

MODERATION OF THE NATIONAL WORKSHOP IN BOSNIA AND HERZEGOVINA

Deliverable on activity 1.1.1.1 : " Identify existing CV&C monitoring program and available data in each participating country, as well as options for data sharing in view of developing a multicountry Information sharing portal".

Project title

"Integration of climatic variability and change into national strategies to implement the ICZM protocol in the Mediterranean"

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Hosted by Bosnia and Herzegovina, Sarajevo, April 23 & 24,
2013.

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Introduction

1. Bosnia and Herzegovina is a party to the Barcelona Convention, and the country adopted as early as 2005 a NAP for the reduction of marine pollution caused by land-based activities. Since November 2009 with the Marrakesh Declaration adopted by the Contracting Parties to the Barcelona Convention, one major focus targets regional coordination and enhanced cooperation in the adaptation to climate change.
2. As a reminder, during the period 2031–2060, climate change is expected to seriously impact Bosnia and Herzegovina, with the temperature projected to raise from 0.7 to 1.6 °C for each 1 °C increase at the global level. This could result in sea level rise, coastal erosion and more severe flooding. For this reason, an Integrated Coastal Zone Management (ICZM) action plan, from 2010 to 2015, includes various initiatives for adaptation to climate change.
3. The Mediterranean Integrated Climate Information Platform (MedICIP) is the first pillar I of the UNEP MAP (Mediterranean Action Plan) and the Plan Bleu project towards a regional adaptation framework for climate change in the Mediterranean. Its purpose is to “develop knowledge, data acquisition and exchange of information on climate variability and change in the Mediterranean region, on the expected impacts (on society, the economy and natural resources), on vulnerability and on adaptation measures, and document good practices of integrated climate risk management and climate adaptation in support to the Integrated Coastal Zone Management (ICZM) in the Mediterranean Basin, to facilitate the information exchange and to enable scientists, the civil society and policy makers to access these data”.
4. At the same time, it is important to bear in mind the European context, especially for the North Mediterranean countries involved in MedICIP: in addition to Bosnia and Herzegovina, three other countries are involved in the project: Albania, Montenegro and Croatia, the latest becoming a new EU Member country from July 1st, 2013. The EU member countries with Mediterranean coastal zones are similarly committed through a platform called Climate-Adapt¹.
5. Having said that, it must be added that the context of Bosnia and Herzegovina is specific compared to the other North Mediterranean countries involved in the “Integration of climatic variability and change into national strategies to implement the ICZM protocol in the Mediterranean” project, for three main reasons:
 - 5.1. First and above all, the geographical patterns of the Bosnian coastal zones, with a coastline of circa 25 kilometers, but with a more important inland, parallel to a long coastline belonging to Croatia, make it an unusual case.
 - 5.2. The second pattern of Bosnia and Herzegovina regards its specific institutional and political organization.

¹ <http://climate-adapt.eea.europa.eu>

- 5.3. Finally, although the country is committed at the international level, there is no special legislation on climate change in force in Bosnia and Herzegovina either at the State or entity levels.
6. This report is presenting the results of the national workshop held in Sarajevo, April 23 and 24, 2013, to validate the inputs of the country – in terms of data, indicators, sources of information, etc. – to the MedICIP portal.

Objectives and expectations of the workshop

7. The objectives of the workshop are taken from the document that was circulated to the participants with the agenda, and splitted into three specific objectives
8. Objective I. Review of the existing and missing data with the national report as a starting point
 - Present the main points of the national report prepared during the inception phase.
 - Discuss about the compilation of the existing monitoring programmes on CVC.
 - Select the available data that can be shared in order to feed the MedICIP portal.
 - Identify gaps.
 - Define modalities of data extraction and sharing options.
9. Objective II. Present the MedICIP Portal (content, objectives, modalities, users' needs)
 - Present and discuss contents of the portal (MedICIP).
 - Analysis of users' needs and metadata: form (table, graph, and links towards reports...) and topic/sector (water, agriculture, tourism,).
10. Objective III. Start selecting relevant indicators
 - Review the first selection of indicators.
 - Suggest a core set needed for the country.
 - Discuss indicators and data: which methodology for the selection?
11. The expectations were also clearly presented in the documentation and at the beginning of the workshop.
 - Production of a working factsheet for the analysis of user's needs which will be taken into account in the MedICIP portal items.
 - National report completed with the concerned institutions.
 - Validation, by the participants, of data and gaps highlighted in the report.
 - A draft of a first core set of indicators.
12. The agenda of the workshop is presented in Annex I. In total, 12 experts participated to the workshop, which was co-chaired by Mr. Senad Oprašić, Head of the Department of Environmental Protection, Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina and by Alexandre Borde, from Plan Bleu. The facilitation were organized by Rijad Tikvesa, from Ekotim, and the translation by Abdulla. The next sections present the results of the workshop.

BiH data available and gaps

13. The fourth session took the form of a working session with participants reviewing in details the national report and its summary (also called Fact Sheet). It enabled also to inventory the existing data and identify missing information.
14. Several participants mentioned that at the State level, there is no active monitoring system, for instance to verify compliance with regulations concerning any environment and state of the environment because such activities are regulated by provisions of the Entities.
15. The table below presents the key sectors vulnerable to climate change, as identified in the Initial National Communication from 2009, and reminded by the participants.

Vulnerability of BiH to climate change in key sectors
Land: Inability of some ecosystems and species to adapt to rapid climate changes. Soil degradation due to decrease in water supply.
Coastal area: Erosion risk and soil deficiency due to sea level rise. Increase in water temperature.
Water management: Changes in seasonal river flows, decrease in the quantity of water flow in rivers and difficulties in water supply for households and industry.
Agriculture and cattle breeding: Change in the precipitation regime and in seasonal air temperatures. Decrease in arable land area. Lack of snow cover for protection of winter crops.
Forestry: Loss of biodiversity due to climate change. Increased vector activity and occurrence of plant diseases.
Mining and energy: A long-term decrease in coal demand. Changes in the pattern of seasonal demand for electric power. Inadequate water supplies in the accumulation reservoirs of hydroelectric power plants due to changes in precipitation.
Tourism: Decrease in the potential for winter tourism.
Economy and trade: Changes in supply and demand. Risk of losing raw materials for production. Decrease in the export capacity of goods and services. Increase in the import of equipment and goods.
Infrastructure: System of settlements and buildings is inadequate for anticipated behavioural changes resulting from climate change. Increased risk of traffic accidents during summer. Increased risk of self-ignition of landfills, landslides, flooding and water shortages.
Health and social status: Chronic and acute health impacts and higher occurrence of airborne allergens. Changes in working conditions and risk of job losses. Intensified migration to urban areas.
Education: Lack of knowledge and skills to cope with climate change and its related impacts.
Socio-economic development: Pressures from endangered industrial branches and endangered social groups.
<i>Source: Initial National Communication (2009)</i>

16. Using the categories of indicators as presented in the slides and the most vulnerable sectors to climate change, the relevant institutions gathering or able to elaborate these indicators were listed. These data, indicators and institutions are proposed for their publication within MedICIP.

