

**On the Road to Montreal 2005: Intergovernmental meeting under
UNFCCC (COP 11) and the Kyoto Protocol (COP/MOP 1)**

COUNTRY ASSESSMENT REPORT

Country: **BOSNIA AND HERZEGOVINA**

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Bosnia and Herzegovina

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ABBREVIATIONS

AD	Activity Data
BiH	Bosnia and Herzegovina
CARDS	EU program for Assistance, Reconstruction, Development and Stabilization (the main channel for the European Union's financial and technical assistance cooperation with the Southeastern Europe countries)
CEE	Central and Eastern Europe
COP	Conference of the Parties
CO₂	Carbon dioxide
CDM	Clean Development Mechanism
DPA	Dayton Peace Agreement
DSPRS	Development Strategy and Poverty Reduction Program
EIONET	Environment Information and Observation Network
ELV	Emission limit values
EMAP	Environmental Monitoring and Assessment Program
ES	Environmental Statistics
EU	European Union
FBiH	Federation of Bosnia and Herzegovina autonomous entity
GHG	Greenhouse Gases
GEF	Global Environmental Facility
HFC	Hydro fluorocarbons
INC	Initial National Communication
IPCC	Intergovernmental Panel on Climate Change
JI	Joint Implementation
MOFTER	Ministry of Foreign Trade and Economic Relations of BiH
MDG	Millennium Development Goal
NEAP	National Environmental Action Plan
NFP	National Focal Point
NGO	Non-Governmental Organization
RS	Republic of Srpska autonomous entity
SCCC	Steering Climate Change Committee
QA/QC	Quality Assurance/Quality Control
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
WMO	World Meteorological Organization

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1. Summary

Country Assessment Report for Bosnia and Herzegovina is integral part of the Regional project “*On the Road to Montreal 2005: Intergovernmental meeting under UNFCCC (COP 11) and the Kyoto Protocol (COP/MOP 1)*”. The main objective of this Report is to serve as a background document for the development and adoption of the Common Standpoint Document on cooperation combating climate change in Western Balkan countries.

Bosnia and Herzegovina (BiH) ratified the United Nations Framework Convention on Climate Change (UNFCCC) on September 7, 2000 and the UNFCCC entered in force on December 6, 2000. Bosnia and Herzegovina, as a developing Party, is fully committed to meeting its requirements; however, further active work on these issues is needed. Kyoto Protocol has not been ratified yet, but it is currently in the process of ratification.

The Report presents an overview of the situation and possibilities for fulfilling the taken obligations in accordance with UNFCCC, as well as of problems and needs of Bosnia and Herzegovina from the aspect of fulfilling such obligations.

The overview considers state and legal framework in accordance with existing and planned solutions related to climate changes. It has been pointed out that Bosnia and Herzegovina recognized the need of undertaking preparation of the Initial National Communication including GHG Inventory Report and that those processes were under development at the moment. As a Non-Annex I Party, the Government of Bosnia and Herzegovina has requested the GEF to assist it in order to meet the commitments under Article 12.1 related to the Preparation of Initial National Communication. Furthermore, there is a problem of absence of measures and programs related to strengthening observation and climate change research in order to decrease impacts caused by climate changes.

Today, participation in Kyoto CDM mechanism is not possible for Bosnia and Herzegovina, because of the fact that BiH does not have sufficient capacity and does not fulfil other conditions required from host countries for CDM projects development and implementation.

Legal framework makes possible real assumptions for fulfilling the obligations of UNFCCC, but complicated state structure and undefined responsibilities/competences require joined and concerted efforts from all governmental institutions dealing with climate change issues.

Level of existing capacities can be estimated as low. The activities related to climate change that have been carried out so far are rather fragmented and unsystematic; the preparation of the Initial (First) National Communication including GHG Inventory Report, together with development of the National Framework for Climate Change Strategy and Action Plan related to implementation of UNFCCC and its Kyoto Protocol, as well as National CDM strategy, are utmost important, given the fact that they represent the basis for compliance and continuation of other related activities.

The constrains that Bosnia and Herzegovina is facing, such as low priority of climate changes issues, lack of capacities, including technological capacity and educated staff,

Deleted: such as

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as well as needs for public awareness raising and increasing human and financial resources, represent barriers that have to be overcome through guidance and assistance provided by the international community.

2. Introduction

International Conventions

The Government of Bosnia and Herzegovina is a party to a number of international environmental agreements and conventions, and is fully committed to meeting the requirements stipulated in these agreements. Among the most important ratified international agreements the following ones should be pointed out:

United Nations Framework Convention on Climate Change (UNFCCC):

Bosnia and Herzegovina ratified the United Nations Framework Convention on Climate Change (UNFCCC) in 2000.

The Kyoto Protocol has not been ratified yet.

UN Convention on Biological Diversity

Bosnia and Herzegovina ratified the United Nations Convention on Biological Diversity in 2002.

UN Convention on Desertification

Bosnia and Herzegovina ratified the United Nations Convention to Combat Desertification in 2002.

Vienna Convention for the Protection of the Ozone Layer:

BiH became a Party of the Vienna Convention for the Protection of the Ozone Layer and Montreal Protocol on Substances that Deplete the Ozone Layer, through succession of the former Yugoslavia.

Convention on Long-range Trans-boundary Air Pollution

BiH became a Party to the Convention on Long-range Trans-boundary Air Pollution and to the Protocol to the Convention Financing of the Co-operative Program for Monitoring and Evaluation on the Long-range Transmission of Air Pollutants in Europe (EMEP Protocol) through succession from the former Yugoslavia.

After UNFCCC ratification, serious effort has been made to set appropriate policy, institutional and legal framework to meet the Convention commitments. Based on mutual agreement of both Entity relevant Ministries, the BiH focal point for UNFCCC is the Ministry of Physical Planning, Civil Engineering and Ecology of the Republic of Srpska while the operating unit is the Institute for Urbanism of the Republic of Srpska in Banja Luka. At the beginning of 2004, the most important institutions in Bosnia and Herzegovina related to climate protection and participation of B&H as a Non-Annex I Party in the UN Framework Convention on Climate Change negotiation process were:

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- National Focal Point B&H to the UNFCCC-Ministry of Physical Planning, Civil Engineering and Ecology of the Republic of Srpska;
- B&H Committee for Climate Changes and Sub-Committees for Climate Changes;
- GEF Political and Operational "Focal Point" for climate changes;
- Administrative Committee for Sustainable Development.

Bosnia and Herzegovina does not have official GHG inventory, and did not develop the First National Communication to UNFCCC. B&H National Focal Point to UNFCCC in cooperation with other responsible institutions made a Project proposal to GEF/UNDP for funding and expertise assistance for the preparation of the Initial National Communication (405.000\$). We expect its development to start this (2005) or next year.

3. Legal framework related to climate change

In accordance with the Dayton Peace Agreement (DPA) from 1995, the State of Bosnia and Herzegovina (BiH) is administratively divided into two parts, i.e. the two autonomous entities: the Republic of Srpska (RS) and the Federation of Bosnia and Herzegovina (FBiH) were established within Bosnia and Herzegovina's borders.

