



BOSNIA AND HERZEGOVINA

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ASSESSMENT OF SUSTAINABLE DEVELOPMENT IN BOSNIA AND HERZEGOVINA

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1. RIO-92 WORLD SUMMIT AND THE SUSTAINABLE DEVELOPMENT PROCESS

The UN Conference on the Environment and Development (UNCED) or Earth Summit, held in Rio, Brazil in 1992, was a historic event, which was envisaged to change the destiny of the Earth in the 21st century. This world meeting, which gathered the largest number of presidents of governments and states ever, represented a historic pinnacle of public and political support for the interlinked goals of development, poverty eradication and environmental protection. The Rio-92 Earth Summit drew the attention of the world to the most critical issues that the world was faced with: poverty, increasing pollution and deterioration of the environment, and prospects for the development of underdeveloped countries.

The Summit adopted the AGENDA 21 as global plan of action for addressing the pressing problems of mankind. The AGENDA 21 is a guide that combines the government policies, business policies and personal attitudes of individuals with a view to entering the 21st century. This also means that on the eve of the 21st century the world increasingly strove to draw closer to the ideal of a general planetary democracy.

The first major review of progress in achieving the UNCED commitments was the Rio+5 meeting, held in 1997. In the aftermath of Rio+5, the General Assembly, in Resolution S/19-2 approved a Programme for the Further Implementation of Agenda 21. This Resolution identified the date of the next comprehensive review and assessment of progress in the implementation of the UNCED commitments: 2002, the 10th anniversary of the Summit in Rio and the 30th anniversary of the Stockholm Conference on the Human Environment.

The economic development cannot be stopped; instead -its quality should be changed instead, in order that it might become less damaging. Being able to translate this awareness into practical actions and to move toward sustainable forms of development and ways of life represents the major challenge of our time. Agenda 21, one of the five documents that were the legacy of the Rio de Janeiro meeting, states that the population, consumption and technologies are the major driving forces for changes in the environment, and indicates in what ways the wasteful and inefficient forms of consumption in certain parts of the world (highly developed countries) could be changed, at the same time encouraging further (sustainable) development in other parts of the world. The Agenda contains strategies and programmes for achieving a sustainable balance between consumption, population and capacity of the planet to sustain life. It describes technologies and techniques to be developed in order to be able to satisfy the human needs and at the same time to manage the natural resources with due diligence.

Currently, successful economic development is measured mainly in terms of the amount of money earned, which in itself is a measure of the intensity of labour and consumption of natural resources. Therefore, an entity that consumes the natural resources or pollutes the environment should bear the costs of the use of or pollution of the resources, i.e. it should compensate for the decrease in the natural capital of a state. AGENDA 21 invited the governments in the world to adopt the national sustainable development strategies, to which indeed almost all the governments responded. The strategies were developed in extensive collaboration with NGOs and the civil society in general. AGENDA 21 ascribed the major part of the responsibilities for introducing the changes to the governments of the states, yet it also underlined the need for broad collaboration between and within the international organisations (regional, business), state, regional and local authorities, and the NGOs and citizens' associations.

THE PROCEDURES FOR EVALUATING THE WEALTH OF A STATE MUST TAKE INTO ACCOUNT BOTH THE VALUE OF ITS NATURAL RESOURCES AND THE FULL COST OF ENVIRONMENTAL DEGRADATION

During the Earth Summit, the UN environmental Programme (UNEP) was assigned with the task to develop and advance the natural resources and environmental accounting system and environmental economy. The purpose of this was to improve the monitoring of the state of environment, with an aim to put in place a system of early warning for the environmental problems worldwide. One of the tasks was also to work on the drafting of international environmental protection legislation, together with preparation of relevant international covenants. On this basis, a need arose to develop new indicators of economic welfare of the states that would include sustainability factors as well. In line with this, UNEP published in 1996 the indicators for evaluating

the sustainability of the development of states, while the International Standardisation Organisation (ISO) in 1996 proposed first environmental management standards and in 1997 the standards for awarding the environmental acceptability labels, etc. The indicators make it possible to compute the economic, social and natural factors in the development of a state, and to assess the sustainability, particularly the changes over the course of time, showing whether a state converges to or diverges from sustainability. The ISO standards serve to prove that the management of a firm maintains an environmentally friendly attitude. Many other international organisations and scientific institutions also significantly contributed to the development of methodologies for introducing sustainable development, including the appropriate measurement units and measurement methods for monitoring the impacts.

At the 8th session of the UN Commission for Sustainable Development held in April 2000, it was suggested that the 2002 review of the Agenda 21 should result in action-oriented decisions and reiterated political consent to give support to sustainable development, both by the authorities and the civil society. The Commission underscored that the Agenda 21 was not a matter to be renegotiated, but that it should rather set a framework within which to review the process and address the new challenges. It was recommended to focus the review on the areas where it is necessary to make efforts to implement the Agenda 21 and other conclusions of UNCED, and on the measures to be identified for further implementation, including the identification of the funding sources.