Type of indicators	Institutions	Website
Meteo-data	Federalni hidrometeorološki zavod BiH Republički hidrometeorološki zavod RS	http://www.fhmzbih.gov.ba http://www.rhmzrs.com
Marine & coastal zone	Agencija za vodno područje Jadranskog mora (AVP)	http://www.jadran.ba
Biodiversity & ecosystems	Federal Ministry for environment and tourism (FP for CBD : Mehmed Cero & Senka Barudanović)	http://www.fmoit.gov.ba
Terrestrial/Coastal ecosystems	HEIS (Hydro-Engineering Institute Sarajevo) FMAWMF (Federal Minister of Agriculture, Water Management and Forestry) (FP for Barcelona Convention and MAP : Tarik Kupusović)	http://www.fmpvs.gov.ba http://www.heis.com.ba
Hydrology and water resources	Agencija za vodno područje Jadranskog mora (AVP) HEIS (The Hydro-Engineering Institute Sarajevo) FHMI (Federalni hidrometeorološki zavod BiH) Republički hidrometeorološki zavod RS	http://www.jadran.ba http://www.heis.com.ba http://www.fhmzbih.gov.ba http://www.rhmzrs.com
Economy data	Agencija za statistiku (BHAS) Agency for civil protection (ACP)	http://www.bhas.ba http://www.fucz.gov.ba/fucz
Agriculture data	FMAWMF (Federal Minister of Agriculture, Water Management and Forestry)	http://www.fmpvs.gov.ba
Human wealth	Ministry of health Federation B&H (MHFBIH) Ministry of health of Republika Srpska (MHRS) Institutes for public health (IPH)	http://www.fmoh.gov.ba http://www.vladars.net http://www.zzjzfbih.ba
Climate and GHG		http://www.unfccc.ba

Outputs and recommendations

17. There was a general consensus about the conclusions from the national report (January 2011 by Aleksandar Knežević and Vedad Suljić), with some updates to be made. The table below is presenting the primary and secondary adaptation measures proposed in the report.

Key Sector	Vulnerability	Primary adaptation measures	Secondary adaptation measures
Coastal area	Erosion risk and soil deficiency due to sea level rise Increase in water temperature	Inclusion in the coastal zones management programmes of the Republic of Croatia	Reduction in anthropogenic impacts on the coastal and sea areas.
Water management	Changes in seasonal river flows Decrease in the quantity of water flow in rivers Difficulties in water supply for households and industry	Construction dams and accumulation reservoirs for hydropower generation, agriculture, drinking water, tourism, fish-farming, etc.	Training on the efficient use of water and reduction of losses in distribution Strengthening the system of water quantity monitoring and forecasting; Development of a Hydrological Information System

18. The country is preparing an adaptation strategy and the MedICIP project is seen as a very useful tool to finalize the strategy.
19. It is recommended that the Plan Bleu continues to work with the national Ministry of Foreign Trade and Economic Relations (MoFTER) as this is the obvious interface with the complex institutional situation of the country. The nature of the institutions may though be a cause for delays. Still, the MoFTER is in the right position to give to the Plan Bleu the authorizations to publish on MedICIP the proper information about Climate Vulnerability and Change in ICZM.
20. The country is a candidate to the European Union. Hence, the cooperation with MoFTER should also follow the lines of the EU Acquis. Annex III is presenting the most relevant answers of Bosnia and Herzegovina in relation to the MedICIP.

Annexes

Annex I. Program of the workshop

April 23, 2013	
9:00-9:30	Introduction for opening of the workshop (<i>Senad Oprašić, Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina</i>)
9:30-9:50	1. Presentation of the scope and objectives (<i>Alexandre Borde, consultant, Plan Bleu</i>) <ul style="list-style-type: none"> ➤ Reminder of the objectives of the project and those of the national workshop ➤ Agreement on the objectives of the workshop
9:50-10:00	Round table
10:00-10:30	➤ Presentation of the national report about « Climatic variability and change into national strategies to implement ICZM Protocol » and introduction of the main part of the national report (<i>Senad Oprašić, Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina</i>)
10:30-11:00	Discussion
11:00-11:30	Coffee break
11:30-12:10	2. Presentation of the possible content of the MedICIP portal and the indicators (<i>Alexandre Borde, consultant, Plan Bleu</i>) <ul style="list-style-type: none"> ➤ Presentation of the functionalities and contents of MedICIP. ➤ Presentation of the first possible set of indicators and discussion about the methodology for their selection.
12:10-12:30	Discussion
12:30-14:00	Lunch time
14:00-16:30	3. Analyse of users' need (<i>Alexandre Borde, consultant, Plan Bleu</i>) <ul style="list-style-type: none"> ➤ Updating of the national report and the fact sheet ➤ Working session on data availability, data gaps, sources of raw data ➤ Identification of the main institutions involved in information related to adaptation to climate change: <ul style="list-style-type: none"> - What kind of data will be available and could be exchanged? - What are the data networks in the country? - How do they work? - Data sharing options.
April 24, 2013	
9:30-10:30	Results of the working session and conclusions (<i>Senad Oprašić, Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina</i>)
10:30-12:00	Next steps (<i>Alexandre Borde, consultant, Plan Bleu</i>)

Annex II. List of participants

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Some pictures from the working session



Annex III. Abstracts from the “ANSWERS TO THE LIST OF EU QUESTIONS ON CHAPTER 27 ENVIRONMENT”, October 2012 (pages 143 to 145, pages 157 to 159, pages 166 to 168).

1. Are there measures providing for public access to environmental information upon request and by public authorities of their own initiative (so called “active dissemination”)? Are there provisions on administrative and/or judicial review in case access to information is not granted? Does Bosnia and Herzegovina Law cover information “held for public authority”, i.e. environmental information which is physically held by a natural or legal person on behalf of a public authority (Article 2, Item 4 of Directive 2003/4/EC)?

