Community Treaty (EnCT) of the European Union and nine contracting parties from the South East Europe and Black Sea regions (Albania, Bosnia and Herzegovina, Croatia, Kosovo, Macedonia, Moldova, Montenegro, Serbia and Ukraine), established in 2005. Article 3 of the Treaty requires the contracting parties to implement the *Acquis Communautaire* on energy, environment, competition and renewables. More specifically, it sets out a timetable

[32] Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC Biofuels Directive
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=Oj:L:2009:140:0016:0062:en:PDF

[33] DIRECTIVE 2009/31/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 April 2009 on the geological storage of carbon dioxide
http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:140:0114:0135:EN:PDF

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

for the implementation of priority Directives, in this case for environment. The Environmental Impact Assessment (EIA) Directive and Article 4(2) of the Birds Directive were to be implemented by the entry into force of the Treaty; The Directive relating to a reduction in the sulphur content of certain liquid fuels by 31 December 2011; and the Large Combustion Plants (LCP) Directive is to be implemented by 31. December. 2017 and Directive of Industrial Emission until to 2028, the Directive for responsibility and the Environmental Strategic Assessment Directive.

Most Contracting Parties, including Kosovo[34], committed to an energy saving indicative target of 9% of the consumption between 2009 and 2018, through their National Energy Efficiency Action Plans. In 2012, the Ministerial Council of the Treaty agreed on the renewable energy targets for the parties (Kosovo shall increase the share of renewable energy sources from 19.9 to 25%)[35] and in October 2013 they agreed to introduce the obligation to implement the new EU Industrial Emissions Directive under the Treaty[36].

ANNAEX 2

INSTITUTIONAL CONSULTATIONS AND FRAMEWORK

The drafting of this document has followed the Governing Council, the Government and interested organizations.

They are held four workshops and many meetings of sub-working group, composed of members of the Ministry and institutions involved in this process.

The consultation process is initiated by presenting the draft document on the website of the Ministry and its distribution in institutions, whose representatives are part of drafting the document, including the organization of public debate. The document is completed, after reviewing the comments provided by stakeholders.

Local questionnaire survey

Questionnaire for adaptation measures in Kosovo which helped for assessing the current state of affairs on dealing with climate-related threats in Kosovo was prepared and disseminated to local and national level, including the Inter- Ministerial working group for the National Adaptation Component.

The questionnaire served as an instrument for the first participatory assessment of current and possible adaptation measures in Kosovo. Based on the results of 15 questionnaires at the local

[34] http://mzhe.rks-gov.net/repository/docs/Kosovo_Energy_Efficiency_Action_Plan_2010-2018.pdf
[35] http://www.energy-community.org/pls/portal/docs/1766219.PDF
[36] http://www.energy-community.org/pls/portal/docs/2388178.PDF
http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

level and voting rounds by 12 members of the Inter ministerial Working Group (IMWG) at the national level, a list with total of 74 possible adaptation measures with high or medium priority was presented (see chapter 5). Potential adaptation measures with low priority have not been included.

For identifying best practices and/or lessons learned the adaptation measures highlight municipalities where scores for implementation and/or planning are significantly higher than in other municipalities. Hence, since implementation or planning has occurred or is ongoing in these places they require specific attention to see whether obstacles and opportunities for adaptation, lessons learned or best practices can be identified and possibly up-scaled. A second selection took place in September 2013 based on multi-criteria analysis.

Roles and Responsibilities

With the provisions of the Law on Environmental Protection, Law on Air Pollution and relevant bylaws, the Ministry is responsible for the field of climate change.

MESP specific bodies, perform specific tasks set out in the Law on Environmental Protection, Law on Air Pollution and in other legal acts.

In this strategy are defined measures that represent an obligation for all sectors of the community and they are responsible to implement actions to achieve the objectives.

Implementations of the measures provided for actively contributing to reducing GHG emissions and prevent accidents that might occur from climate change through a combination of law enforcement, technical and educational reinforcement.

Ministry and its structures are responsible for implementing the legislation, control of greenhouse gas emissions by sources and prepare inventory of greenhouse gases.

Policy planning and control development significantly contributes to reducing greenhouse gas emissions, not only locally but also globally. The manner of planning and agreements play an important role in contributing to the reduction of greenhouse gas emissions and the action taken on climate change adaptation.

Energy efficiency is one of the most important tools to avoid climate change by reducing the use of fossil fuels. However, energy efficiency and demand management measures may also be addressed to:

Setting efficiency technologies with better energy.