In accordance with DPA, each Entity is responsible for the protection, preservation and promotion of the environment; therefore, the two Entities' laws, which cover different environmental issues, including air quality protection, are in force.

Within postwar reconstruction, both entities have recognized European and world legislative standards as a basis for developing national environmental legislation.

The following set of laws on the entity level has been created and passed in the field of environment protection:

- Law on Environment Protection,
- Law on Air Protection,
- Law on Nature Protection,
- Law on Waste,
- Law on Water Protection, and
- Law on Environment Funds.

The Ministry of Physical Planning, Civil Engineering and Ecology of the Republic of Srpska and the Federal Ministry of Physical Planning and Environment of the Federation of Bosnia and Herzegovina are responsible for the management of the environment and should provide legislation and administrative management bases for implementation of international conventions, such as UNFCCC.

Environmental responsibilities of Ministries and other Bodies

Various Ministries are responsible for several aspects of environment-related activities. This is defined by different Laws.

As defined by the Law on Ministries, the relevant authority at the State level remains with the Ministry of Foreign Trade and Economic Relations (MOFTER). More

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specifically, this Ministry is responsible for carrying out tasks related to defining policies and basic principles, coordinating activities and harmonizing plans of the Entity authorities and bodies at the international level for, among other topics, protection of the environment, development and use of natural resources.

At the Entity levels a summary of Ministries and other bodies with environmental competences is presented below.

The Republic of Srpska (RS)

The Ministry of Physical Planning, Civil Engineering and Ecology of the Republic of Srpska is responsible for overall protection of quality of the environment and its improvement through research, planning management and protection measures, protection of assets of general interest, natural resources, natural and cultural heritage. In accordance with the recommendation of the Steering Committee for the Environment of Bosnia and Herzegovina, the Government of the Republic of Srpska has appointed the Ministry of Physical Planning, Civil Engineering and Ecology of Republic of Srpska as BiH Focal point to UNFCCC. The Institute for Urbanism of the Republic of Srpska (IURS) has been nominated as the co-coordinator of Bosnia and Herzegovina's Program activities preparation and UNFCCC implementation. In the course of long-term technical support of all activities related to climate change, the IURS has established a permanent Technical secretariat on climate change unit.

In accordance with the national law requirements, the IURS produced a long-term Physical Plan for the Republic of Srpska in 1996. The Physical Plan includes elements related to climate data and monitoring, climate applications and climate change impact studies. This sub-program has two components: the long-term strategic plan (for 1996-2015) and the implementation plan and set up of the climate monitoring system. These actions are aimed at supporting and further development of national meteorological and hydrological observing networks in order to ensure participation in the Global Climate Observing System and the implementation of other climate-related UNFCCC commitments.

In accordance with the Law on meteorological and hydrological activities of Republic of Srpska (Official Gazette of the Republic of Srpska, 20/2000), the Republic Hydro-meteorological Institute of the Republic of Srpska, as the governmental organization, is responsible, among other, for climate change monitoring, climate data exchange and data base management, application study and climate predictions in the framework of the various scientific and technical programs of the World Meteorological Organization.

Federation of Bosnia and Herzegovina (FBiH)

The Ministry for Urban Planning and Environment of the Federation of Bosnia and Herzegovina is responsible for preparation of geological maps for urban planning and protection of air, water and soil; preparation of environmental strategy and policy; quality standards for air, water and soil, ecological monitoring and quality control of air, water and soil.

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FBiH Institute for Meteorology, as an independent institution, is responsible for administrative and professional tasks related to meteorology, seismology, hydrology, water resources, as well as for monitoring of environmental quality including air, water and soil; collection, processing and publishing of data related to above mentioned activities, etc. The Law on Hydro-Meteorological affairs, being of interest to the Republic Bosnia and Herzegovina (R BiH 10/76), also presents a legal basis for the work of this Institute (the law is inherited from R BiH/SFRY). This law describes in detail the tasks of the Institute in the field of hydrology and meteorology. Considering the Institute an active partner in communication with the World Meteorological Organization (WMO), who's member is also Bosnia and Herzegovina, the Institute follows in its work various WMO Guidelines in the field of meteorology and hydrology.

It is expected that the adoption of the new legal regulation on environment shall unavoidably lead to organizational restructuring of authorities per sectors and administrative bodies both in FB&H and RS. This means that it will be necessary to reinforce institutionally the proficiency and capabilities of the existing resource ministries (more space, equipment and employees), and to clearly define competences and authorities related to environmental issues, as well as to improve compatibility and coordination of relevant bodies in assigning or even overlapping responsibilities in the field of environmental protection.

Upon passing the relevant sub-legal acts, defined by the above-mentioned laws, a better enforcement of those laws is expected, which would improve law-governing procedures in general.

Actually, these laws are harmonized with EU legislation, which improves policy implementation and proficiency in the domain of responsibilities, in accordance with United Nations Framework Conventions on Climate Change (UNFCCC).

Development Strategy of BiH and National Environmental Action Plan

Through the efforts undertaken by BiH National Focal Point to UNFCCC and other responsible institutions, the climate change issues were addressed in identifying the various environmental problems and challenges facing BiH. Hence economic Development Strategy of BiH (DSRSP) for the realization of the national sustainable development and poverty reduction for the period 2003-2007 based on Millennium Development Goals underlines climate change consequences and sets up a several priority actions with respect to climate protection. The National Environmental Action Plan (NEAP) has been developed with the assistance of the World Bank and it was adopted in 2003 by the Entities. BiH NEAP based on national sustainable development priorities, Rio Agenda 21 and objectives and priorities of The Sixth European Community Environment Action Program 2001-2010, also considers climate change issues (NEAP BiH, 2003). It contains a concrete list of main existing problems and provides measures for their solutions. In Chapter 3 on the Environmental Management in BiH, the NEAP recognizes the necessity to establish an Environmental Information System. Introduction of information systems and monitoring are considered priority field of actions, where two of the priority measures are:

- *“The introduction of a comprehensive monitoring system in BiH”;*

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- *“The establishment of a central data base, training of personnel and improvement of the existing communication with the European Environmental Agency (EEA/EIONET)”*.

4. Major Commitments under the UNFCCC

Bosnia and Herzegovina as a Party not included in Annex I to the Convention in accordance with Article 4, paragraph 1, is obliged to:

- Develop and periodically provide the international community with information on the GHG emissions inventory and trends of sources and sinks of greenhouse gas emissions in Bosnia and Herzegovina;
- Formulate, implement, and regularly update national program containing measures to mitigate climate change by addressing anthropogenic emissions by sources and removals by sinks of all greenhouse gases;
- Promote and cooperate in development, application and diffusion of technologies, practices and processes that control, reduce or prevent anthropogenic emissions of greenhouse gases in all relevant sectors, including energy, transport, industry, agriculture, forestry and waste management sectors;
- Promote sustainable management and cooperate in conservation and enhancement of sinks and reservoirs of all greenhouse gases including biomass, forests as well as other terrestrial, coastal and marine ecosystems;
- Cooperate in preparing for adaptation to the impacts of climate change;
- Take climate change considerations into account, to the feasible extent, in the relevant social, economic and environmental policies and actions;
- Promote and cooperate in scientific research and systematic observation and development of data archives related to climate system;
- Promote and cooperate in full, open and prompt exchange of relevant information related to climate system and climate change;
- Promote and cooperate in education, training and public awareness related to climate change;
- Develop and periodically submit the National Communications to the Conference of the Parties with information related to UNFCCC implementation, in accordance with Article 12.