At the state level, certain measures have been prescribed providing for public access to information about the environment, both at the request and on initiative by the public authorities pursuant to the BiH Freedom of Access to Information Act²⁰⁶ which was adopted by the Parliamentary Assembly in October 2000. Freedom of Access to Information Act represents a significant contribution to the process of democratization. It regulates the procedure of access to information held by public authorities, which reflects their transparency, openness and accountability. It should be emphasized that the Act covers all the information and it is not focused only on information related to environmental issues. Thus, the Act guarantees the right of free access to information, which is a brand new law Bosnia and Herzegovina. The Act contains a definition of ‘information’. ‘Information’ means ‘any material which communicates facts, opinions, data or any other content, including any copy or portion thereof, regardless of form, characteristics, when it was created, or how it is classified’. The Act also clearly defines ‘public authority’. Public authority is any executive, legislative, judicial or administrative authority or any authority appointed or established by law to carry out a public function. The Act governs the access to information that is in the control of the bodies of administration as well as their obligations in this respect. Article 4 stipulates the following: ‘Every natural and legal person has the right to access information in the control of a public authority, and each public authority has a corresponding obligation to disclose such information. This right of access may only be subject to such formalities and restrictions as are prescribed by this Act’. Therefore, the right of access to information held by the public authority is not unlimited. The law specifically enumerates exceptions for which a public authority may refuse to provide information. Such exemptions apply to the information held by public authorities relating to certain special functions of public authority, confidential commercial functions and the protection of privacy of a third person. Each individual case is considered separately. Any requester for the access to information, if dissatisfied with the decision of the competent authority, has the right to file an administrative appeal. The appeal is submitted to the head of the public authority that issued the decision. Article 25 prescribes the responsibility of the Council of Ministers of BiH for the implementation of the Act, which is largely in conformity with the relevant provisions of the Aarhus Convention. The work of the Food Safety Agency of BiH is governed by one of the fundamental principles in the field of food safety, as prescribed by the Food Law²⁰⁷. It is the principle of transparency (openness and reporting to the public) which is reflected in BiH in open and transparent public consultation with all stakeholders, constant communication with the public and all interested parties, their participation in public debates during the legislative drafting process, continuing press statements to provide the public with timely and accurate

²⁰⁶Official Gazette of BiH, no. 28/00

²⁰⁷ Official Gazette of BiH, no. 50/04

information about the observed health risks, participation in the assessment of risk to human health as well as providing a response and delivery of information to the interested parties.

Measures providing for public access to information are specifically regulated by the Entity legislation in a manner as described below.

Republika Srpska

Measures providing for public access to information under the control of public authorities in the Republika Srpska are defined by the Freedom of Access to Information Act²⁰⁸.

RS Environmental Protection Law (from Article 33 through Article 38) regulates the issue of public participation and access to information related to the environment, which, *inter alia*, provides for the obligation of the competent authorities to respond to the request (of any person, including government bodies) for information about the environment and to make such information available to the public. The Law provides for the right of any person to bring action to protect his/her rights, if deemed that the request for information was not considered, that it was wrongfully refused, that the response was either incomplete or inadequate (Article 41). The Act also provides for the protection of certain information.

A request for access to information on the environment may be refused if disclosure of information would have a detrimental impact on:

- a) international relations, defence or public safety,
- b) the course of justice, the right to fair trial or the ability of a public authority to conduct an enquiry of a criminal or disciplinary nature,
- c) the confidentiality of commercial and industrial information, as well as information on emissions which is relevant for the protection of the environment, where such confidentiality is protected by law in order to protect a legitimate economic interest,
- d) intellectual property rights,
- e) the confidentiality of personal data and/or files relating to a natural person where that person has not consented to the disclosure of the information to the public, where such confidentiality is provided for in the law,
- f) the interests of a third party which has supplied the information requested without that party being under a legal obligation to do so, and where that party does not consent to the release of the material, and
- g) the environment to which the information relates, such as the breeding sites of rare species.

The reason of refusing a request to access information must be explained. If an administrative authority does not hold the requested information, it is obliged to forward the request, as promptly as possible, to the authority which may have the requested information and to inform the requester accordingly.

Article 93 of the RS Law on Chemicals defines public access to certain data on chemicals obtained at the time of entering the chemicals into the inventory of chemicals. Article 94 of the Law defines which data may not be available to the public whereas Article 95 defines the conditions under which certain public data may be assigned a certain degree of confidentiality. Article 96 defines the obligation of all persons employed in the RS Ministry of Health and Social Welfare as well as other officials who have access to certain classified information to keep such data in accordance with applicable legislation.

²⁰⁸Official Gazette of RS", no 20 /01

Article 57 of the RS Law on Biocides defines that data provided to the ministry in the process of placing biocidal products on the market and their use are publicly available. The same article defines the conditions under which the data may be assigned a certain degree of confidentiality whereas Article 58 defines data that may not be classified as a business secret.

The Law on Waters²⁰⁹ defines public participation in decision-making process related to the water issues, including public access to complete, accurate and timely information on the state of waters, on the activities undertaken by persons who use or pollute the waters and the activities undertaken by the competent authorities and institutions.

Federation of BiH

The FBiH Law on Environmental Protection²¹⁰ regulates the issue of public participation and access to information related to the environment, which, among other things, stipulates the obligation of the authorities to make the information on the environment available to the public upon the request of all persons, including government authorities, for access to such information. The law provides for the right of any person to bring action to protect his or her rights, if deemed that the request for access to information was not considered, that it was wrongfully refused or that incomplete or inadequate response was provided (Article 38). It also provides for the protection of certain information.

A request for access to information on the environment may be refused if disclosure of information would have a detrimental impact on:

- a) international relations, defence or public safety,
- b) the course of justice, the right to fair trial or the ability of a public authority to conduct an enquiry of a criminal or disciplinary nature,
- c) the confidentiality of commercial and industrial information, as well as information on emissions which is relevant for the protection of the environment, where such confidentiality is protected by law in order to protect a legitimate economic interest,
- d) intellectual property rights,
- e) the confidentiality of personal data and/or files relating to a natural person where that person has not consented to the disclosure of the information to the public, where such confidentiality is provided for in the law,
- f) the interests of a third party which has supplied the information requested without that party being under a legal obligation to do so, and where that party does not consent to the release of the material, and
- g) the environment to which the information relates, such as the breeding sites of rare species.

The reason of refusing a request to access information must be explained. If an administrative authority does not hold the requested information, it is obliged to forward the request, as promptly as possible, to the authority which may have the requested information and to inform the applicant accordingly. The Law on Waters (Article 38) regulates the issue of public consultation when drafting water management plans and Article 124 of the Law regulates the issue of informing the concerned parties and the public of the pending request for the issuance of water law act.