**UNCED 2002 HAS A TASK TO
INVEST EFFORTS INTO BUILDING
A NEW ENVIRONMENT
MANAGEMENT ARCHITECTURE**

In May 2000, the Ministers for Environment who gathered in Malmö, Sweden, at the First Global Ministerial Forum for Environment stated that the goals of the Summit 2002 should be to address the major challenges to sustainable development and to review the requests to strengthen the efforts for building the institutional environmental management architecture.

In October 2001, at the preparatory meeting of the CEE and NIS countries, held in Anatolia, Turkey, dedicated to the preparation of the national assessments for the Rio+10 Conference, it was highlighted that by applying the principle of sustainable development many countries in transition had efficiently resolved the pressing issues arising from the process of transition.

2. BOSNIA AND HERZEGOVINA AND SUSTAINABLE DEVELOPMENT PROCESS IN THE WORLD

2.1. Basic information about the country

Bosnia and Herzegovina is situated in the western part of the Balkans peninsula. It borders with Croatia to the north, west and south and with Federal Republic of Yugoslavia to the east. It covers the area of 51,197 km², with (estimated) population of 3,800,00; the capital is Sarajevo.

2.2. Short historical background

Until 1991, BiH was one of the six constituent units i.e. republics of former Yugoslavia, with population of 4,377,000 (1990) and US\$ 2,429 GDP per capita. After the dissolution of the former state, Bosnia and Herzegovina was internationally recognised as an independent state in April 1992 and become a member of UN in May same year. The war, which broke out in 1992, was ended by the Peace Accords, agreed in Dayton (USA) and signed on 15th of December 1995 in Paris. The Peace Accords defined the Constitution of BiH and established a complex state, composed of two entities (Federation of Bosnia and Herzegovina and Republika Srpska) to which, later on, following the international arbitration decision, Brčko District of Bosnia and Herzegovina was added as an independent administrative unit within Bosnia and Herzegovina.

According to the Dayton Accords and the BiH Constitution, the legislative powers at the state level were vested in the bicameral Parliament, made of the House of Representatives and the House of Peoples. Bosnia and Herzegovina is headed by a three-member Presidency, while the central government comprises the Council of Ministers with 6 ministries, responsible (mainly in international relations) for foreign affairs, foreign trade and economic relations, civil affairs and communications, human rights and refugees, European integration and Treasury. At the state level,

certain additional bodies or agencies were set up (of relevance for designing and monitoring the sustainable development process) in charge of protection of state borders, statistics, standardisation, measurements and intellectual property, accreditation, promotion of foreign investments, telecommunications frequencies and civil aviation.

The major part of the competences or responsibilities for social, economic, educational, health care issues and industrial development, and for use of the country's natural resources, including the authority to grant concessions on exploitation of natural resources to domestic or foreign concessionaires, i.e. the fundamental factors for controlling the sustainable development, are practically in the hands of the entities; furthermore, the BiH Federation additionally shares the powers with lower administrative units i.e. cantons, which have significant competences.

As concerning sustainable and economic development of the country and environmental protection issues, the state institutions have certain responsibilities in the sphere of establishment of international relations, multilateral and bilateral cooperation, entering into and coordinating the implementation of the international multilateral and bilateral agreements and contracts in the area of foreign trade, joint investments, harmonisation of tax policy and global and regional environmental protection programmes.

2.3. Basis for Sustainable Development in BiH

Within the framework of the planned strategic development of Socialist Federal Republic of Yugoslavia, the republic of Bosnia and Herzegovina, as an integral federal unit of former Yugoslavia, was envisaged to provide raw materials and energy for economic development of the country and space for development of basic and military industry. Relatively large hydro and thermal energy potentials and large supplies of coal and metal ores, enabled it to produce more than half of the Yugoslav output in coal, 70% of the output in metal ores, iron, aluminium, lead and zinc and almost 50% of the electric energy. Also, substantial part of former Yugoslavia's chemical industry (which used nitrogen and chlorine as basis) was situated in Bosnia and Herzegovina.

Therefore, the intensive exploitation of natural resources, for which mainly obsolete and highly polluting technologies were used, and the resulting degradation of environment, along with the fact that it was the state (and not the market) that dictated the prices of raw materials and energy, did not offer chances for balanced development in which economy and environment would be in harmony, in other words, did not open the prospects for sustainable development of Bosnia and Herzegovina.