Request for programs of energy efficiency.

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

Developers can build buildings "in addition to the future" against the changes envisaged in weather patterns (simulations) providing enduring features like orientation, insulation and windows are suitable for the climatic conditions expected;

Cities can reduce ambient temperatures and to build more efficient buildings with cool or green roofs.

Water efficiency programs can address the impacts of climate on water resources and reduced the energy use for water pumping and treatment.

Current institutional system was developed by the end of 2002. Basically, it consists of an institutional management distributed system.

Environmental management institutions apply the legislation in force in Kosovo and EU standards.

Environmental management system includes:

Assembly of Kosovo - Assembly is the legislative institution of the Republic of Kosovo directly elected by the citizens. Body that dealing with environmental issues is the Committee for Agriculture, Forestry, Rural Development, Environment and Spatial Planning;

Government of the Republic of Kosovo - The mandate of the Government is defined by the Constitution: Propose and implement internal and foreign policies of country, enabling economic development, propose to the Assembly draft laws and other acts, makes decisions and issues legal acts or regulations, necessary to implement the laws, proposes the budget of the Republic of Kosovo, guides and oversees the work of the administration bodies, guides the activities and the development of public services, proposes to the President of the Republic of Kosovo the appointment and dismissal of the heads of diplomatic missions in Kosovo, proposes amending the Constitution may refer constitutional questions to the Constitutional Court also carries other executive functions, which are not assigned to other central or local bodies;

Ministry of Environment and Spatial Planning - Ministry's mandate is defined by Regulation No. 02/2011 for fields of administrative responsibility of the Prime Minister's Office and Ministries. Has the following responsibility in relation to environmental protection:

- Develops and monitors the implementation of policies and programs concerning the identification and reduction of environmental pollution and climate change;
- Participate in the development of strategic documents;
- Coordinate activities to promote environmental policy and climate change
- Add norms and standards and issue guidelines in the field of environmental protection, while respecting international standards;

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

- Set norms and standards and issue guidelines in the field of environmental protection, while respecting international standards;
- Monitor the implementation of these standards, including inspection and other services, as needed;
- Manage the use and development of environmental infrastructure;
- Promotes community participation, initiatives and development activities;
- Develop policies, implement legislation and monitor activities for the protection of the environment and climate change, including water resources, air, soil and biodiversity;
- Promotes and participates in the development and implementation of public information campaigns and other promotional activities to increase public awareness and compliance with standards for environmental protection and climate change;
- Supervise and assess the state of the environment, particularly the impact of industrial activity, public services and economic activity;
- Develop policies for the management of water resources and monitor their implementation.

Under the MESP:

Department of Environmental Protection (DEP) - develop environmental policies, legislation and instruments for the implementation of these policies. These tasks achieved through four divisions: Division for Industrial Pollution Protection; Nature Protection Division; Division for Waste Management and Chemicals Administration and Division for Environmental Education and Awareness.

Kosovo Agency for Environmental Protection- provides relevant information to the administration, Assembly and Kosovo Government for implementation policies for environmental protection. Develop and coordinate unique information system for environmental protection related to the tracking system of the environmental situation in Kosovo and collect environmental data and prepare the GHG inventory;

Kosovo Hydro Meteorological Institute- Builds and maintains a network of hydrological and meteorological stations. Make measurements and observations of the elements and phenomena: hydrological, meteorological, bio meteorological and hydro meteorological measurements and observations of atmospheric electricity and air pollution, water pollution and rainfalls. Systematically monitor and assess the state of air quality, atmospheric precipitation, surface and ground water and soil, as well as the study and forecasting the meteorological conditions.

Municipalities- Municipalities adopt Environmental Local Action Plans (ELAP) and environmental protection programs, in accordance with EPS and Kosovo Environmental Action Plan in accordance with their specific interests. In drafting the ELAP and programs are encouraged to participate public, NGOs, professional organizations and the business community.

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

Municipalities report to the Ministry for the implementation of these plans and programs. To reduce negative impacts on the environment and in some cases to reduce costs, two or more municipalities may jointly develop and approve their plans and programs.

National Committee for Climate Change

The National Committee for Climate Change has the responsibility to follow up the implementation and enforcement of strategic documents and of the action plan for climate change in full compliance with the requirements of UNFCCC and Kyoto Protocol.