²⁰⁹Official Gazette of RS, no. 50/06

²¹⁰Official Gazette of FBiH, no. 33/03

3. Do standardised systems or methods for gathering, transferring and reporting of data and statistics concerning the environment exist?

At the level of BiH, there is no standardized system of data transmission and reporting of data and statistics related to the environment in accordance with the relevant EU legislation (there is no national environmental information system). There are individual systems of collecting and reporting data in the environmental field. Statistical institutions in BiH collect data on the state of the environment through the implementation of the annual Program of Statistical Surveys, which implies a detailed framework relating to the coordination, harmonization, planning, collection, production and dissemination of statistical data of BiH. Detailed indicators of environmental statistics are available to professionals and the general public and these are classified by date of publication indicated in the Publishing Program and the Calendar of publishing statistical data and other publications of Agency for Statistics of BiH. These are published in electronic and printed forms pursuant to the European Statistics Code of Practice which requires timely dissemination of data. In accordance with the Law on Statistics of BiH²³⁸, the Agency for Statistics of BiH represents BiH at the international level and executes international obligations of BiH in the field of statistics. Accordingly, the Agency for Statistics of BiH performs international reporting and reporting to Eurostat including available water data, waste statistics and other available information. The Agency for Statistics of BiH is also responsible for establishing statistical standards for the implementation of the Program of Statistical Surveys, which includes measures necessary to harmonize statistics at the level of BiH in order to achieve the best quality and comparability of results, including those related to statistical techniques, classification, nomenclature, definitions and other applied implementing standards and practice. In addition to the Agency for Statistics of BiH, the Food Safety Agency of BiH has established a system for collecting,

²³⁸Official Gazette of FBiH, nos. 2/98 and 48/99

²³⁹Official Gazette of BiH, no. 26/04, Article 8

processing and analyzing data in the field of food safety given its competence defined in Article 53 of the Food Law²⁴⁰. Pursuant to the Law, the Agency is authorized to seek, gather, compare, analyze and summarize scientific and technical data in the fields under its purview in cooperation with the competent authorities in Bosnia and Herzegovina. These data refer to the findings of the laboratory food control in BiH, diseases transmitted by food, the registry of operators in the food business, information from the Rapid Alert System for Food and Feed (RASFF, INFOSAN WHO / FAO) and risk assessment. They are regularly collected, processed and analyzed, and submitted to the competent authorities in Bosnia and Herzegovina on semi-annual and annual bases. Subsequently, they are submitted in the form of Information to the Council of Ministers for consideration and adoption.

Republika Srpska

The RS Ministry of Spatial Planning, Civil Engineering and Ecology is responsible for establishing, managing and developing *information systems for environmental protection*, and it collects and integrates environmental data. System for data collection on the environmental pollutants is prescribed by the Rules on the methodology and manner of keeping the register of installations and pollutants-PRTR²⁴¹. Data from 2007-2010 have already been entered whereas data entry for 2011 is underway.

Collection and processing of data on *air quality* is done in the RS Hydrometeorology Institute in accordance with the Rules on monitoring the air quality²⁴² while the data on emissions of pollutants are collected by means of the PRTR survey questionnaire and the questionnaires LU-DM, PI-SVA, PI-VAN, PP-TP, TI-SA, TI-SVA according to the Rules on the methodology and manner of keeping the register of installations and pollutants²⁴³. Greenhouse gas inventory is developed by applying the IPCC methodology. However, the rules on the methodology of data collection have not been prepared so the data have been collected periodically and occasionally by mail.

Hydrology Department is responsible for collection of data on water levels and flow gauging stations on rivers in the RS. It sends newsletters related to hydrology to the users via fax or electronic mail. The collected data is published according to the usual procedure in regular and special edition of hydrological bulletin. These are posted on the website of the Institute: www.rhmzrs.com).

Data related to the water level are collected via the automatic hydrological stations which measure the water level or take reading from the water level gauge. The flow is measured by hydrometric wing according to the prescribed methodology of measuring and the flow of larger streams is performed by ADCP (Acoustic Doppler Current Profiler), a device for measuring the flow rate. All collected data are stored in the database of the Institute and statistical analysis and data processing are performed. These data are delivered to the users as required.

The RS Statistics Institute is responsible for the collection, production and dissemination of statistical data related to the situation in certain areas, including environmental protection (the RS Law on Statistics²⁴⁴ and Statistical Work Program adopted for a period of four years by the Decision of the National Assembly of RS). The Institute also delivers data to the Agency

²⁴⁰Official Gazette of BiH, no. 50/04

²⁴¹Official Gazette of RS, no. 92/07

²⁴²Official Gazette of RS, no. 39/2005

²⁴³Official Gazette of RS, no. 92/07

²⁴⁴Official Gazette of RS, no. 85/03

for Statistics of BiH, i.e. provides data for the production and dissemination of data for BiH in accordance with the Law on Statistics of BiH²⁴⁵. With regard to the environmental statistics, the Institute conducts annual survey of water and waste statistics. Water statistics includes data on the public water supply systems, public sewer system and water use in the industry whereas the waste statistics implies collection of data on utility and industrial waste in the RS.

Data are collected from the annual reports submitted by the companies or by reporting units as defined in the methodology of each survey study. When producing environmental statistics, the Institute takes into account the uniform methodology and uniform statistical standards consistent with the accepted standards of BiH and the United Nations for Europe, as well as legal acts of the European Union contained in the statistical compendium. Collected and processed data are regularly published in the form of statistical statements on the website of the Institute and delivered to the users as requested. The Institute submits annual reports on the implementation of the Work Plan to the RS Government. The report contains information about the results of statistical activities and problems related to the Work Plan.

Federation of BiH

FBiH Statistics Institute is responsible for collecting, compiling and disseminating statistics on the state of the environment, which is regulated by the FBiH Law on Statistics²⁴⁶ and the Program of the Statistical Surveys of the interest to the Federation of Bosnia and Herzegovina for the period 2009 - 2012²⁴⁷. FBiH Statistics Institute submits data to the Agency for Statistics of BiH in accordance with the BiH Law on Statistics²⁴⁸.

With regard to the environmental statistics, the FBiH Statistics Institute conducts regular annual water and waste statistical surveys. Water statistics includes data on the public water supply systems, public sewer system and water supply and use in the industry. Waste statistics implies collection of data on utility and industrial waste in the Federation of Bosnia and Herzegovina. Data are collected from the annual reports submitted by the reporting units as defined in the methodology of water and waste statistics.