4.1. National inventories of all GHGs

Legal framework

In order to consider the status of inventory emission development in Bosnia and Herzegovina, we will primarily specify valid legal regulation in this field, articulated in the air protection laws for FB&H and RS.

In this laws it is to be highlighted that:

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Federal Ministry for Physical Planning and Environment of FB&H and Ministry for Physical Planning, Civil Engineering and Ecology of RS announce, in January every year, the Report on Air Pollution Inventory Emission for the year next before last for the Federation of Bosnia and Herzegovina and the Republic of Srpska.

Cantons in FB&H, in April every year, announce the Air Pollution Inventories Emission (including dissemination from natural resources) for the year next before last for the territory of each canton.

Inter-entity environment organ unifies, in April every year, the Report on Emission Inventories for the year next before last, based on information submitted by entities ministries. Unified report is submitted to the Council of Ministers in B&H to be forwarded to the authorized agencies for international agreements whose member is Bosnia and Herzegovina (this procedure regulated only by FB&H law).

Reports have to be prepared in compliance with requirements for reporting determined by international agreements whose member is Bosnia and Herzegovina.

Emission inventories should be prepared at least for the following air pollution substances: sulfur dioxide, nitro-oxide, carbon dioxide, carbon monoxide, ammonia, nitro-oxide, methane, non-methane carbon-hydrogen, petrol and solid particles above ten micrometers (PM-10).

Emission inventory register is maintained per fields of activities.

Emission assessments are performed in accordance with internationally approved methods and guidance being developed in practice.

Polluters, specialized institutions and authorized organs are responsible for submitting the data required for dissemination assessment or control to the ministries.

Note:

The Law of the Republic of Srpska specifies that, in January every year, the relevant ministry is to determine emission inventory register for the year next before last, but it does not imply methods of inventory compilation at the B&H level, as stated in the laws relating to this field in FB&H.

It is necessary to point out that Bosnia and Herzegovina has not done yet the annual GHG emissions inventory report according to the UNFCCC and IPCC methodology.

Certain experiences related to inventory development exist in some institutions, but those data cannot be considered official or sufficient for meeting the UNFCCC obligations, and they will be treated in detail within the analysis.

Bosnia and Herzegovina has not developed yet the "Initial National Communication". National Focal Point of Bosnia and Herzegovina to UNFCCC has taken initiative through the GEF to provide assets for development of the "Initial National Communication of Bosnia and Herzegovina to UNFCCC", and GEF endorsement procedures are expected to be finalized until the end of 2005.

In Bosnia and Herzegovina, there is no institution to be responsible for collection of "activity data" necessary for GHG inventory emission development, in accordance with UNFCCC guidelines and IPCC methodology. Particular problem is the fact that Bosnia and Herzegovina consists of two entities - FB&H and RS as well as District Brcko, and these activities are carried out on the entity level, so there is an urgent need to promote cooperation in that field between the entities.

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Environmental Statistics

Although not directly involved, Statistical Institutes also plays a key role in the environmental monitoring.

In this respect the statistical institutes in BiH are the following:

State level

The BiH Institute for Statistics is responsible for production and publishing (after control) of the aggregated statistics for Bosnia and Herzegovina, in accordance with internationally accepted methodology. These aggregated statistics are based on data submitted by the Entity Statistical Institutes. It is also responsible for coordinating work of the Entity Statistical Institutes and for fostering closer cooperation.

Entity level

The RS Institute for Statistics and the FBiH Institute for Statistics are the authorized and competent bodies responsible for performing work in the field of statistics. Among others, activities of the Institutes include production of statistics - collection, storage, processing, analysis and distribution of data.

In practice, the production of statistical data is ensured by other relevant Ministries and organizations in their area of responsibility, and then submitted to the Institutes. In particular, among the Institutions allowed to organize and conduct statistical researches are the RS Hydro-meteorological Institute and the FBiH Meteorological Institute, Entity Ministries of Internal Affairs, and Ministries of Energy, Mining and Industry.

Even though the Statistics Agency does exist at B&H level, it does not yet dispose of even small amount of required data, which could be used for inventory emission assessment. Similar situation is with entities' institutes for statistics. They just have a small portion of data for GHG inventory assessment available.

Huge energetic plants – mainly thermal power plants maintain data on fossil fuels consumption. Some thermal power plants also have emission monitoring systems built-in, but the maintenance of these systems is irregular and data can be used only for checking out calculated emission.

Electric companies in both entities certainly dispose of data on fossil fuels consumption in thermal power plants, and these data can be considered valid. Bigger energy and heating plants in the cities have the data available as well (“activity data”).

Emission, i.e. “activity data” out of mobile sources can be obtained through the statistics institutes within entities. Determination of sorts and age of certain categories of mobile sources, as well as annual fuel consumption need to be assessed, and we are of the opinion that it is not a problem.

However, problems occur when we are searching for total annual liquid fuels consumption on both entities and B&H levels. Here, the evidence is very poor due to differences in calculation compared with consumption data for postwar period. The

issue is in inaccurate inventory of liquid fuels being imported through border crossings in B&H without taking evidence in statistical reports.

Additional problem are certainly “activity data” for industrial processes due to inadequate data presence in publications and official information. In the postwar period, the industry in Bosnia and Herzegovina is of decreased manufacturing capacity, which is mostly caused by destroyed industrial facilities during the past war, as well as of inactive production both in existing and time barred technological facilities.

Similar situation is with “activity data” for agriculture, changes on the land and in forests caused by exploitation (Land Use Change and Forestry - LUCF) and waste.

With regard to institutional responsibility for data collection, the situation is quite unclear. Although, for each field there are several institutions dealing with concerning issues, certainly responsibilities and data scope are not clearly defined for any of them. The problem is in unclearly defined reporting instructions on “activity data” at entities’ levels.

Of course, the problem is in the fact that responsible entities managements and most of the institutions represented in the report are not informed enough on the UNFCCC and Kyoto Protocol obligations. In relation to that, relevant changes are expected, because effective laws have imposed requests on reporting, inventory development and “activity data” collection.

The laws have prescribed that in general, but this year the sub-legal regulations are expected to be passed, which will certainly introduce order in this field. However, it will be a long-term process until all that is completed. Actually, it is necessary to educate the whole pyramid of responsible cadre in the data collection system.

To summarize all this, we can point out that:

- There is no legally responsible institution for data collection;
- There is an incompliance between existing data and data requested by IPCC methodology;
- There are insufficient adequate equipment for data collection;
- There are gaps in data processing;
- There is no legislation on type and scope of required data to be collected;
- There is no adequate education.