Main functions of the National Committee for Climate Change are following:
Coordinates all activities deriving from the UNFCCC and Kyoto Protocol,
Assures that the project having impact on the climate change are implemented in according to the national legislation and international agreements,
Drafts required documents for participation and for membership to the international conventions, protocols and membership related to the climate change,
Establishes and prepares the National Communication for the secretariat of the UNFCCC after ratification of Kyoto Protocol.

The National Committee for Climate Change has following composition:

Minister of Ministry of Environment and Spatial Planning (MESP) – Chair of the Committee
Minister of Ministry of Economic Development (MED) – member
Minister of Ministry of Agriculture, Forestry and Rural Development (MAFRD) - member
Minister of Ministry of Infrastructure (MI) – member
Minister of Ministry of Trade and Industry (MTI) – member
Minister of Ministry for European Integration (MEI) – member
Minister of Ministry of Local Government Administration (MLGA) - member

As part of the National Committee for Climate Change, it is established also the Technical Secretariat of the Committee, which prepares and facilitates the work of the Committee. The Technical secretariat is composed of following members:

Director of the Department of Environment Protection – Chair
Director of the Department of Water – Member
Director of the Department of Energy – Member
Director of the Department Road Infrastructure – Member
Director of the Department of Industry – Member
Director of the Department of Forestry – Member
Director of the Department of Agriculture Policy and Market – Member
Director of the Department of Sectorial Policy – Member
Director of the Hydro-meteorological Institute – Member
Representative from civil society – Member
Representative from University – Member

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

Representative from UNDP – Member

ANNEX 3

Socio-economic situation

Kosovo is a landlocked country, situated in the center of the Balkan Peninsula, bordering Serbia, Macedonia (FYR), Albania and Montenegro. Kosovo's territory is 10,908 km2. Kosovo has continental climate with warm summers and cold winters. Kosovo is populated by about 193 persons per km2, with 38 municipalities.

Population estimate for 2012 is 1,815,606. The ethnic composition is 90 % Albanians, 5 % Serbs, 2 % Bosnians, Gorans, 2 % Roma and 1 % Turks. Kosovo currently has the youngest population in Europe, with average age of 29.5 years and fertility estimated at 2.4 children per woman. There has been a major internal migration of the Kosovo population, mainly from rural toward urban areas, since conflict cessation in 1999, but still 58 % of the population lives in rural areas and 42 % in urban centers. Prishtina is the region with the highest rate of migration.

It is estimated that over 500,000 people are living abroad. Kosovar diaspora is an important factor of economic development of Kosovo. However, this potential is still not sufficiently utilized and channeled into productive activities that will have economic effects chain. In addition to addressing the needs and priorities of Diaspora of the Republic of Kosovo, Diaspora Strategy is being developed and supported in accordance with the applicable normative acts of the Republic of Kosovo.

Kosovo's economy is new and dynamic, using Euro as the currency and with Gross Domestic Product (GDP) in 2014 being € 4.916 billion, per capita GDP € 3,084. Based on the data of Gross Domestic Product for 2014, taking into account developments in the main macroeconomic indicators, it notes that real economic growth in 2014 compared to 2013 was 1.2%, while GDP at Current Prices in 2014 was 5.567 mil. €. In lesser extent for 2014 to 0.8% real increase in economic activity were agriculture, hunting, forestry and fishing.

Since 1999 Kosovo has been transformed from a centralist and controlled economy, to a free-market economy. Now the goal is to increase competition within the economy, while increasing export capacity to reduce Kosovo's trade deficit. As well as being a CEFTA member, in June 2009 Kosovo became a member of the IMF (International Monetary Fund) and the WB (World Bank), and it aspires to other strong economic and financial mechanisms such as EBRD, the World Trade Organization (WTO) etc.

From 03.11.2010 Kosovo is part of the Global Environment Facility (GEF) which was established on the eve of the World Summit of Rio 1992, as support to help countries for the treatment of

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

the most pressing environmental problems of our planet. From the December 2015, the Ministry is part of a Green Climate Fund. Through this fund given the opportunity for financial support, that will assist in the implementation of plans.

Policies for mitigating the effects from climate change

The responsible authority for environment and climate change policy is the Ministry of Environment and Spatial Planning (MESP).

Kosovo has no register of sources and emissions of GHGs yet and it also has not identified the base year from which GHG emissions will be estimated. The Greenhouse Gas Inventories for 2008-2013 are one of the first initiatives in Kosovo contributing to the global efforts to minimize the human impact on the climate change. This project continues with further capacity building activities on GHG monitoring and reporting. Kosovo has not yet started to submit National Communications to the Secretariat in the UNFCCC.