Data are collected by application of the methodology and the uniform unique statistical standards consistent with accepted standards of BiH, the United Nations for Europe and EUROSTAT. Statistical data are regularly published in the form of statement posted on the website of the FBiH Statistics Institute and published in FBiH Statistical Yearbook.

Brčko District of BiH

Agency for Statistics of BiH - Branch Office Brčko became an integral part of the Agency for Statistics of BiH in 2006, pursuant to the Government's decision. Agency for Statistics of BiH - Branch Office Brčko regularly publishes Statistical Bulletin in order to inform the competent authorities and institutions of BD BiH and other users about the basic statistical data and indicators in BD BiH. Publications are made on the basis of available statistical data and in accordance with the Program of Statistical Survey of the interest to the BD BiH.

8. Could you briefly describe the activities your country takes part in the framework of the European Environment Agency and Eionet?

Although it is not a member of the European Environment Agency (EEA) / European Environment Information and Observation Network (EIONET), Bosnia and Herzegovina cooperates with it. BiH has improved data reporting to the EEA, and currently it provides about 65% of the required data. BiH participates in the UNECE Working Group for Monitoring and Environmental Assessment, which assists countries in transition to strengthen their capacity for monitoring and evaluation. For the purposes of the regional project "Building Shared Environmental Information System elements in the West Balkan countries based on the EEA Core Set of Indicators", the BiH Agency for Statistics has coordinated the activities among the relevant institutions in the country to collect data for calculating the EEA core set of 37 indicators. It also updates the indicators that have already been developed.

Active participation of the BiH Agency for Statistics is reflected in the drafting of the EEA regional publication for the Western Balkans (West Balkan Environmental Core Set of Indicators, 2012). Activities on these issues are coordinated and managed by the EEA Focal Point that is seated in FBiH.

Federation of BiH

Focal Point for BiH (NFP - National Focal Point) for the activities within Eionet and cooperation with the European Environment Agency (EEA) is the FBiH Ministry of Environment and Tourism. This ministry coordinates all institutions (National Reference Centre) for various thematic areas and experts (Primary Contact Person). One of the most important activities related to the EIONET system is annual reporting of priority data (Priority Data Flow), where BiH has a record of achievement in the past period of cooperation (since 1998). The institutions that are temporarily and unofficially included in the relevant thematic EIONET activities, until the establishment a formal system and the competent Agency for the Environment, are as follows:

For waters:

- FBiH Hydrometeorology Institute,

- Agency for the Sava River District
- Agency for the Adriatic Sea District

For air quality:

- FBiH Hydrometeorology Institute,

For soil:

- FBiH Agropedological Institute and Faculty of Agricultural and Food Sciences Sarajevo,

For waste:

- FBiH Statistics Institute,

For nature and biodiversity:

- Faculty of Science -CEPRES

FBiH Hydrometeorology Institute regularly, on an annual basis, processes and sends data on air quality from all stations in BiH from which it is possible to collect valid data. Data are transmitted via a computer program DEM. Reports on the ozone concentrations are sent on a monthly basis as well, from April to September each year. Since 2001, the FBiH Hydrometeorology Institute has performed the role of the National Reference Center (NRC) with regard to waters in BiH in the EIONET reporting system of the European Environment Agency (EEA). In cooperation with other agencies for water catchment areas in the FBiH and the Water Agencies for the Sava District in RS (Water Agencies in BA Eionet structure representing "Main Component Elements"), data are collected and annual reports developed with regard to:

- quality of surface waters - River quality (EWN-1),
Data on the rivers are regularly collected on an annual basis through the process of EEA WISE-SoE. This process was formerly known as EUROWATERNET (EWN) and EIONET Water. The following data are collected and sent:
 - physical characteristics of the monitoring stations;
 - chemical parameters - nutrients and organic matter;
 - hazardous materials in rivers.
- Lake quality (QWN-2)
Data on the rivers are regularly collected on an annual basis through the process of EEA WISE-SoE. This process was formerly known as EUROWATERNET (EWN) and EIONET Water. The following data are collected and sent:
 - physical characteristics of the monitoring stations;
 - chemical parameters - nutrients and organic matter;
 - hazardous materials in lakes.
- Groundwater quality (EWN-3)
Data on groundwater are regularly collected on an annual basis through the process of EEA WISE-SoE. This process was formerly known as EUROWATERNET (EWN) and EIONET Water. The following data are collected and sent:
 - physical characteristics of the monitoring stations;
 - chemical parameters - nutrients and organic matter;
 - hazardous materials in lakes.
- Quality of sea water - Marine data (ME-1)

Marine data are regularly collected on an annual basis through the process of EEA WISE-SoE. This process was formerly known as EUROWATERNET (EWN) and EIONET Water. The following data are collected and sent:

- quality of bathing water at three beaches in Neum, during the summer season for swimming;
- transmission of loads of nutrients and hazardous substances in the river Neretva near Žitomislići

All the reports are developed following the EEA instructions and the required Excel form and transmitted in a timely manner for the EEA web site. They are available to the public on the CDR portal of the EEA.

78. Which ministries and/or governmental agencies are responsible for the development, implementation and monitoring of climate change policies and measures? Do they have clear mandates to perform these tasks? Do they have sufficient human and material resources? Have these resources been strengthened in recent years and what plans exist for further strengthening?

Ministries and/or government agencies responsible for the development, implementation and monitoring of policies and measures pertaining to climate change are the BiH MoFTER, the FBiH Ministry of Environment and Tourism, the RS Ministry of Spatial Planning, Civil Engineering and Ecology and the Government of Brčko District of BiH. Mandates are defined through decisions, such as the BiH CoM's decision on the establishment of DNA for CDM projects, and through other rules and bylaws at the level of Entities and BD BiH. As with all environmental activities, in terms of climate change we can also say that human and material resources at the BiH level are insufficient to meet many obligations that BiH must fulfil. It is generally envisaged MoFTER will form a Department for Environment, which would have some of the staff responsible for activities related to the issues of climate change.

Republika Srpska

According to the BiH Constitution, main competences and responsibilities of competent administrative organizations in the field of environmental protection and natural resources are at the Entity level, and the implementation of strategic policy and international relations, including the signing and implementation of international multilateral and bilateral treaties and agreements is under the competences of the state level institutions.

In accordance with the provisions of the Law on the Procedure for Signing and Implementation of International Treaties⁵⁸⁴, MoFTER has coordination responsibility for activities of international relations pertaining to environmental issues, including climate change. Consensus building and decision-making involves the state authorities, two Entities and BD BiH.

Entity governments in BiH are competent for creation and implementation of policies that are subject of international agreements, and for operational functioning of such policies in the field of environmental protection.