In June 1992, when the attention of the whole world turned toward the Rio Conference and the idea of sustainable development, Bosnia and Herzegovina was entering the third month of an atrocious war imposed on it, which was to last for almost 4 years. Five years later, at the time of Rio+5, Bosnia and Herzegovina, assisted by the international community, concentrated all its efforts on the reconstruction of the country and war-ruined infrastructure and on establishment of a new system of government. These efforts are still ongoing. The consequence of such situation was that Bosnia and Herzegovina could not to a sufficient extent participate in the development and implementation of the idea of sustainable development. However, in spite of the difficult situation caused by the war, Bosnia and Herzegovina managed, through several regional international programmes launched in 1997 and later, to join in the efforts of development and implementation of the idea of sustainable development. The above programmes were primarily regional Mediterranean and Danube programmes, such as, for example, the Mediterranean Action Plan (MAP).

3. BASIC FORMS OF BIOLOGICAL AND GEOLOGICAL DIVERSITY AND NATURAL RESOURCES

3.1. Biological and geological diversity

Biological diversity is the fundamental component of the living environment, as well as the best and most reliable indicator of the status, trends and potential possibilities of development of a state.

Land: In terms of orography, Bosnia and Herzegovina is a hilly-and-mountainous country. Of the total surface area, 5% are lowlands, 24% hills, 42% mountains and 29% karst. The average altitude above the sea level is about 500 m (0 m at the seacoast and 2387 m at the highest peak of the Maglić mountain).

Biogeographical ecological situation: Geographical position at the crossroads of many various bio-geographical influences and routes, and a large number of ecologically diverse habitats, distributed in a mosaical pattern, gave rise to the development of a great diversity of species, both in the overall territory of Bosnia and Herzegovina and in some of its regions. Relatively many species are endemic. Forest eco-systems cover 41% of the territory.

Biological diversity: Bosnia and Herzegovina ranks among the territories with the highest level of biological diversity in Europe. Based on the existing inventories, it is clear that Bosnia and Herzegovina is extremely rich in animal world, and that in comparison with the richness in similar species of other countries in the Balkans peninsula or in Europe, Bosnia and Herzegovina's richness in animal species represents not only national wealth but an extraordinary potential for development as well. Bosnia and Herzegovina is one of the richest countries in terms of diversity of wild animals and plants that became domesticated in the long history of the development of civilizations in these territories. Some of these species grew so much adapted that, together with the wild forms, they represent a valuable part of the natural heritage of Bosnia and Herzegovina.

**BOSNIA AND HERZEGOVINA
SHOWS HIGH BIOLOGICAL
DIVERSITY, WHICH IS
SERIOUSLY ENDANGERED**

Geological diversity: From the point of view of geological diversity, Bosnia and Herzegovina is one of the most unique regions in Europe. Relative to the small surface area, it is one of the most diverse countries in Europe, with a number of geological rare phenomena established to date. The dynamic relief, directions in which its mountain massifs stretch, the hydrographic network, the vicinity of the Adriatic Sea, have all created conditions for wide spectrum of types of climate. The geological composition of various areas in Bosnia and Herzegovina is very complex and must be preserved for future generations through implementation of systemic sustainable development measures.

3.2. Water Resources and their Use

Bosnia and Herzegovina has at its disposal significant water resources, which will be one of the most important of general economic development for the majority of areas in the forthcoming period. The fresh water basins are a key natural resource in Bosnia and Herzegovina. There is about 1250 L/m² of precipitation per year in the territory of Bosnia and Herzegovina, which means that the overall volume of precipitation is 64,000 million m³ of water or 2,030 m³/s. Of the total water that falls on the territory, about 1,155 m³/s, or in average 57% runs off the territory of Bosnia and Herzegovina. The quality of surface water varies from region to region. In the lower parts of some of the catchment areas the water is of class III quality, the middle parts of the watercourses contain class II water, while the spring water is of class I quality. The source fields of surface and ground water are particularly valuable natural resources.

All rivers in Bosnia and Herzegovina are mainly of low quality, because they receive a high untreated wastewater pollution load from urban areas and manufacturing industry. Only the upper courses of some rivers (Una, Sana, Neretva) contain good quality water.

The glacial lakes represent storage lakes of quality potable water; they were conserved thanks to the sustainable cattle raising and eco-tourism in high-mountainous areas. In the coastal strip of the Adriatic Sea, water is of extremely high quality, as numerous biological indicators show. Thermal springs are very frequent occurrence in Bosnia and Herzegovina, with high quality composition. The same goes for many sources and impounding groundwater reservoirs of mineral water. They are relatively scarcely used for commercial purposes. Many of them are not used at all, although they could serve as significant resources in the energy sector, as well as for the development of health tourism.

There are 26 bigger or smaller water artificial reservoirs in Bosnia and Herzegovina. Although the majority of them were built for hydro-energy purposes, these reservoirs are particularly significant for water regime regulation (alleviating floods and increasing minimum flows) as well as for provision of the necessary quantities of water for water supply and irrigation.