National Strategy on Climate Change is one of the four documents environmental policies described below.

Kosovo Strategy for Environmental Protection was developed for the period 2005-2015 and includes: climate change, acidification, biodiversity, water, urban environment and waste management.

The priorities of this Strategy are:

- Completion of environmental legislation in harmony within the EU acquis;
- Gradual fulfillment of EU standards;
- Efficient implementation and integration of the environmental legislation and methodologies into all sectors;
- Establishment and further development of competent institutions including capacity building;
- Establishment of eco fund;
- Establishment and functioning of environmental monitoring network in Kosovo;
- Rational use of natural resources;
- Development of long term education programs;
- Public awareness campaigns and projects;
- Support the concept of import of clean technologies in Kosovo;
- Application of the concept of energy efficiency in all sectors of energy users.

The Kosovo Environmental Action Plan 2006-2010, as part of the Governmental Program, was the first document developed in Kosovo aiming at gradual improvement of the environmental situation, a framework where all environment related priority activities of respective institutions will be based on.

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

The Plan specifically foresees the following actions to mainstreaming the environmental sector:

- Completing legislation and its harmonization with EU legislation
- Drafting of Agriculture Action Plan
- Rehabilitation of irrigation networks
- Setting grounds for development of eco-tourism
- Introduction of incentive instruments for applying alternative methods of agricultural products and compost
- Ensuring suitable conditions when importing input for agriculture and placement of food products
- Maintaining traditional farming methods
- Development and implementation of training programs for farmers tackling the issues of good agricultural practices
- Developing agro-environmental indicators
- Establishment of a modern certification system for organic products

ANNEX 4

According to the baseline scenario (Table 3), in 2022 the demand for electricity will increase by 23.4% compared with 2015

BASE SCENARIO OF ENERGY DEMAND [GWh]	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Household consumers	2.536	2.643	2.706	2.790	2.852	2954	3.053	3.129	32.63	3.355	3.477	3.571	3.676	3.769
Commercial consumers	701	745	798	789	807	837	873	899	942	972	1012	1042	1084	1123
Total industrial consumers	1.210	1.296	1.322	1.237	1.265	1.312	1.370	1.410	1.477	1.525	1.586	1.634	1.699	1.761
Losses in KOSTT	175	131	115	128	126	129	132	133	136	138	140	142	144	146
Technical losses in OSSH	799	780	785	797	770	734	749	741	734	726	719	712	705	698
Gross Electricity	5.421	5.594	5.725	5.742	5.820	5.966	6.176	6.312	6.551	6.716	6.934	7.100	7.307	7.496

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

Consumption of Kosovo													

Table 1. Base Scenario, gross electricity demand, by category of consumption (Energy balance 2012-2022).[37]

Besides the generation of electricity, distribution and supply are also facing with technical problems and loss of electricity. In the recent years, significant investments were made in the distribution system and have influenced the diminishment of losses, from 42.80% in 2009 to 38.15% in 2011[38]. Even with these investments, the qualitative and safe supply of electricity to consumers is yet to be achieved.

In Kosovo, from the total amount of GHG (ca. 10,5 million ton CO_2 eq.) emitted by anthropogenic activities in 2009, electricity production from coal accounts for ca. 6.9 million ton of CO2 eq. (not counting the gases released by self-combustion of coal in mines - the amount of which is not known). Forecasts of electricity production show that by 2022 the production of electric power from coal will increase to ca. 33% in comparison with 2012. Although after 2017 new TPP will start with higher efficiency, therefore, it is expected that CO2 emissions will continue to increase (figure 1.).