Federal Meteorological Institute, as an institution, has certain experience in “activity data” collection, especially in the fields of energy, industrial processes and partially agriculture. Unfortunately, data collected by the Institute are related to the period before the B&H war (up to 1990). There are some positive experiences in annually collected “activity data” for the most of energetic and industrial facilities. The data are collected seriously, due to trained personnel of the Institute mainly walked through the facilities and on spot filled out previously prepared enquiries along with responsible people from energetic or industrial branches. Those data are saved, and on their basis, we can certainly obtain reliable GHG emission data for, eventually, the year of 1990.

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Using CORINAIR methodology and COLLECTER II, REPORTER II and COPERTIII software, available data are stored in digital form in the Institute. Longtime experience in using this methodology is precious and will certainly be applied in future.

Emission factors calculation

Emission factors calculations (EF) are without doubt one of the basic conditions for the high-quality GHG inventory development.

CORINAIR methodology introduced by Federal Meteorological Institute and the recent software could provide visible inventory emission in complete, not only for LRTAP Convention needs, but also for UNFCCC and IPCC. It is well known that with new software, ability of fast receipt of required table reviews for UNFCCC and IPCC is improved.

Data collection and GHG emission assessment problems are obvious for four-year war period, but they will not be significantly reduced for postwar period either.

Some experiences related to emission assessment and emission factors have been shared with the Faculty of Mechanical Engineering in Sarajevo, i.e., CETEOR Company, and partially with the Faculty of Mechanical Engineering in Banja Luka. However, only general assessments have been done over there, and obtained data have not been in compliance with the IPCC methodology.

There is no reliable measurement data for industrial processes; hence, in principle recommended factors from IPCC guidelines and instructions should be used here.

For agriculture, standard (default) emission factors given in IPCC instructions are satisfactory.

LUCF and waste issues are more problematic due to inexistence of reliable input calculation data. Unfortunately, there is no significant experience regarding emission factors application.

Preparation the GHG inventory emission estimates

According to the adopted legal regulations, emission inventory is prepared by each entity separately. Actually, legally assigned relevant ministries for environment in the entities are responsible for that. Ministries may assign institutions that will be responsible for preparation of the inventory assessment dissemination.

On the basis of that, it is obvious that at the level of B&H, there is not a single institution responsible for emission inventory assessment, instead two independent assessments for each entity are developed and then they comply with each other at the level of Inter-Entity Environmental Steering Committee.

By sub-law acts, which are expected to become effective this year, an institution in each entity, responsible for preparing inventory emissions estimates, will most likely be assigned.

It is obvious that the issue of single GHG inventory emission for Bosnia and Herzegovina is still disputable, because it will be very hard to put in compliance entities inventories within Inter-Entity Environmental Steering Committee, which is

not an expert body. Neither we have clearly defined nor recognized single and compatible methods of inventory development within entities.

Ministry for Physical Planning, Civil Engineering and Ecology of the Republic of Srpska as a B&H National Focal Point to UNFCCC has designated responsibilities to the Institute for Urbanism of the Republic of Srpska for coordination B&H activities on UNFCCC implementation, including preparation of the national GHG inventory of anthropogenic emissions and removals of greenhouse gases by sinks.

General conclusion is that the inventory development funds have not been provided over here, and that the issue has not been systematically solved. Furthermore, it is necessary to provide adequate education with assistance of the international community for the personnel that has been participating so far and that will participate in future in inventory emission activities. Certainly, social and other problems in B&H do not permit this issue to gain a higher priority status. We also expect that new sub-legal regulations will provide better approach in solving presented problems. The main problems for ensuring the high-quality preparation of the inventories and complying with the new guidance are the following:

- There is no legal or regulatory mandate to produce inventories.
- There is a lack of defined institutional setup and lack of rules for participation in the development and approval process.
- This is also connected with the lack of regulations for the allocation of funds for inventories preparation.
- The number of expert for inventories preparation is very low.

4.2. National policies and measures to limit GHG emissions

The Dayton Peace Constitution has created very complex internal political structure of Bosnia and Herzegovina (BiH). The environmental policy in BiH is not regulated at the State, but at the entity (Federation of Bosnia and Herzegovina – FBiH and Republic of Srpska - RS) level. Responsible Ministry for Environment in FBiH is the Federal Ministry of Physical Planning and Environment while in RS it is the Ministry of Physical Planning, Civil Engineering and Ecology. Overarching these entities is a central Government with its Council of Ministers and eight State Ministries (environmental protection primarily being responsibility of the Ministry of Foreign Trade and Economic Relations and partially of other state level Ministries) and rotating Presidency of Bosnia and Herzegovina. Unfortunately, this complex structure is not necessarily fully functional for the areas, instead it is left to be managed by the entities, out of which one belongs to the environmental domain.

What makes the situation even more complicated is the environmental policy within each Entity, taxation, the fact that customs controls and sector programs are governed from entity level. This kind of complex model of governance weakens the collection of public revenues and limits employment-creating investments. Each of ten (10) FBiH cantons also has its own governmental structure and distinct social and economic development policies and strategies. Governmental structure is less complicated in RS since this entity is divided into regions.

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There is no Environment Protection Agency either at the State or at the entity level. Both FBiH and RS Ministries are responsible for many other activities, which makes the environment not necessarily their highest priority. In addition, they both lack of human, technical and financial resources in the field. Other environment-related institutions also lack of human resources. Environmental permitting system is extremely weak and economic instruments are undeveloped.

Bosnia and Herzegovina is currently undergoing a period of transition towards adopting a market-based economy. In line with this economic transition it is essential that due consideration is given to the integration of environmental policies with the development initiatives of Bosnia and Herzegovina.

With regard to strategy and measures, and national emission projections as well, we can claim that at the B&H level such document has not been brought yet.

As mentioned above, Bosnia and Herzegovina has not developed yet the Initial National Communication to UNFCCC. We expect its development to start this (2005) or next year. We need to determine a basic year related to Kyoto Protocol, on the basis of which we can assess the existing status of emission trend and determine goals for further steps, having in mind possible new obligation in the future under the EU association process.

Certainly, related entities' ministries will work on determining measures and implementing strategic policy, while university experts will contribute in developing dissemination projections along with those who are to be included in dissemination inventory development and long-term inventory basis establishment.

International assistance

Several international projects that could help strengthening and developing quality management are currently under way. The most important are:

EU Financial Instrument for the Environment

LIFE project ROSA. This project, coordinated by the Regional Environmental Center for Central and Eastern Europe, aims at setting up an operational unit under the Inter-entity Steering Committee for the Environment. To that aim, it has established six working groups, one of them dedicated to air quality. These working groups also contribute to the development of secondary legislation.

EU Community Assistance, Reconstruction, Development and Stabilization (CARDS) project "Institutional Strengthening in Environmental Management". This project will provide support to the Environment Ministries to develop environmental policies and instruments, as well as to draft secondary legislation.

EU CARDS project "Development of a National Environmental Monitoring System". The aim of this project is to develop a monitoring system in line with structure and requirements of the European Environment Information and Observation Network (EIONET).

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Outcome of the mentioned project was supposed to be an establishment of National Referent Centers for development of GHG inventory. During 2 years of the project duration, the topic of several workshops was harmonization of structure of National Referent Centers on state level. Memorandum of Understanding defined structures and procedures for nominations.