Bosnia and Herzegovina is rich in ground waters, which provide 80-90% of the drinking water.

3.3. Basic forms of threats to the geological and biological diversity and natural resources in Bosnia and Herzegovina

The situation in which sustainable development was insufficiently present in all the segments of social and economic system of Bosnia and Herzegovina in the past, caused serious environmental problems. This continued in the war period, when the chaos conditions caused disturbances in the biodiversity, and in anthroposphere as well. This trend continued in the postwar period also, when the intensive processes of transition and inconsistent privatisation caused many open and unresolved problems related to the status and protection of natural and cultural values.

The risk factors, i.e. the most frequent local and global causes endangering the biological and geological diversity in Bosnia and Herzegovina, are as follows:

- Unbalanced management of space (illegal construction of settlements, business premises and manufacturing facilities, construction of roads and other infrastructure, sprawling urban zones),
- Excessive exploitation of natural resources – clear and intensive felling, hunting, poaching, imbalances in agricultural production,
- Unbalanced industrial production (lack of waste water treatment plants, high emission of sulphur compounds into the atmosphere, uneconomical consumption of energy, low usability of resources);
- Unbalanced energy policy (inadequate fiscal policy – there are very little or no investments into environment, absence of clear development strategy, absence of programmes for more efficient use energy, application of obsolete type of management in the energy sector, insufficient recultivation of surface pits, absence of feasible programmes for rehabilitation of old mines, etc.);
- Poor management and control of accidents and disasters (fires, floods);
- Inexistence of clear institutional framework for managing biological and geological diversity;
- Inadequate and dysfunctional legal basis at all the levels of territorial and socio-political organisation;
- Insufficiently studied biological and geological diversity, and absence of categorisation in terms of the degree of vulnerability;
- Poor enforcement of the existing laws;
- Insufficient awareness of the governmental and non-governmental sector as to the significance of biological and geological diversity for stability of the social community and alleviation of poverty;
- Absence of a determined stand toward the international documents which regulate the sustainable management of biodiversity, such as: the Convention on the Conservation of the European Wild Special and Natural Habitats (the Bern Convention), EC Habitats Directive 92/43/EEC, the Convention on Biological Diversity, CITES Convention, Ramsar Convention etc.;
- Inexistence of standards and strategies for sustainable use of natural resources;
- Increasingly present illicit trading with endangered plant, animal and mushroom species;
- Non-participation in international projects such as Natura 2000 – Coherent European Ecological Network of Special Conservation Zones; European Ecological Network (ECONET);
- Lack of dialogue/partnership between the government, civil society and economy in addressing the issues of development and environment.

4. NATURAL RESOURCES MANAGEMENT IN BOSNIA AND HERZEGOVINA

4.1. Water and Hydro-Potentials

4.1.1. Situation in Water Sector

Legal and Institutional Aspect

In the postwar period, the situation relating to the water sector legislation in Bosnia and Herzegovina was chaotic. This situation was the consequence of an enormous number of provisional decisions, rules and regulations adopted or taken over from the previous legal system or during the war; the complex was compounded further by the problems in the functioning of the legal system. In order to overcome these problems, the European Commission provided its technical and financial support through its EC Environmental Programme for Bosnia and Herzegovina, assisting in the drafting of a set of five environmental laws, which included new water protection laws (for both entities) The draft laws were brought in harmony with European standards and principles, all relevant international conventions and the Framework Water Directive, particularly through introduction of the principle of integrated environmental approach of river basin management.

There are many shortcomings in the water sector in Bosnia and Herzegovina, including the weak and non-transparent administration in this area, problems with the division of competences, etc. There are attempts to eliminate these shortcomings through the PHARE project, which deals with institutional strengthening in the water sector. This project will also suggest a new organisational structure for water management, based on the principle of water basin management and in line with the EU Framework Water Directive.

4.1.2. Water Supply

Water supply in the territory of Bosnia and Herzegovina is mainly based on the use of ground water sources (89% of the overall sources of water supply, out of which 38% from intergranular media and 51% from karstic media), while 10.2% of the water comes from the rivers and 0.8% from the natural lakes and artificial reservoirs.

Due to war in Bosnia and Herzegovina, the water infrastructure of the country was severely damaged. However, even before the war, the situation in the water supply and sanitation sector was unsettled. That is why the issues of water supply and discharge and treatment of wastewater were among the top priorities in the postwar reconstruction of Bosnia and Herzegovina. Although it is estimated that the water supply sector has been rehabilitated up to 90% of the pre-war level, as a whole it is still far below the international, particularly European, standards. The springs and source fields are not sufficiently protected, and the quality of potable water is questionable, in certain cases utterly unacceptable. The potential pollution is still hanging as a threat to human health, due to aged and damaged pipelines, uncontrolled chlorination and insufficient pressure.