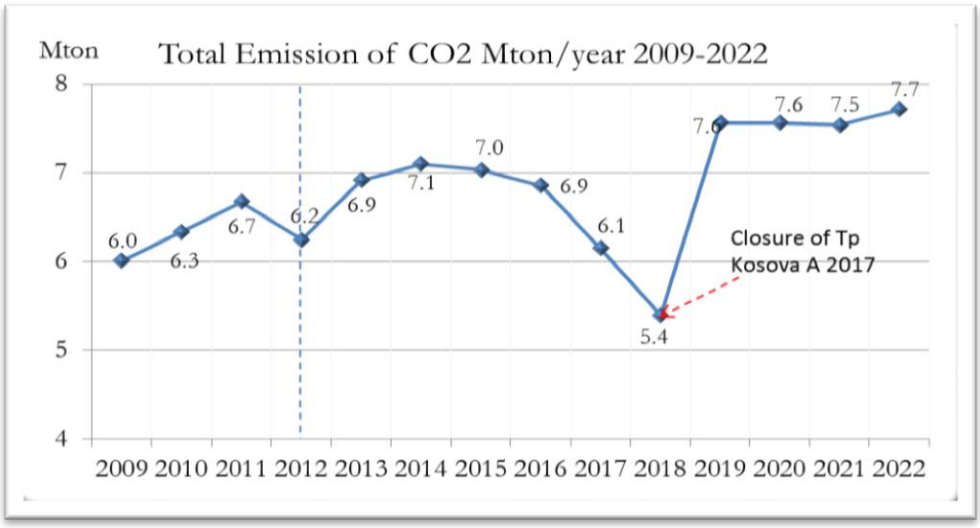

Figure 6: Past and expected emissions from Kosovo thermal power plants

Considering all the circumstances that characterize the country, but on top of it the low level of economic, social and technological development, lack of electricity power, increasing electricity demand, reduction of emissions bellow current level for many years will be not realistic. What

[37] http://mzhe.rks-gov.net/repository/docs/Balanca_afatagjate_2013_-2022_-_eng_finall.pdf
[38] *Source, 2011 Annual Report, ERO*
http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

it seems realistic is through to achieve a deviation from the business as usual scenario (slow down growth of emissions) with various mitigation measures. More could be achieved with additional assistance by the international community.

Energy Strategy pays special attention to compliance with European Union Acquis, the provisions of which are compulsory for Kosovo, as it has taken over these responsibilities through its membership to the Energy Community Treaty. The Strategy aims to stimulate rational use of energy and increased energy efficiency as well as utilization of renewable energy resources and introduction of new technologies for implementing the environmental standards as set forth by law.

In the medium term, lignite will remain the main energy source for production of electricity in Kosovo. Lignite reserves in Kosovo are located in two large basins called 'Kosova' and 'Dukagjini'. Geological lignite reserves are assessed to amount to 12.5 billion tons (including all categories of reserves). Table 4 presents a summary on lignite reserves by location[39].

Basin	Surface [km2]	Reserves [Million Ton]			
		Explored		Exploitable	
		t	tce	t	tce
Kosova	274	10,091	2,957	8,772	2,521
Dukagjini	49	2,244.8	782	2,047.7	464
Other	5.1	106,6	22	73.2	19
Total		12,442.4	3,761	10,892.9	3,004

Table 6: Lignite reserves by location

District heating systems exist only in Prishtina, Gjakova and Mitrovica. These systems meet only 3% of heating demand. Existing heating technologies are based on residual fuel oil and diesel. This sector also is challenged by old technology, negative environmental impacts and a low level of billing and collection of the energy supplied. Need for developing the heating market was included in the results of the Heating Market Study (ELC, World Bank Study, 2007). Development of such market will be incentivized by the Government. The Law on Public Enterprises has placed these enterprises under municipal administration. A very important development in the heating sector has been the beginning of operation of the cogeneration

[39] Inkos Institute –"Study on assessment of explorations and geological lignite reserves in Kosovo", Kosovo Basin, Prishtina 2007, page. 81; and Dukagjini, Drenica and other basins, Prishtina 2007, page 56 and page 24.
http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

project TPP Kosovo B - PE Termokos (2014/2015), which was developed through the WBIF, where the financial institution has been leading the German Development Bank (KfW). With this project Termokos will supply of thermal energy from TPP Kosova B with total nominal capacity of 140 MWT (2 x 70 MWt). Financing of this project was made possible by donations from the European Commission, the German Government, Sweden and Luxembourg, the Government of Kosovo and the Municipality of Prishtina. So from total value of the project 86.54% are donations and 13.46% loans on favorable terms.

The legislation on Energy defines the principles and general rules by which directed the activities in the energy sector in Kosovo, in order to guarantee the supply of safe, reliable and high quality power, to create conditions for a market open functional, transparent and competitive, promoting use more efficient energy, increase energy from renewable sources and cogeneration, environmental protection by energy activities and actions that create and on the basis of which apply energy policy and development planning in the energy sector.