EU CARDS project "Support to Air Monitoring". The purpose is to define sustainable means of data collection (both toward statistics and monitoring) in order to identify the air quality and emissions situation in Bosnia and Herzegovina and to provide reliable data for reporting on air quality issues.

An important outcome of this project is the preparation of quality questionnaires for data collection on emissions from all types of sources in BiH. Prepared questionnaires were harmonized with requirements of reporting on air emissions, related to needs of development of adequate emissions inventories.

During October 2005, questionnaires have been sent on 4000 addresses, potential polluters.

Also, an education on way of fulfilling the questionnaires for operators of installation has been performed within the mentioned project. Questionnaires will be published on the Project web site.

Bosnia and Herzegovina provides environmental data to EEA, but these data are incomplete. In 2002, it reported only 29% of the EIONET priority data, in comparison with 39% from the previous year. However, these percentages do not represent adequately the reporting of BiH to the EEA, as they are not based on the number and representative ness of all data transmitted but only on the number of priority topics.

In 2002, BiH transmitted data on air quality and river quality and partially on groundwater from earlier data collection. No data were transferred on air emissions, marine and lake waters.

In practice, everybody and all types of "bodies" could be interested in getting environmental information collected through the monitoring system. However, not all of them have the same requirements and needs. This means that

- reports and documents must be adapted to the specific needs of the category which is targeted;
- dissemination must allow reaching the specific category/target.

These needs are dictated by the objectives or obligations of the different categories:

- international organizations, such as EEA, UNECE and other secretariats of international agreements and conventions, as BiH has certain reporting obligations deriving from international agreements and conventions: to evaluate the implementation of agreements and conventions by BiH and also for international exchange and dissemination purposes.
- public authorities from local to national level including policy and decision makers: to develop policies and strategies, to elaborate legal tools and mitigation measures, to follow up implementation of the laws and to further disseminate environmental information.

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- industrial sector (private or public – SMEs, large industry, energy, mining etc.): to ensure and verify compliance with the existing laws and regulations, to adapt management and development plans in consequence, and also to prepare Environmental Impact Assessments and similar studies and even to develop business plans in case of environmental enterprises.
- sector of services (private or public – transport, health, waste, water etc.): to develop mitigation measures, such as traffic regulation, in their sphere of competence and to evaluate the impact of pollution on human health.
- research sector (universities, researchers, scientists): to get a better understanding of the environment and the impact of pollution.
- educational sector, NGOs and media: to teach and to promote environmentally friendly behaviour and participation in decision-making process and at the same time to further disseminate environmental information.
- public in general, having the right to live in healthy environment and having the right to be informed and to participate in the decision-making process.

4.3. Educational and public awareness programs on climate change

Regarding the educational system, the present situation shows that only biology and geography curricula in elementary schools include some environmental and climatic issues. Extracurricular activities in the schools (eco sections) depend on individual teachers' interest and of course on the knowledge of teachers, which is mostly lacking. Situation in high schools is identical. At the university level, only few faculties, mostly mechanical engineering and technology faculty, provide lectures that include environmental issues. Environment, as a cross-cutting issue, is not built in the education system.

The ministries responsible for education have never prepared annual environmental education plans to be included in the curriculum, although this is their obligation according to the Framework Laws on Environmental Protection in both entities. The ministries responsible for environmental protection are supposed to provide assistance for this exercise. This could be considered as the most important gap regarding educational institutions.

Summary:

- The Climate change (CC) issues are still not included in the schools' and universities' curricula. During that period there were no activities in the field of capacity building in the education system.

- There is no department or person within the ministries or public agency working on education on climate change (e.g. development of educational materials, guidelines, or recommendations for curricula, and training materials for teachers)
- The governmental staff of the Ministries responsible for climate change has not been trained on the access and the participation rights of the public; also, the staff responsible for disclosure of information has not been trained on climate change issues.
- Limited public awareness generally on CC related issues, as the CC is not among the priorities of the society;
- Lack of information on issues related to Kyoto mechanisms;
- Lack of support for participation of experts in international workshops;
- Limited number of international workshops in country;
- Lack of financial support for training and certificate programs;
- National Communications and Inventories are not prepared.

Priority areas for capacity building in relation with the implementation of the Convention and the Kyoto Protocol

Capacity building needs of Bosnia and Herzegovina encompass institutional capacity, including technological capacity, human resources development and knowledge, information and methodology issues. In this context, the international assistance is required to support Bosnia and Herzegovina in the following activities:

- To develop a national system for assessment of the anthropogenic greenhouse gas emissions inventories;
- To develop National GHG inventories report and National Communication;
- To formulate and implement National Climate Change Policy (Development and implementation of policies and measures, including those taken for adaptation to climate change and transfer and development of technologies as a part of the national, regional and local development programs and plans, and in the sector policies);
- To develop National CDM strategy and expert assistance in creating appropriate legislative and regulatory framework needed for BiH participation in the Kyoto mechanisms;
- To formulate and implement the National program for public information, education, training and ensuring public support;
- To improve national and regional cooperation in scientific research and climate change observation as well as in climate change impacts, vulnerability and adaptation assessment;
- To develop and maintain climate databases on the condition of the climate system and exchange of information.

4.4. Observation system, national scientific and technical research capacities

The Hydro-meteorological Institute in the Republic of Srpska and the Federal Meteorological Institute in the Federation of Bosnia and Herzegovina, as

governmental organizations, are responsible for the climate change monitoring, climate data exchange and database management, and for applied research and climate predictions in the framework of the various scientific and technical programs of the World Meteorological Organization.

Unfortunately, after the war activities that have occurred during the last decade, Bosnia and Herzegovina, as a developing country, found itself in a quite difficult economic situation. The basic infrastructure system, including meteorological and hydrological observation and telecommunication system, as the integral part of WMO/World Weather Watch and Global Climate Observing System, were destroyed and the remaining technology needs upgrading. The climate monitoring during the last decade of the 20st century was poor and it was leading to limited reliable data and uncertainties.

Therefore, database construction based on available historical climate data for the last century and climate change scenario for Bosnia and Herzegovina will be the most important tasks for any assessments of vulnerability of different sectors/systems. On the basis of climate change future trends in Bosnia and Herzegovina, the vulnerability assessment will be carried out for Agriculture and Forestry, Water resources, the Adriatic Coastal Zone, Natural ecosystems, and Human health.

Lack of national expert with appropriate experience for developing the adaptation policy framework is considered the main barrier; capacities for climate change impact and vulnerability assessment and development of mitigation and adaptation measures are weak, awareness of decision-makers on climate change is low. The situation was worsened by the lack of technical assistance and qualified staff and by inadequate education system.

4.5. National Communication Reporting

The Ministry for Physical Planning, Civil Engineering and Ecology of Republic of Srpska, acting as a B&H National Focal Point to UNFCCC, is responsible for B&H National Communication reporting, in accordance with Article 12 of the Convention, as well as for decisions of the relevant B&H institutions. The existing Laws do not decisively solve this issue of reporting at the level of B&H.