For these reasons, the level of water supply is far below the European one; the coverage is about 50%, as compared with 90% and more in Europe. The water quality level is also substantially lower than in the EU countries. Damages and leakages are fairly frequent in the water supply system and because of that the water quality cannot reach the international standards.

4.1.3. Water protection

In the prewar period, in the Socialist Republic of Bosnia and Herzegovina, the wastewater generated by a substantial portion of population (almost 90%) was being discharged directly into nearest watercourses or underground, without any previous treatment. The level of coverage by the sewerage system amounts to 56% of urban population. In settlements with more than 10,000 inhabitants, 72% of the total population is provided with sewerage service pipes. The situation is considerably worse in smaller places, where the coverage does not exceed 10%.

Many municipalities in Bosnia and Herzegovina now have sewerage systems, but they serve only to collect and discharge foul water directly into flumes or rivers. Virtually all sewerage systems are of gravitation type, without pumping stations. Only six municipalities in Bosnia and Herzegovina have wastewater treatment plants. Due to the collapse of the state-owned enterprises with obsolete technologies, and to the consequences of the war destruction (industrial capacities were destroyed, damaged or looted, and subsequently not reconstructed), the pollution from industrial sources significantly dropped, while the pollution from utility systems is still present. Before the war, there were 122 industrial plants for wastewater treatment, of which 40% were performing very well, but at the present moment only few of them are operating.

4.1.4. Irrigation

The future of agriculture lies in two areas – genetics and irrigation. However, in spite of the visible progress in creating new varieties of field crops and new possibilities for modern treatment of agricultural land, the irrigation system has not been developed in our country. Modern agrotechnical (scientific) measures involve, among else, establishing an appropriate regime of water and air in the soil, without which it is not possible to engage in successful agricultural production; irrigation is one of the measures for successful establishment of such regime.

In terms of ecology, the irrigation makes possible not only to get a higher yield from crops, but also the application of appropriate modern farming measures that interfere neither with the natural quality of soil nor the groundwater quality. About 15% of arable land in the world is irrigated, and in Bosnia and Herzegovina only about 0.65%.

Lack of water during the vegetation period is a key limiting factor for the development of agriculture, particularly in the region gravitating toward the Adriatic Sea. Many irrigation systems have been seriously damaged, due to poor maintenance and war destruction. Only 4,630 hectares are irrigated in this region.

4.1.5. Recommendations for sustainable water management in Bosnia and Herzegovina

Two significant aspects characterise sustainable development of water sector:

- Quality, efficiency and transparency of water sector management and administration, and
- Sustainability of investments and services.

The principles that are relevant for water sector sustainability are environmental sustainability, economic (commercial) value principle and financial capacity of investors and institutions. The sustainability can be achieved by introducing the “polluter pays” and “user pays” principles (compensation for use and discharge of water), based on the domestic standards and criteria, which have to be introduced. However, these domestic standards and criteria should be harmonised (and preferably made uniform) throughout Bosnia and Herzegovina, which is possible to attain only if joint (framework) legislation is put in place. At the same time, the economic capacity of domestic entities (of consumers, and even of water polluters) should also be taken into account.

4.2. Agricultural soil and development of agriculture

4.2.1. Status, structure and quality of agricultural land and possibilities for sustainable agricultural production

The total surface area of the agricultural land in Bosnia and Herzegovina is about 2.5 million hectares, i.e. about 50% of the state territory or 0.7 ha/per capita. Of the total agricultural land, about 40% is on altitudes up to 500 m above sea level, 35% from 500 to 1000 m above sea level, and 25% above 1000 m a.s.l. 68% of the total agricultural land in Bosnia and Herzegovina is arable land and 32% are meadows. Fertile lowlands compose 16% of the total agricultural land in Bosnia and Herzegovina, 62% are less fertile hilly-and-mountainous areas, while Mediterranean area accounts for 22%.

Natural conditions in lowland areas are favourable for sustainable agricultural production and modern market economy. With additional investments of capital into modern technology, the yield of crops could increase by 50%, particularly in the rehabilitated water supply areas of Bosnia and Herzegovina (200,000 ha). The I-IV class soils are to be found in the valleys of the Una, Sava, Vrbas, Bosna, Drina, Sana and Spreča rivers. In these valleys it is possible to organize a sustainable production of cereal crops (wheat, barley, soybean, corn), breeding of cattle in barns, large-scale growing of fruit (plums, apples, pears), and vegetables, medicinal herbs and industrial plants.