Future demand for energy is supposed to be covered by domestic production and imports. In the following period, electricity will be provided from the power plant "Kosova A and Kosova B ', and then from the power plant" Kosova e Re ", which is projected to have a unit with an installed capacity of 500 MW and under planning will to enter the function of operation by the end of 2021/2022.

Also, in the long term, it provides for the development of new capacity from renewable energy sources.

Kosovo aims for EU integration as early as possible. In view of this, Kosovo is a signatory party to the Treaty for the establishment of the Energy Community (EnCT) of South-East Europe that entered into force in 1 July 2006. Within this context, the Government of Kosovo remains substantially committed to developing the energy sector in compliance with EnCT requirements. EnCT requires implementation of *Acquis Communautaire* of the EU from all contracting parties following a timetable which provides for implementation of required reforms. This will require also implementation of the objectives of the EU plan 20-20-20 for the energy sector requiring member countries that by 2020:

- Reduce GHG emissions by 20%,
- Increase renewable energy share of final energy consumption to 20%,and
- Improve energy efficiency by 20%.

In the framework of obligations within the Energy Community Treaty, Kosovo as a signatory, 2011 has approved the National Action Plan for Energy Efficiency (NAPEE) 2010 -2018[40] and is

[40] http://www.energy-community.org/pls/portal/docs/1280177.PDF
http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

also drafted in 2013, the National Action Plan for Renewable Energy (NAPRE) 2011-2020[41].The two plans set the targets for Kosovo in terms of energy efficiency and share of renewable energy sources by 2020:

- Improve energy efficiency by 9 %
- Increase the share of renewable energy sources to 25 % (aiming at 29,47%)

Kosovo is committed to achieving these goals while also complying with all relevant EU energy and environment directives, norms and standards and with the provisions of the Energy Community Treaty.

ANNEX 5

Water resources and adaptation to climate change Climate change

Development of environment impact assessment, feasibility studies analysing viability of water transfer options, shall precede the final establishment of appropriate infrastructure to transport water from one to the other river basin.

The western and southern parts of Kosovo, known as Dukagjini Plain, are richer in surface and groundwater resources. The northern and eastern parts of Kosovo, known as Kosovo Plain, have less water resources available. Yet, this area has the largest concentration of population and the most hot spots sites that causes extreme water pollution.

Main user categories of fresh water resources are: Drinking Water Supply for households, Water Supply for Industry and Energy (for hydro-power and for cooling power plants) and for Irrigation purposes. Based on the Annual Performance Report of Water Service Providers in Kosovo for the year 2012, the water industry in Kosovo is still weak; showing deficiencies in most of performance indicators such as service coverage, which is at the level of 78%.

River water quality in Kosovo is poor owing to the lack of wastewater treatment plants, disposal of wastes along / or near the river banks, poor or no maintenance of river beds. Usually the quality of rivers upstream represents a healthy aquatic habitat and meets the environmental standards. Some of the main rivers downstream of larger municipalities and industries are heavily polluted that the water cannot be used for water supply or for irrigation purposes. The main rivers in Kosovo belong to the pollution category 2 and 3.

The impact of climate change may further aggravate the quality of water courses, in particular during summer months when it is expected the variation in the precipitation pattern that will be reflected in lower river stream and by the increase of temperatures, while the sources of contamination remain constant. Pollution of surface and groundwater resources would have

[41] http://www.energy-community.org/pls/portal/docs/2570177.PDF
http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action

serious effect on people's health, it may hamper economic growth and can impact food sufficiency and security.

Most of rural and urban populations not having the sewage network are using septic tanks or discharge, on the individual base, the waste waters to nearby rivers or creeks. Lack of sewage network and lack of adequate treatment of waste waters is increasing additionally the stress on fresh water resources. Sewerage network, in overall, is assed to be in a very poor condition. Except the municipality of Skenderaj that has wastewater treatment plant, other urban centres and rural villages in Kosovo do not have yet wastewater treatment. As of 2013, works have started for Prizren WWTP. Also feasibility studies have been completed for Prishtina, Peja, Gjakova, Gjilan and for Ferizaj. Feasibility study is expected to be finalized during the cours of 2014. Most urban and industrial wastewater is discharged directly to the rivers without pre-treatment. Pollution with heavy metals and other toxic substances represents challenge and concern as regard to the quality of surface and ground-waters. State Strategy on Waters and the Law on Waters oblige the treatment of waste water and industrial water.

Pressures on natural water resources are being enhanced by human activities and increases in water demand in all sectors and pollution along the water courses. The temperature increase and decrease in rainfall patterns in the last decade will be directly reflected in river flow regimes and in the groundwater levels.