These policies are implemented through relevant ministries, namely: the Ministry of Spatial Planning, Civil Engineering and Ecology in the RS and the FBiH Ministry of Environment and Tourism in FBiH.

On the basis of consensus between the competent Entity ministries and the Department of Municipal Affairs of BD, Ministry of Spatial Planning, Civil Engineering and Ecology of Republika Srpska was set as the contact institution for UNFCCC (focal point in front of BiH).

On the other hand, national focal point for UNFCCC, which by agreement of the Entity ministries for environment is a position within the RS Ministry of Spatial Planning, Civil Engineering and Ecology, is responsible for state obligations under the UNFCCC Convention, including reporting and preparation of national reports for the Convention, representing BiH at the Conference of member states of the Convention, bilateral and multilateral coordination with other member states of the Convention on the implementation of regional programs and projects and direct cooperation with bodies of the Convention. Competences of the state administration in environmental matters is quite limited and reduced to functions that are mainly related to international cooperation and necessary coordination. It is necessary to improve vertical and horizontal cooperation and coordination between competent institutions, which are mechanisms of particular importance for international and national activities. One of the key shortcomings of the state administration in the process of harmonization of implementation of international agreements is failure to meet reporting obligations, designate national focal institutions and monitoring.

Services for monitoring and control of emissions were established within the Hydrometeorology Institute at the level of the RS, but their institutional capacities are not sufficient for establishment of a quality system for monitoring of emissions and development of the register of polluters. In terms of human resources for implementation of activities in the field of climate change, the report submitted by the European Commission to the Council of European Union in 2003, which was developed based on the feasibility study prepared by experts of the European Union in cooperation with the BiH representatives, who were assessing whether the country is ready to open negotiations on Stabilization and Association Agreement with the EU, has shown that the capacities of the BiH authorities for environmental protection are far below the required level. Reviews of the environmental impact (Environmental Performance Review) from 2004 and 20011, which were developed by the United Nations Economic Commission for Europe, contain a similar conclusion. In addition to a comprehensive set of general recommendations, the Commission recommended that building of administrative and technical capacities to carry out activities in the field of climate change should be the priority both within the competent ministries - primarily the focal point, and within individual organizational units for climate change within relevant institutions.

Given the scope of work in the field of climate change, and taking into account the number of employees, we may consider that administration has insufficient number of employees at this point. All activities related to protection of the environment and climate change are carried out in cooperation with other relevant institutions, through programs and projects financed from national, bilateral and multilateral sources. Services and departments responsible for environmental protection and climate change are part of administrative bodies which are also primarily competent for other sectors. Establishment of environmental protection funds has somewhat improved human capacities of institutions. Considering that many national strategic documents define the actions of mitigation and adaptation to changed climate conditions, it was planned to increase material resources at the national level to achieve these actions.

In order to estimate the financial needs for climate change mitigation and develop detailed financial plans, the development has started of the Low Emission Development Strategy (LEDS) and the Strategy for Adaptation to Climate Change (NAS) in Bosnia and Herzegovina.

These strategic documents are being developed within the framework of the Second National Communication for Bosnia and Herzegovina (SNC).

At its 128th session held on 25 December 2000 the RS Government appointed the Ministry of Spatial Planning, Housing and Utility Activities, Civil Engineering and Ecology as the BiH FOCAL POINT for the UN Framework Convention on Climate Change. Appointment was done on the basis of agreement and harmonized positions of governments of FBiH and BD BiH.

Amendments to the Law on Ministries from 2001 renamed the ministry to the Ministry of Spatial Planning, Civil Engineering and Ecology. During the past few years material resources of the RS Hydrometeorology Institute (RSHMI) in the domain of research and monitoring of climate changes were significantly increased in the process of establishment of the basic functions of observation, monitoring and research of climate impacts, vulnerability and adaptation options to changed climate conditions that are directly related to the implementation of the UNFCCC in the field of adaptation. Future development and strengthening of the RSHMI's human resources will be implemented in cooperation with university education institutes and scientific research meteorology institutes through national and regional programs and climate change projects.

Federation of BiH

There are no clearly defined roles of the ministries related to competences for development, implementation and monitoring of policies and actions on climate change. The FBiH Ministry of Environment and Tourism does not have enough human resources. There are no concrete plans for future strengthening in terms of engagement of new employees due to budget limitations. Ministries responsible for the issue of climate change in BiH are the Ministry of Environment and Tourism of the Federation of BiH, the RS Ministry of Spatial Planning, Civil Engineering and Ecology (which is the seat of the focal point for UNFCCC) and the Department of Utility Affairs of BD BiH.

There is a lack of human and material resources. Most visible among the identified shortcomings are: lack of specialized organizational unit for climate change within the framework of relevant institutions, lack of training for staff which would work on fulfilling the conditions of the Convention, and insufficient number of trained experts. Also, in addition to human resources, there are limitations associated with the technical and financial resources such as the lack of technical equipment for measuring and calculation of emissions, lack of a unified unique database (inventory) on GHG emissions, etc.

79. Have national climate change policy, strategies, action plans and measures been adopted? What is their scope (mitigation, adaptation, mainstreaming, sectors, which greenhouse gases)?

The first document that comprehensively tackled the issue of climate change in BiH was the First National Report on Climate Change in BiH, which was completed in 2009, and adopted by the BiH Council of Ministers in 2010. In addition to greenhouse gas emissions calculated for base year 1990, this document gave recommendations for further activities, which are already being implemented. These activities refer to development of the Second National Report, development of strategies for adaptation to climate change, and creating of a framework for the assessment of vulnerability and adaptation to climate change. Prior to this document, a Study of the Energy Sector (2008) was developed at the state level with the support of the World Bank. Chapter 13 of this Study addressed the issue of the environment and the issue of climate change in BiH. This Study provided the context for future legislation

and strategies, policies and action plans in BiH. The Energy Sector Development Plan was adopted in 2008 in FBiH, and the Environmental Protection Strategy and the appropriate action plan for the period 2008-2018 were adopted in 2009.

Republika Srpska

Climate change adaptation measures and measures for inclusion in the sector flows, are an integral part of the strategic goals and objectives in the RS strategic documents: Air Protection Strategy of Republika Srpska and Environmental Protection Strategy (which includes part of the air protection in the Federation of BiH).