In the highlands of Bosnia and Herzegovina there are less valuable agricultural lands (V-VIII class of quality). In these areas it is possible to organise cattle breeding and complementary agricultural production. The war laid these areas completely waste, leaving behind large strips of land covered with mines (20% of rural areas were mined). For environmental, economic and social reasons, it is both necessary and justified to revive the highlands. It is possible to engage in sustainable cattle raising, healthy human food and animal feed production, complementary production and services, growing of barley for breweries, potato growing, etc.

Agricultural lands of the Mediterranean region cover the territory of the southern Dinarides up to Illyric-Mesian ecological-vegetation region. Karstic polyes (fields, valleys) in this area cover about 170,000 hectares. Frequent floods prevent organising sustainable intensive agricultural production on about 40% of this land. During the war (1992-1996), the capacities for intensive agricultural farming in the Mediterranean parts of Bosnia and Herzegovina were destroyed. It is necessary to undertake reconstruction and expansion of these capacities as high priority. It could be possible to organize intensive greenhouse and open-space agricultural farming, vine-growing, large-scale growing of citrus fruits and vegetables, freshwater fish farming and bee-keeping.

Over 30% of the sub-Mediterranean area is under highland pastures, in which about one million head of small animals could be raised (goats, sheep, cattle).

It would be important to intensify agricultural farming in Bosnia and Herzegovina, the more so if we take into account the fact that the BiH agricultural sector is currently producing less than half the food that the domestic population needs, so that presently the main item on the list of imports are foodstuffs, accounting for more than half of the total value of imports. Sustainable agriculture could significantly increase the food production, significantly reduce poverty in Bosnia and Herzegovina, and at the same time preserve the healthy environment and ecosystem as a whole. This means, that in order to attain a higher yield, more resources should be invested into plant farming than would be otherwise necessary under more favourable natural conditions (there are no poor farming lands, there are only poorly performing farmers), i.e. that even under less favourable conditions like the ones prevailing in Bosnia and Herzegovina high output could be achieved with the assistance of expert knowledge and investments. The proof to this are the cases of record-breaking yields, achieved before the war by most progressive farmers and individual agricultural estates, which could serve as milestones to indicate that a well designed agricultural policy could at least double the present output.

4.2.2. Endangered farmlands

The soil is one of the three most important natural resources (water, air, soil) that are precondition to life. While the first two are renewable, the soil is not renewable. Once destroyed by erosion or by being covered with concrete and bitumen or in some other way, it is lost forever. In this sense, our country is suffering large losses. Before the war, about 5,200 hectares of farmlands were lost annually, due to construction and building of various housing, industrial, transport and other facilities and structures, craters formed after opening of mine pits, flooding by artificial lakes, being covered with dump sites, etc. Unfortunately, such losses are currently even much higher: according to statistical records, the annual losses for the past two years amounted to over 10,000 hectares in average! We can easily calculate, that given the prewar rate of loss of soil, Bosnia and Herzegovina could be left without this most valuable natural wealth in 200 years time, and if we take the present rate of destruction of soil, this could happen as quickly as in 50 years! But the land is not a factory producing only food, but potable water as well, since it absorbs, filters and stores precipitation water, which then, in form of groundwater, serves multiple purposes. When designing plans for use of space and land development, many physical planners and decision makers, responsible for taking decisions that the farmlands be used as building sites for construction works, are not aware of this fact, and in consequence the land is being mercilessly destroyed. The vast expanses of karst in Herzegovina and western Bosnia are the result of former abuse of lands on slopes (felling and clearing of forests, wrong methods of usage of soil in agriculture).

IF THE USURPATION AND MISUSAGE OF FARMLANDS WERE TO CONTINUE AT PRESENT RATE, BOSNIA AND HERZEGOVINA WOULD REMAIN WITHOUT FARMLANDS IN 50 YEARS

The erosion and flooding of farmlands endanger the harvests and sustainable use of soil. Lijevče polje, Semberija and fertile farmlands along Drina, Bosna, Vrbas, Sana, Spreča, Una, Sava and Neretva river are endangered. Waste, poisonous and other hazardous substances settle in fertile farmlands. Harmful dust, oil derivatives, poisonous and other gases infiltrate the soil. The plants use and accumulate these poisonous and hazardous substances, incorporating them into their vegetable mass, which is then used by human beings and animals.

The farmlands are attacked and endangered by massive construction of housing and other facilities, hydro- and thermo-power plants, power transmission facilities, telecommunication and

other systems of modern civilization. Fertile farmlands are used as greenfield dumpsites. These are sources of communicable diseases and contamination of domestic animals and humans, and of the living environment in general. The potable water systems and the aesthetically pleasing sights of natural environment are endangered.

The land in Bosnia and Herzegovina was also endangered by the recent war, during which hundreds of kilometers of trenches, innumerable concrete bunkers, craters from millions of shells, bombs and missiles were dug in it. The vast plots of land were also "planted" with millions of landmines, which at present prevent usage of such land, while at the same time still causing human casualties.