Based on above considerations, freshwater vulnerability assessment to identify potential risks, providing decision makers with an early warning signal about the need to monitor potential variation over time is crucial.

To adequately respond to the challenges of climate change, new strategic policy papers and action plans to integrate mitigation and adaptation measures shall be developed. Development of new policy papers and/ or amendment of existing policy framework shall be based on a comprehensive scientific research to evaluate potential climate change impacts on water resource. The following issues are recommended to be mainstreamed into the State Water Strategy and river basin management plans, under the legal framework for water resources management:

- Wastewater treatment, water reclamation and reuse, including incentive packages for water reclamation and reuse.
- Groundwater management, replenishment of groundwater aquifers, mandatory groundwater withdrawal restrictions and groundwater monitoring.
- Program for risk management, including flood protection and identification of the flood prone areas.
- Program for management for droughts, water allocation/ portioning and prioritizing the customer categories under the drought situations.
- Stimulating rainwater harvesting and incentive programmes for rainwater harvesting.

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Agriculture, forestry, biodiversity and land use planning

According to the survey on agricultural households in 2012 it is estimated that about 378,768 ha are total land and 277,364 ha (73%) are agricultural land. 41% of this area is used as arable land and 26.0% for meadows and pastures, while 5% of agricultural land - falling percentage - are left overburdened. The use of orchards has increased during the period 2009-2012 to 10.1%. Also, the areas used for agricultural crops, vineyards and greenhouses have increased significantly in recent years.

Livestock production has a high economic importance and is a profitable agricultural sector promoting also other agricultural sectors like plant production, processing industry etc. It is estimated that about 94,000 farms (52 % of the total farms) are active in livestock production. Most livestock production is done in an extensive way in rural households. Semi commercial and commercial farms have more intensive livestock production with higher quality animal breeds.

Agriculture used to account for 25% of GDP in the 1980s and early 1990s, reduced its share to about 14.1% of GDP in 2011. (Source: KAS data from 2011). Agriculture accounts for about 35% of total employment (Country Snapshot 2013 April WB report). The agricultural sector also accounts for 16% of total export value and remains an important economic sector.

As regards forestry, 44,7% (481.000 ha) of Kosovo's land area is covered by forests and forest land's, 62% of which are state-owned forests (295,200 ha) and 38% are private forests (180,800 ha) (Source: Strategy for Forest Development 2010-2020). The forest coverage in Kosovo is higher than in neighboring countries (Albania, 28%, 39% Macedonia, Montenegro and Serbia 40% 31%); however, the quality and productivity of the existing forests are a cause for concern. Especially in steep mountainous terrain there are alarming signals of desertification due to serious soil erosion (Source: Support for the implementation of the Forest Policy and Strategy in Kosovo GCP/KOS/005/FIN):

- 32,200 ha are considered as "no trees" forests;
- 171,200 ha are forests created through natural seeding, categorized as high forests (h> 16 m);
- 115,800 ha categorized as low forests (created by stems), which dominate the central part of Kosovo;
- 21,200 ha called low forests (low forests with the presence of trees);
- 2,200 ha are forests created through afforestation.
-

There are about 120,000 private forest owners in Kosovo, who manage their forests in the traditional coppice system and usually do not plant trees. They rely on natural seeding to regenerate their forests, which is said to regenerate abundantly, and practice replanting only in

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a few exceptional cases. It is estimated that the area that is replanted in private forests does not exceed 30 ha/yr entirely in Kosovo. The average size of a private forest estate is about 2 ha spread over several plots and usually complemented by pasture and agricultural land. The main purpose of keeping the forest areas for majority of private forest owners is production and selling of fuel wood to secure their living and occasionally protection of soil from erosion; only very few forest owners are willing to convert their coppice forest to high forest.

As regards to biodiversity, Kosovo is rich with plant species, considering its relatively small surface. There are 13 species of plants that grow only in Kosovo and approximately 200 species are grown in Balkans. Total number of plant species is larger than in some European countries. This diversity is a result of complexes activities of physical factors, as the soil and climate that create diversity of habitats and conditions for growth of plants. In the territory of Kosovo there are around 24 species of threatened plants as a result of human activities. These are mainly concentrated in mountain areas but also in field areas.