Strategy defines needs and measures to strengthen economic and fiscal instruments in environmental protection policy, aimed to support the environmental protection, ensure incentives to reduce pollution and find resources for investment in the improvement of environmental quality. In 2011 the RS adopted the new Law on Environmental Protection Fund and Environmental Protection Financing⁵⁸⁵, which defined the obligations of environmental polluters, including energy subjects whose energy activities emit carbon dioxide, sulphur dioxide, nitrogen oxides and particulate matters into the atmosphere, to pay a fee that will be collected in the Environmental Protection Fund. The First National Report of Bosnia and Herzegovina under the United Nations Framework Convention on Climate Change was developed and the Second National Report under the United Nations Framework Convention on Climate Change is under development. The BiH Low Emission Development Strategy and the BiH Strategy for Adaptation to Climate Change are in preparation.

A number of sector strategies and laws of the RS include measures which contribute to mitigation of climate change and adapting to changed climate conditions:

- a) Strategy for Nature Protection of Republika Srpska,
- b) Energy Development Strategy of Republika Srpska until 2030,
- c) Strategy of Scientific and Technological Development of Republika Srpska 2012-2016,
- d) Strategy for Chemical Safety of Republika Srpska 2012-2016,
- e) RS Agricultural Development Strategy until 2015,
- f) Industry Sector Development Strategy of Republika Srpska for the period 2009-2013,
- g) Law on Waste Management, Energy Law, Law on Oil and Oil Products, Law on Gas, Law on Forests, etc.

Federation of BiH

Individual measures related to climate change issues are part of the FBiH Environmental Protection Strategy and its sector strategies. Reduction of energy intensity and encouraging the use of renewable energy sources are given as operational objectives. Specific measures to be taken for achievement of the above objectives are provided. Part of the Environmental Protection Strategy provides measures for mitigation of consequences of climate change.

80. Are there additional policies and measures on climate change currently under preparation? If so, when will they be adopted and implemented?

Two strategic documents are currently under development in BiH:

1. Low Emission Development Strategy of Bosnia and Herzegovina;
2. Strategies for Adaptation to Climate Change in Bosnia and Herzegovina.

Adoption of these strategies at the BiH level is planned for December 2012. Framework plans for implementation of envisaged measures will be agreed in the further process of consultations with the Entities and BD BiH bodies.

Annex IV. List of presentations and other documents made available during the workshop

- Environmental Performance Reviews, Bosnia and Herzegovina, Second Review, UN Economic Commission for Europe, 2011, 207 pages.
- Answers to the list of EU questions on chapter 27 Environment, Bosnia and Herzegovina, Council of Ministers, Sarajevo, October 2012, 358 pages.
- Bosnia and Herzegovina and Mediterranean, powerpoint presentation by Senad Oprašić, April 23-24, 2013, 24 slides.
- Integracija klimatskih promjena u strategije implementacije Protokola ICZM na Mediteranu – Bosna i Hercegovina, powerpoint presentation by Senad Oprašić, April 23-24, 2013, 20 slides
- State of the Environment report of Bosnia and Herzegovina 2012, Ministry of Foreign Trade and Economic Relations, 260 pages.
- Šematski prikaz vlasti u BiH, pdf document, 6 pages.
- Note on Klimatske Promjene / Climate changes indicators, 10 pages.

Annex V. Fact sheet

Bosnia and Herzegovina

Context

- The BH coastal area cannot be analyzed isolated without considering plans and proposal from the neighboring countries (Federation of BiH, Republic of Srpska and Republic of Croatia and Montenegro). Neretva and Trebišnjica Rivers are fundamental resources for Bosnia and Herzegovina, and are very important for Croatia and Montenegro too.
- B&H has very limited adaptive capacity to address climate risks. Complicated governance structures, a lack of key strategic documents and supporting regulations, limited human resource capacity, and financial constraints lead to very limited capacity to respond to climate threats and adapt to climate change in a systematic, integrated way; i.e., through proactive adaptation measures. At the same time, low public awareness and economic constraints in industry and households limit the capacity of those potentially affected by climate threats to undertake autonomous adaptation measures.
- By the adoption of entity Laws on Environmental Protection (2002/2003), BiH created conditions in which it could begin organized activities in the area of education and awareness-raising, which were to have been gradually implemented through institutional strengthening, inter-sectoral cooperation, and a supportive regulatory framework. On the whole, it may be concluded that until now all these activities have not been well organized, and that the results have been modest.
- Knowledge and awareness of climate change in BiH is not sufficient so currently operational programs to inform the public are under preparation.

Operation (it's also a policy constraints)

- The only state-level ministry that has responsibility for environmental issues – Ministry of Foreign Trade and Economic Relations of BiH (MoFTER) – only deals with selected aspects of environmental issues, primarily those related to international relations.
- BiH does not have the organized system of scientific research so no monitoring of environmental impacts is available

Data available

- A section on GHG Reporting along with BiH Air EIS questionnaires and the Review of the Air Emissions Information System were developed during the EU CARDS-funded "Support to Air Monitoring" project. BiH EIS questionnaires, along with the additional pollutant release and transfer register (PRTR) reporting questionnaire,

should cover all the needs for collecting data for GHG emission calculations in line with the European guidelines.

- A study should cover all hydrological stations in BiH in operation during a reference period (1960 - 1991 as a minimum), and after the war. Updating existing knowledge of the water regime in BiH is very important, including applied research on as-yet-unknown hydrological relationships. Especially interesting aspects for consideration are: Changes in surface and groundwater systems / Floods / Droughts / Water quality; climate-related warming of lakes and riv.
- The maximum, minimum and average values of monthly precipitation, for two periods of 26 years: 1956-1981 and 1982-2007 (for the non continental part).
- Different sea-level trends: from a rise between +0.53 and +0.96 mm/y to a decrease between -0.50 and -0.82 mm/y, a range mainly due to local tectonic activity (*Barić et al, 2008*).
- The Ministry of Environment and Tourism of FBiH, supporting a project of consulting companies and non-governmental organizations, has financed the formation of a climate change web portal I. The portal was made by the Regional Center for Education and Information on Sustainable Development in Southeastern Europe (REIC). This portal will be used to disseminate an electronic newsletter about climate change, which will be sent to subscribers, and to provide information to those offering services in the areas of mitigation and adaptation in BiH (and later in Southeastern Europe as a whole), such as consulting services in research, production, and engineering.
- Primary adaptation measures and secondary adaptation measures are identified for the following fields: nature and environment, nature as resource, use of space, socio-economic development. (Coming from the establishment of work group findings provided regarding the vulnerability and adaptation from the INC, where a division into four groups has been made).
- Is a model currently under development? (The attempt by meteorologists to predict the state of the atmosphere).
- A similar model already exists in Novi Sad developed by the Centre for meteorology and environmental predictions - Department of Physics Faculty of Science at the University of Novi Sad (Serbia). Because of the very small area it would be unreasonable and inappropriate to make a model for weather forecasting just for the BH coast. In this scenario the whole east Adriatic coast of Croatia and even the Montenegro's coast should be considered
- Under development: Historical and real-time information with respect to natural hazards will be gathered by satellite remote sensing, aerial photographs and by other conventional means and integrated with GIS Relational Database Management System (RDBMS). This results in an extensive geo-database.
- Through specific model and GIS Relational Database Management System² (RDBMS) the assessment of natural hazard vulnerability could be generated for BiH and Croatian coastal zone.