Throughout Bosnia and Herzegovina, the war left behind about 1.2 million landmines and about 2 million of unexploded ordnance, spread over 430,000 ha of land or about 8% of the total territory. This presents not only a continuous threat to human beings and animals, but also means long-term loss of soil and impossibility to manage this resource. The movement of military matériel, and the digging of trenches and building of bunkers have also significantly contributed to the destruction of land, very often highly fertile farmland.

4.2.3. Sustainability of physical planning of agricultural estates, weaknesses and shortcomings in the organisation of agricultural production

The present situation concerning the physical planning of farmlands is unsustainable, seen from the point of view of modern organisation of market-oriented production. The process of repossession of abandoned and occupied property is very slow. Part of this space is also being used by the international military forces, collective accommodation centres and newly constructed refugee settlements. There are many cases of excessive construction of housing and business facilities, roads and other infrastructure, petrol stations, power plants, telecommunications, electric power, water supply and other utilities on fertile farmlands.

One of the circumstances that serve as obstacle to the development of modern intensive farming methods are fragmented, scattered and tiny holdings. The agricultural policy measures should encourage the processes of regrouping and consolidation of holdings, which in turn would enable the application of modern scientific farming methods that would yield a higher output. Sustainable development of agriculture means technically feasible, environmentally acceptable, socially responsible and economically efficient development that satisfies human needs in food, which at the same time preserves natural resources, conserves unpolluted nature and does not interfere with integrity of biological diversity. In other words, it means a civilized and responsible development, which will not put at risk the normal life of future generations for the sake of profit and well-being of solely one generation of human beings. These principles should serve as guidelines in all future planning of the agrarian, economic, modern scientific farming and animal husbandry measures for sustainable development of agrarian sector and production of food. This particularly refers to economical use and preservation of soil as the main resource for food production.

The individual agricultural estates are small and fragmented, engaged more in subsistence farming than market-oriented production. The big systems are being privatised without social schemes that would cater for redundancies. There is no exchange of professional and expert information (advice and instructions), no marketing, management, global strategy, policy of support in form of guaranteed prices and uniform business sector policy. Likewise, information system, educational, scientific and professional institutions, legislation, and standardised plans and programmes are also lacking. The BiH villages have virtually disappeared, this deflating the motive of refugees and displaced persons to return to their farming estates.

The agricultural holdings are still being intensively scattered and are still diminishing in size. Support to private initiatives and entrepreneurship in agricultural production is missing. The seeds and livestock, procured or donated from abroad, do not generate the expected yield, and the imported cattle are prone to diseases and dying out. For no justified reason, domestic crossbreeds and organic technologies are being abandoned. Standards for density of sowing, varieties, fruit and vegetable seedlings are inexistent. In cattle breeding, less efficient cattle head are used. Modern systems of reproduction and health care for domestic cattle are being neglected. In livestock breeding, the farming model of production for market has not been introduced in Bosnia and Herzegovina. The own capacities for processing milk, meat and wool are insufficient

On cultivated fields of smaller size, unacceptable levels of poisonous chemical substances are being used. The indigenous domestic species of flora and fauna are disappearing. The recently started large-scale production of medicinal, edible and aromatic plants is also endangered by excessive use of protective chemical substances and artificial fertilisers. The chain of unsustainable production spreads, affecting the pharmaceutical (tea), cosmetic (essential oils, lotions) and foodstuffs (spices) industry.

To breed and use domestic cattle, wild game and fish in an environment where chemical and other water and soil pollutants are present is also not a sustainable practice. It is not possible to develop bee-keeping and mushroom breeding in a polluted environment. Unacceptable contents of chemical substances in food are destroying human health.

4.2.4. Institutional and investment preconditions for sustainable use of resources in agriculture

In order to renew and manage the agricultural resources in Bosnia and Herzegovina in a sustainable manner, an integrated strategy of production, marketing and financing is needed. It is necessary to introduce technological changes in order to be able flexibly to adjust the agricultural produce to the needs of the market (buyers). The laws of supply and demand, liberalisation of prices, investments and financial transactions determine such process. Next to be undertaken is restructuring of ownership and management of agricultural holdings, and protection and environmentally and economically sustainable use of other natural resources. These tasks are in the majority of countries in the world usually dealt with in an integrated manner by the ministries of agriculture and forestry and ministries of economic relations, physical planning and environment. Unfortunately, in Bosnia and Herzegovina such institutional system is far from being built.

In order to achieve sustainable agricultural production and apply the programmes for advancement of agricultural production, and to use the land in sustainable manner, the strategy of development of agricultural sector requires proper institutional legal basis; it is also necessary to adopt a number of institutional measures that would stimulate such development.