B&H National Focal Point to UNFCCC in corporation with other responsible institutions made a Project proposal to GEF/UNDP for funding and expertise assistance for the preparation of the Initial (First) National Communication (405.000\$). The official project proposal title is: *Enabling activities for the preparation of Bosnia and Herzegovina's Initial National Communication to the United Nations Framework Convention on Climate Change-UNFCCC*. Expected Project duration is 36 months. The proposal will be adopted soon. We expect its development to start this or next year (2006).

The purpose of the project is to generate, analyze and communicate information relevant to the preparation and submission of the Initial National Communication, including compilation of national GHG inventory, vulnerability assessment,

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mitigation and adaptation option analysis and other information relevant for the National Communication.

With regard to strategy and measures, as well as national emission projections, we can claim that at the B&H level such document has not been brought yet.

We need to determine a basic year related to Kyoto Protocol on the basis of which we can assess the existing status of emission trend and determine goals for further steps related to BiH participation in the Kyoto CDM mechanism.

Certainly, related entities ministries will work on determining measures and implementing strategic policy, while university experts will contribute in developing dissemination projections along with those who are to be included in dissemination inventory development and long-term inventory basis establishment.

Legal regulations being enacted in 2003 are decisive, but so far emission inventory has not been passed or approved. We do not have any experience related to that, but certainly there will be problems until this system is established or until it becomes operational.

We will certainly need some help in education and financing fields. It is obvious that so far low priority has been given to the inventory development issues and related matters.

5. Steps taken or envisaged for implementation of the UNFCCC

Establishment of the institutional framework for UNFCCC implementation

After UNFCCC ratification in 2000, serious effort has been made to set appropriate policy, institutional and legal framework to meet Convention commitments. In December 2000, BiH National Focal Point to UNFCCC was appointed and in 2001, the Climate Change Committee of BiH was established as a governmental body facilitating Bosnia and Herzegovina's climate change activities, and it has the leading role in major decision-making on possible policies and measures in the field of climate change. At the present time, on the institutional side, Ministry of Physical Planning, Civil Engineering and Ecology in the Republic of Srpska, as the BiH Focal point to the UNFCCC, the State Steering Climate Change Committee and Subcommittee and Secretariat for climate change of Bosnia and Herzegovina, the GEF operational Focal Point BiH for climate change issues and the Institute for Urbanism of the Republic of Srpska- Banja Luka, are responsible for coordination of all climate change activities at the level of Bosnia and Herzegovina and at the international level.

Round Table on "Framework UN Convention on Climate Change and Kyoto Protocol - Right and obligations of Bosnia and Herzegovina as a member of the Convention"

In February 2001 the Round Table on subject "Framework UN Convention on Climate Change and Kyoto Protocol - Right and obligations of Bosnia and Herzegovina as a member of the Convention" was organized on invitation of BiH Focal Point to UNFCCC. The participants were from both entities, the Republic of

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Srpska and the Federation of Bosnia and Herzegovina, as well as from the Brcko District (about 75 participant including media). The Round Table has adopted the following conclusions, recommendations and suggestions:

- Proposal to the Ministry of Physical Planning, Civil Engineering and Ecology of the Republic of Srpska, as the BiH Focal point to the UNFCCC, and to the Institute for Urbanism of the Republic of Srpska that is acting as a coordinative body, to intensify the activities regarding the preparation of the First National Communication to UNFCCC.
- Proposal to prepare the Climate Action Plan embracing the following issues:
 - Work out of the Study for becoming a member of the Kyoto Protocol;
 - Developing climate change monitoring and research activities, multidisciplinary climate impact assessment regarding food and energy production, water supply and other economic and social services, human health and environment;
 - Preparation of the long-term measure program, including economic and technological bases for adjustments of most sensitive economic activities to the climate conditions;
 - Program of stimulating measures development for more effective usage of energy; development and application of renewed sources of energy in the order to reduce the gas emission having the effect of green-house in the field of energy and industry;
 - Investigating possible impacts of climate change on quality and quantity, surface and ground water with the aim to rationalize the usage;
 - Investigating possible climate change impacts on biological diversity, especially on forest and other ecosystems and development of the strategy for improvement and revitalization of forest in terms of decrease of green-house gas emission;
 - Investigating climate change impacts on human health;
 - Including issues of climate change into the education system on all levels, as well as improvement of prompt public informing by using available technological means;
 - Intensifying regional and international cooperation of Bosnia and Herzegovina in the area of climate change researches.

Medium-Term BiH Program of Activities on implementation of UNFCCC, 2002-2006

The Medium-Term BiH Program of Activities on implementation of UNFCCC for the period 2002-2006 was prepared on the basis of conclusions, recommendations and suggestions of the above mentioned Round Table and adopted by the State Steering Committee for Climate Change of Bosnia and Herzegovina on its second meeting in 2002.

The following priorities were set up by the Program:

Program activity 1.

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Capacity Building of Bosnia and Herzegovina to deal with climate change issues and fulfillment of the commitments related to the preparation of the National Communication and its submission to the UNFCCC within deadline set by the Convention's provision

For realization of this activity, Bosnia and Herzegovina needs a new and additional financial support by GEF, as well as technical support with aim to cover completely the agreed costs for preparation of the Initial National Report, which, according to Article 12 of Convention, should be submitted to the COP of UNFCCC within 3 years from the date of entering into force of the Convention for B&H, i.e. from the date of receiving of financial support from GEF.

Main goals of this project are:

- To accelerate fulfilling of obligations by B&H in UNFCCC through capacity building of B&H for preparation of the Initial National Communication that should be submitted to COP;
- To raise public awareness regarding climate changes issues and to raise readiness to take actions;
- To provide information for international community about emission inventory and trends of sources and absorbers of "green house" gases (GHG) in B&H, including information about profiles of planned mitigation measures that will be implemented in future;
- To provide information about potential vulnerability of B&H economy to projected climate changes and corresponding adaptation measures to projected changed climate conditions;
- To integrate climate changes in wider planning process for country development, and to contribute to understanding of the need to incorporate climate changes in consideration within this process;
- To integrate climate changes considerations into planning and implementation of sector activities and in other national development plans, and to contribute to public support strengthening for government initiatives in climate change field;
- To identify necessary financial and technical needs of B&H and to formulate new projects in the field of climate change.

Program activity 2.

Creation of the national inventory system and estimates of changes of the greenhouse gases emission at the level of enterprises, entities and at the country level;

Beside basic financial support for preparation of the National report that each developing country, like B&H, realize through GEF, there are also other possibilities for financial support referring to multilateral and bilateral mechanisms. Thereat, on 6th COP of UNFCCC, held in 2000, a decision was made for the industrial developed countries to provide additional financial and expert - technical support for developing countries through bilateral and multilateral arrangements, in order for the developing

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countries to accomplish individual components of the National Communication, like capacity building for preparation of the National inventory of GHG emission, training for monitoring and research of climate and climate changes, assessment of climate change impact on national economy and country development in total.

Program activity 3.