There are about 46 species of mammals in Kosovo - most of them of regional and global importance. Some aquatic bird species have been lost due to the destruction of wetlands, pollution and degradation of rivers. Hunting was very intense during the 1990s, and is now reported for a reduction in illegal hunting. Illegal hunting has resulted in an increase in the population of endangered animals. Most of the biodiversity wealth of land and animal plants is in the high mountains in the south and west of Kosovo. Biodiversity of aquatic ecosystems has fallen sharply, especially as regards fish species as a result of water pollution and river bed degradation (Source: Strategy and Action Plan for Biodiversity 2011 - 2020).

Most of the land in Kosovo, about 94% of the total area of Kosovo, is agriculture and forest land, while only 5-6% of the land is used for construction. Of the total agricultural land, about 90% are private property. Based on the MAFRD estimates, each year about 400 ha change the destination of use from agricultural land to construction land. One of the main developments is uncontrolled construction due to the lack of urban and municipal development plans as well as the poor implementation of legislation on the protection of agricultural land. Other factors include: 1) loss / degradation of agricultural surfaces, b) deforestation, c) quarries and reparations, c) landfills.

ANNEX 6

DATA MANAGEMENT AND EVALUATION WAYS

Data Management

Data should be managed in accordance with regular office rules (registered mail, data storage, etc.). Each IMWG sub-group shall maintain record on sent reminders and data requests,

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submitted data, internal reports, minutes and conclusions of IMWG meetings and meetings with other stakeholders, public consultation documentation and reports on implementation.

Indicators

The main objective of the monitoring of implementation of CCS is to assess implementation level and subsequently effects of implemented interventions. To ease that process, the Table 3 proposes indicators and sources of verification for all 33 interventions listed in the Action Plan.

Intervention	Indicator	Source of verification
Monitoring and reporting on implementation of CCS	Last update of data on implementation of CCS	Internal annual reports Official reports
Integration of CCS goals in relevant strategic documents/sectoral policies	Indicator can be expressed in % or in total number of strategic documents where CCS goals are integrated	Relevant sectorial policies
Improve information generation, use of information and communication	The indicator is qualitative. A survey based on a simple questionnaire may be conducted in order to develop the final report. Alternative: number of collected notes and exchanges made	Search, data submitted by responsible institutions
Training of proffessionals	Total number of trainings Total number of persons trained	Data submitted by responsible institutions
Public awareness interventions	Total number of public awareness campaigns, Alternative: estimate of audience reached	Press clippings, promotional materials.
Development of climate tax package	Number of financial instruments introduced	Legal acts /Official Gazette
Setting-up National Inventory System	Last update of National GHG Inventory	GHG Inventory Report
Public health related interventions	Indicator is qualitative.	Data submitted by responsible institutions

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Enhancing the implementation of the KEEP 2013-2017	Level of implementation of KEEP	KEEP implementation report
Development of Platform for Risk Management	Established body and mechanisms for risk reduction	Government decision
Preparation of Draft National Drought Management Plan (NDMP)	Draft NDMP prepared	Draft NDMP
Establishment of an inter-governmental task group of institutions responsible for forest protection	Established body	Government decision
Drafting construction standards and guidelines for green buildings and green roofs	Drafted and adopted standards	Legal acts /Official Gazette
Development of legislation on groundwater	Adopted legal acts	Legal acts /Official Gazette
Prevention of lignite self-ignition	Performed interventions	Data submitted by responsible institutions; Inspection reports
Development of design of rehabilitation measures to ensure structural integrity of Iber-Lepenci hydro-system	Design of rehabilitation measures completed	Data submitted by responsible institutions; Environmental impact Assessment
Develop design of treatment plant for acidic discharge water (Novobrdo mine)	Design of treatment plant completed	Data submitted by responsible institutions; Environmental impact Assessment
Enhancing the implementation of the NREAP (2011-2020)	Level of implementation of NREAP	NREAP implementation report
Development of groundwater management strategy	Strategy developed	Government decision on adoption of Strategy
Modernizing hydrometeorology monitoring networks	Number of stations modernized	Data submitted by responsible institutions;

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Reducing flood risk	Database for river flows created; Mapping of flood prone areas completed; Number of local flood risk management plans developed	Data submitted by responsible institutions
Developing and adoption of necessary legislation related to water transfer	Legal acts adopted	Legal acts /Official Gazette

http://www. .euro.ëho.int/en/what-we-do/health-topics/environment-and-health/Climate-change/publications/2010/protecting-health-in-an-environment-challenged-by-climate-change-european-regional-frameëork-for-action