Data gaps / Needs

- It should be particularly pointed out here that there is a need to further modernize the network by the introduction of Automatic Weather Stations and their connection into a system of automatic monitoring together with hydrological stations, particularly with the purpose of automatic monitoring and software control of the situation at river basins, as well as for planning water consumption for the needs of electricity supply, water supply, agriculture, other activities, and the population.
- No comprehensive environmental monitoring and data collection system, which results in the lack of an information system for environmental protection.
- Different data are gathered by various institutions without coordination and in the absence of a unified database.
- No exchange of data and communication between the institutions gathering data and higher governmental agencies, nor is there information about existing data.
- A lack of data and analysis to support decision-making and strategic planning in the sector (climate change impacts and water). The existing water management infrastructure is inadequate, and a lack of coordination at the national level and at the level of the Southeastern European region on research, planning, and management.
- Does not have the management, technological and economic capabilities to adapt to climate changes.
- Lack of financial funds, very few activities are directed on flood prevention.
- Institutional Constraints : understaffing in environmental agencies remains a serious obstacle to fulfilment of the obligations of BiH considering the implementation of requirements under UNFCCC.
- Statistics are incomplete and are compiled at the entity level.
- The sectors which have priority policy and activity needs are³
- No state body in charge of systematically providing information

Needs

- It is particularly important to inform the business community about climate change issues. This community needs two types of information:
 - Information on the extent to which conditions in the business environment have changed and may change in the future (e.g., changes in precipitation that are significant for agriculture and hydropower); and
 - Information on new technologies (the application of these technologies will not mitigate climate change in BiH, but their application will improve socio-economic development according to the principles of sustainable development).

Strengths

- One proposed measure to address shortcomings in current knowledge regarding the impacts of climate change on the water sector is the development of a Hydrological Information System (HIS). The HIS is not simply a database or archive, although it incorporates an archive. It is a logical and structured system to collect data that are

subsequently entered into the computer, checked and stored and where data may also be compared, associated, related and combined to provide information in a format suitable for users.

Monitoring program / national plans and programs for monitoring

- The modernization or establishment of a total of seven Class I weather stations in RS (Republic of Srpska) and further modernization of the 13 professional weather stations in FBiH (Federation of Bosnia and Herzegovina). It is also necessary to establish a professional weather station in Brčko District. There is also a need to introduce Automatic Weather Stations connect them with hydrological stations, particularly with the purpose of automatic monitoring and software control of the situation at river basins, as well as for planning water consumption for the needs of electricity supply, water supply, agriculture, other activities, and the population.
- To support and strengthen already implemented project, here a proposals for the full-size project given:
 - *First proposal:* WORK with Ministries ON Climate Change – WOMOCC
 - *Second proposal:* DEVELOPMENT of an mathematical MODEL for Weather forecast – DEMOW
 - *Third proposal:* DETAILED Vulnerability ASsessment study with a GIS database - DEVAS

Network / transboundary / regional networks and structures

- The energy community of the SEE Region;
- The Regional Cooperation Council
- The Belgrade Climate Change Initiative.

List of institutions

- Several institutions in BiH are dealing with flood prevention.
- In this area the Agency for the water area of Adriatic Sea and Agency for river basin of River Trebisnjica have in their activities also some flood prevention programs and plans.
- The Tourist Association of BiH
- Ministry of Foreign Trade and Economic Relations B&H
- PAP/RAC National focal point: Hydro-Engineering Institute of Civil Engineering Faculty in Sarajevo
- Ministry of Security B&H : is providing assistance after floods, for flood prevention there are no financial funds.
- Ministry of Agriculture, Water Management and Forestry of Federation B&H
- Ministry of Environment and Tourism of Federation B&H

Vulnerable zones

Decrease of snowfall is especially characteristic, which will affect the water supply of underground aquifers. Lack of water will affect agriculture, hydro, population, water management.

Key Sector	Vulnerability	Primary adaptation measures	Secondary adaptation measures
Coastal area	Erosion risk and soil deficiency due to sea level rise Increase in water temperature	Inclusion in the coastal zones management programmes of the Republic of Croatia	Reduction in anthropogenic impacts on the coastal and sea areas.
Water management	Changes in seasonal river flows Decrease in the quantity of water flow in rivers Difficulties in water supply for households and industry	Construction dams and accumulation reservoirs for hydropower generation, agriculture, drinking water, tourism, fish-farming, etc.	Training on the efficient use of water and reduction of losses in distribution Strengthening the system of water quantity monitoring and forecasting; Development of a Hydrological Information System

Impacts

- Rivers in the Dinara catchment basin will be greatly affected, particularly the Neretva and Trebišnjica Rivers due to SLR.
- One of the main problems, due to the increase of precipitation, for the coastal zone are floods and soil erosion. The Ministry of Security is dealing with those issues.

Scenario

The scenario developed in the framework of the UNEP Programme on Climate Change in the Mediterranean Region (1990-1996) showed the most probable rise in the average sea level as 65+35 cm (REC, ECNC, 2008).

For MedICIP: link towards all the literature

International documents

- PAP/RAC. 2007. Protocol on Integrated Coastal Zone Management in the Mediterranean

Internet web sites are dealing with climate change and variability.

- Ministry of Physical Planning, Civil Engineering and Ecology of Republic Srpska - <http://www.unfccc.ba>
- Regional Education and Information Centre for Sustainable Development in SEE (REIC) - <http://www.klimatske-promjene.ba>
- <http://siteresources.worldbank.org/EXTMETAP/Resources/CZMP-Bosnia,pdf,pdf>

National documents

- Initial National Communication of Bosnia and Herzegovina under the United Nations Framework Convention on Climate Change (Ministry of Physical Planning, Civil Engineering and Ecology of Republic Srpska, October 2009)
- National Report on current Policy, Procedures, Legal Basis and Practice of Marine Spatial Planning in Bosnia and Herzegovina (PAP/RAC 2007)
- Fifth National Communication of the Republic of Croatia under the United Nation Framework Convention on the Climate Change