Initiation of the projects with financial support of the GEF in the climate change focal area, regarding the energy efficiency and energy conservation, promoting the adoption of renewable energy, reducing the long-term costs of low greenhouse gas emitting energy technologies, and promoting environmentally sustainable transport;

This project activity includes initiation of project proposal for GEF financial support in 5 key areas in climate changes, which are the following:

1. Removal of barriers for energy efficiency and energy conservation;
2. Promotion of application of renewable energy sources by removing barriers and reducing implementation costs;
3. Reduction of long-term costs of energy technologies with low emission of GHG;
4. Support to development of sustainable transport;
5. Keeping track with regulations regarding access to new-established funds with UNFCCC and Kyoto Protocol.

Program activity 4.

Collecting the necessary data and information and work on the Study of the BiH circumstances for ratification of the Kyoto Protocol;

Having in mind that for B&H, as a Party to UNFCCC, decisions referring to developing countries such as B&H are important, as well as decisions referring to the EU that are mandatory for candidate countries, for the purpose of further active participation of B&H in international activities in climate change field, it is utmost important to prepare the Study on ratification conditions for the Kyoto Protocol. In this context, it is necessary to emphasize that the newest adopted procedures of the Protocol determine the ways of functioning of different systems of emission trading, like the mechanism of clean development that predicts, according to the Protocol's provisions, voluntary participation of developing countries.

Program activity 5:

Preparation of the National Climate Action Plan for Bosnia and Herzegovina

Having in mind that for B&H, as Convention member, activities referring to implementation of Convention and Kyoto Protocol, as well as activities connected with sustainable development, public health protection and environment protection are important, it is utmost important to pass the Action Plan for climate changes that should include, among other things, analysis and activity plan in the area of adaptation of natural and human systems to changed climate conditions and

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mitigation of consequences of climate changes, including stabilization measures and gradually reduction of GHG emissions; then preventive measures of protection and mitigation of consequences of climate extremes, especially: drought, desertification, flood, snowstorm, scarp let, storms with ice and heavy rains, high and low temperatures; then incorporation of climate factor in planning process and adoption of strategic documents, as well as adoption and implementation of long-term program for education, training and public awareness raising.

Program activity 6.

Cooperation with bodies of UNFCCC, Kyoto Protocol, Intergovernmental panel for climate changes (IPCC) and GEF

Successful implementation of the Convention and the Kyoto Protocol consider active participation of nominated competent representatives in working groups and bodies of Convention, Kyoto Protocol, as well as IPCC and GEF. According to this it is necessary to implement:

- Continuous keeping track, studying and implementation of the most important decisions, methodologies, technical guidelines and other regulatory documents referring to implementation of Convention, Kyoto Protocol and access to financial funds established by Convention and Protocol, i.e. GEF that performs functions of financial mechanism;
- Nomination of competent representatives of B&H into Advisory bodies and working groups of Convention and Protocol, as well as into working groups of IPCC;
- Active participation of nominated representatives in the work of IPCC in preparation of Fourth comprehensive science report on climate changes for period 2002-2006; and
- Realization of cooperation with bodies and working bodies of UNFCCC, IPCC and GEF, as well as cooperation of nominated representatives of B&H with B&H Focal Point for UNFCCC.

Program activity 7.

Initiation of the national Program and projects for capacity building under the Program of the World Meteorological Organization, in the fields of climate monitoring and climate extreme detection, early warning and forecasting, as well as climate database construction and management, using advanced methods and technologies.

Program activity 8.

Initiation of the projects on synergy activities for the implementation of the UN Convention related to climate change, biodiversity and desertification;

For realization of this Program of activities, Bosnia and Herzegovina needs a new and additional financial support by GEF, as well as support by other international

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multilateral and bilateral financial arrangements, and technical support with aim to cover completely the agreed costs for preparation of the National Communication and fulfillment of other commitments under UNFCCC and its Kyoto Protocol.

Other steps taken or envisaged for implementation of the UNFCCC

Climate change has been integrated in a number of important strategic frameworks in BiH. For example, **Development Strategy of BiH (DSRSP) for the realization of the national sustainable development and poverty reduction for the period 2003 - 2007 based on Millennium Development Goal**, underlines climate change consequences and sets up several priority actions with respect to climate protection issues. The recently adopted **National Environmental Action Plan for BiH** based on national sustainable development priorities, Rio Agenda 21 and on objectives and priorities of The Sixth European Community Environment Action Program 2001 - 2010, also considers addressing the climate change (NEAP BiH, 2003).

Potential for possible GHG emission reduction in Energy sector

No studies have been prepared on potential and cost of possible GHG emission reduction projects in Bosnia and Herzegovina, although the potential for project development among the two entities and all three electricity companies is likely to be high.

Biomass

Apart from the traditional use of firewood and recycling of wood waste in the wood-processing industry, there is no reliable data on the potential for using biomass in Bosnia and Herzegovina. According to the study conducted by Innotech HT GmbH, Berlin, in 2003 on behalf of the GTZ, there is an unexploited potential of approximately 1 million m³/a of residual wood and wood waste, which could be used to provide heat to 130,000 residences or 300,000 inhabitants.

CHP and District Heating

CHP for district heating could be considered in several urban areas in Bosnia-Herzegovina. The climate in most parts of the country is such that substantial home heating is required during wintertime. Home heating is for the most part done by individual stoves and boilers. In urban areas block heating systems for several buildings are also quite common. Some district heating systems exist, especially in Sarajevo, Banja Luka, Zenica and Tuzla. However, these are very inefficient. An example of end-use inefficiency is the reported 160 kWh/m² for domestic heating in the Sarajevo district heating system. The average in Western Europe would be 90-120 kWh/m² for similar climatic conditions. Before the war district heating systems were also established in some smaller communities, but few of them have been restarted since the fighting ended. As a result, electric heating is used as a supplement or in some cases the sole heating source, which increases pressure on power distribution. Increased use of CHP would improve efficiency and offset some of the demand for

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electricity. A CHP project has been considered in the thermal power plant Kakanj, which is located about 30 km from Sarajevo. District heating in combination with electricity generation has been considered in Banja Luka and Dobož in the Republic Srpska. None of these have been developed into full-scale projects, but could be developed further and perhaps could be used for the CDM. Other potential CDM projects could involve improvements to existing district heating systems.

Hydro Power

The theoretical potential of hydropower in Bosnia and Herzegovina is estimated at 8,000 MW, the technical potential at 6,800 MW, and the economic potential at 5,600.

Wind energy

Insufficient measurements make it impossible to estimate the potential for wind energy in Bosnia and Herzegovina; instead, only qualitative assessment can be made. The wind blows more strongly in autumn and winter and less strongly in summer. The infrastructure offers adequate conditions for connecting possible locations to the grid, as the high- and medium-voltage network is well developed and the damage has been largely repaired. A preliminary study carried out by the GTZ indicates that there is an economic potential for developing approximately 600 MW of wind-based electricity by 2010, assuming that an appropriate incentive system to build wind power installations are introduced. Sufficiently suitable geographical locations appear to be available. For example, measurements taken before the war for the region of Trebinje through Mostar to Bugojno show promising wind values, and more up-to-date measurements from meteorological stations and airports reveal large areas with wind velocities of over 10 m/s at a height of 10 m for more than 150 days a year. The first systematic wind measurement project in the Mostar and Herzegovina areas is in process.

Solar Energy

With solar irradiation figures of 1,240 kWh/m²/a in the north of the country and up to 1.600 kWh/m²/a in the south, conditions for using solar energy are very favorable in Bosnia and Herzegovina.

Geothermal Energy

According to available studies, Bosnia and Herzegovina has a geothermal potential of 33 MW_{th}. The temperature at the three known locations in Bosanski Samac (85°C), Kakanj (54°C) and Sarajevo (58°C) is too low for electricity generation, and can only be considered for heat generation.

Energy Efficiency

Improvement of boiler efficiencies in the industrial sector has a high abatement potential but is also associated with high costs. The boilers that are still in use in the industry are old and inefficient.

6. Participation in the Kyoto Mechanisms

Bosnia and Herzegovina can participate in the Kyoto Protocol mechanisms by hosting CDM projects, after ratification of the Kyoto Protocol. Committee for Climate Changes, UNFCCC Focal Point, as well as institutions and individuals, tried to initiate ratification of Kyoto Protocol on several occasions, but the official procedure, which should be initiated by the Ministry of Foreign Trade and Economic Relations, has never been started. Problems are lack of professional institutions, as well as giving low priority to the climate changes issues.

Today, Bosnia and Herzegovina does not have any regulations/legal framework, which would enable implementation of the Kyoto Protocol mechanisms. Also, there are some plans and ideas for CDM projects, but those are partial and on entity levels.

7. Conclusions

Bosnia and Herzegovina, as a Party to the UNFCCC, has participated in the work of Conference of the Parties (COP6 to COP10) and has carefully analyzed its obligations towards the Convention, such as commitment to prepare its Initial national communication and other obligations. Unfortunately, after the war activities that have occurred during the last decade, Bosnia and Herzegovina, as a developing country, found itself in a quite difficult economic situation, and cannot deal with climate change issues without international financial assistance.

Analyses of the present state of affairs indicate insufficient capacity for implementation of activities, measures and Programs under UNFCCC and Kyoto Protocol.

Furthermore:

- The existing post-war economic difficulties are exacerbated in B&H by institutional and human resources capacity constraints. Limited legal and administrative capacity for By-laws preparation in the area of data collection, quality control and quality assurance, emission inventory updates and reviewing of the National Communication and GHG emissions inventory, as well as insufficient administrative capacity, represent a significant constraint.
- Bosnia and Herzegovina also lacks of necessary equipment for data collection, archiving, management and web presentation.
- Lack of funding for emissions research (particularly emission factor calculation) constrains methodological capacity. Respondents reported

that international expertise, technical and funding assistance was important for future strengthening of institutional capacity.

- Additional resources are needed to conduct the experiments and field tests necessary to establish emission factors for new gases. Additional resources are also needed in order to take advantage of IPCC training opportunities.
- Bosnia and Herzegovina does not have GHG inventory emission compiled in accordance with IPCC methodology.

Recommendations

Potential actions at the governmental level of Bosnia and Herzegovina and entity levels include the following:

- As a Non-Annex I Party, Bosnia and Herzegovina requested necessary financial support from GEF for preparation of the First National Communication of B&H to UNFCCC, including GHG emission inventory. GEF and financial and technical assistance from another bilateral and multilateral arrangement would be valuable for capacity building to deal with climate change issues;
- Incorporation of specific greenhouse gases into data collection system;
- Increasing staff numbers and financial resource levels for the collection of activity data and sector emissions data as well as quality control of emission inventory;
- Ensuring timely publication of national emissions statistics;
- Systematically defining institutional responsibilities for national GHG inventory emission compilation on the continual basis;
- Increasing funding levels to allow staff training, emissions estimates and emission factors calculation research, research and national GHG emission projections, creation and implementation of systems for inventory emissions review by independent expert-team, and improvement of data archiving quality;
- Continuous investment in hardware and staff capacity for data collection, measurement and management, with the aim to improve

quality of emissions data for landfills, sewage, and industrial processes;

- Continuous investment in the basic infrastructure system, including meteorological and hydrological observation and telecommunication system, as the integral part of WMO/World Weather Watch and Global Climate Observing System, in order to upgrade technology for systematic climate observation, data collection, processing and exchange and archiving.
- Issuing authorizations for single database archive of emissions data to be created in appropriate institution;
- Construction of the national GHG inventory Web site;
- Enhance awareness and knowledge on climate changes, their possible impacts, and other related issues in B&H;

8. Bosnia and Herzegovina Capacity Building needs and priorities related to the implementation of UNFCCC and the Kyoto Protocol

Country report for Bosnia and Herzegovina indicates that international community can take specific steps to increase Bosnia and Herzegovina's capacity for compliance with the UNFCCC and Kyoto Protocol Mechanisms.

Actions might include the following Specific needs:

1. Institutional capacity

- 1.1 Financial and methodological support to improve coordination strengthening of existing institutions at the national level (Strengthening of national UNFCCC Focal Point and National authority designated to coordinate climate change activities under the Kyoto Protocol; Strengthening of coordination and advising bodies: National Climate Change Committee/Subcommittee and Technical Secretariat on Climate Change; Setting up local self-management).
- 1.2 Financial assistance for administrative capacity building to prepare by-law and methodology preparation in the fields of environmental statistics, emission inventories, GHG national emission inventory compilation, establishing quality assurance/quality control system (QA/QC system) including data archiving;
- 1.3 Financial assistance for technological capacity building in the fields of systematic climate observation, data collection, processing, archiving, climate database development and climate change analysis and forecasting (meteorological, hydrological and other relevant instruments and equipments, hardware and software, etc.);
- 1.4 Participation of stakeholders - Strengthen relevant and key research institutions and NGOs;

2. Human resource development

- 2.1 Financial support for training national experts and policy makers;
- 2.2 Assistance for involvement of more officials in the negotiation process under the UNFCCC and Kyoto Protocol and participation in international/regional meetings;
- 2.3 Assistance for Technical training for extending the base of experts familiar with climate change; Expert assistance in the establishment and use of methodological best practices (e.g., emissions factors, uncertainty evaluation, peer review, and quality control procedures);
- 2.4 Financial assistance for staff to take advantage of UNFCCC, IPCC, WMO, GCOS and other international institutions training opportunities related to: climate change impacts studies and projections, vulnerability, adaptations and mitigation assessment; national GHG emission inventory preparation and reporting;

3. Knowledge, information and methodologies

- 3.1 Financial support to develop National Framework for Climate Change Strategy and Action Plan related to implementation of UNFCCC and its Kyoto Protocol;
- 3.2 Financial support to develop the National CDM Strategy;
- 3.3 Assistance for climate change web-site creation and maintenance in order to improve access to information on state-of-the-art climate change information, methods and software;
- 3.4 Financial assistance for strengthening awareness and knowledge on global warming induced by anthropogenic GHG emission and possible impacts of climate change.

Increasing investments in building capacity in the priority areas identified above and international aid are vital for Bosnia and Herzegovina to overcome barriers in meeting its obligations under the climate convention.

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