These are, above all:

Legal and institutional basis

- Regulated, free and single BiH market, without internal trade and political barriers,
- Tax system should provide incentives to agriculture, in order that the BiH producers, protected from the presently obvious unfair competition on the part of domestic importers and foreign producers of food (often of non-standard, very questionable and untested quality), could at least in part compete with foreign producers, who are most often subsidised by their governments or by regional economic groups.
- Programme of return of rural population, i.e. of refugee farmer families, to their pre-war holdings, in conjunction with a programme of previous reconstruction of their homes,
- Revival of rural areas and self-employment of rural population at their pre-war farming estates.
- Political, social and economic support to population engaged in agricultural production,
- Drafting and enactment of laws on sustainable development of agricultural production, including the “umbrella” legislation and regulations at the state level, and protection against misuse and usurpation of agricultural land as crucial resource for life sustenance of the population,
- Preparation of a long-term programme for development of agricultural production in lowlands, highlands and the Mediterranean area,
- Establishment of a Council for protection and sustainable use of natural resources, comprising the representatives of governmental and non-governmental sector and representatives from scientific institutions and relevant professions,
- Establishment of a state, entities’ and regional association of producers, suppliers, and consumers of agricultural products,
- Setting up of a Fund for development of agriculture and rural areas.

Institutional and operative measures and actions

- Mine clearance of agricultural land,

- Organised production through farming cooperatives, guaranteed sale of products,
- Organised systematic education and continuous professional training of human resources, scientific and research and professional involvement in the agricultural production sector.
- Organized and proactive, professional agricultural advisory extension services, upgrading of professional knowledge of farmers, so that they can benefit from developments in the science and techniques of production and other measures necessary for speedier development of farming sector and attaining higher levels of food production,
- Continuous improvements in the legislation and regulations related to the use of chemical substances and prohibition of use of chemicals in areas where they might pollute sources of water supply, farming soil, forests or air (environment),
- Controlled disposal of plant and animal waste and carcasses and control of burning of stubble-fields for agricultural purposes – use of plant waste for generation of energy and production of animal and wildlife feed.
- Procurement of the necessary farm machinery and other inventory and reproduction materials, which can be achieved by obtaining credits on favourable terms, or donations in certain cases.

4.3. Forest eco-systems and forest resources

4.3.1. Area covered by forests, structure and quality of forest stock, situation concerning other forest resources

Of the total surface area of Bosnia and Herzegovina (5,113,000 ha), 53% (2,700,770 ha) is covered by forests and forest soil i.e. there are about 0.71 ha of forests and forest soil per capita. 81% of the forests and forest soil are state-owned, and 19% are in private ownership. Of the overall area covered by forests and forest soil in Bosnia and Herzegovina, 81% is covered by standing timber (commercial) and sprouting (ecological) forests, and 19% by forest soil without growth. The standing timber forests account for 47%, and sprouting 34%. As for the forests without growth, barren forest ground accounts for 15%, and unproductive forest soil 4%. In the overall area covered by forest and forest soil, degraded sprouting forests and barren forest ground participate with 53%, which is considered to be unfavourable composition of forest stock in Bosnia and Herzegovina.

The quality of the growing stock is unsatisfactory. The average annual increment of the overall volume of wood is about 6.6 m³/ha in the standing timber forests and about 2.4 m³/ha in sprouting forests. The volumes of felled wood are proportional to these figures – 6.6 m³/ha in the standing timber forests and 1.3 m³/ha in the sprouting forests. This structure of forest assortments indicates that the forestry sector of Bosnia and Herzegovina is quite poor, economically (commercially) speaking. This disadvantageous situation is even more pronounced if we take into account that in the period 1992-2001 it was not possible to make available by forest roads the areas inaccessible for felling.

National and regional parks, recreational and other protected forests cover only 1% of the overall area of Bosnia and Herzegovina (about 27,000 ha). It is both necessary and possible to extend the area of special purpose forests to at least 5% of the total area. Biodiversity of BiH forests is very pronounced (400 plant species and over 200 animal species). The forests in this territory yield about 3 kg/ha of quality medicinal herbs, aromatic and edible herbs, about 6 kg/ha of forest fruit, about 1000-tons/per year of mushrooms, as well as other herbal products. These marketable potentials are wasted in vain in the forests, which is unacceptable from the point of view of sustainable development of forestry.

In the commercial hunting grounds of Bosnia and Herzegovina (about 2 million ha) it is possible to raise and put to sustainable use economically valuable game preserves. Unfortunately, during the 1992-1996 war, the biodiversity of the wild game was drastically destroyed. Rare and endangered wildlife species are disappearing. Sustainable development of forestry would require repopulating the wildlife in their indigenous habitats.

4.3.2. Vulnerable forest eco-system

The indicators of vulnerability of forests and forest soils of Bosnia and Herzegovina refer both to past and present situation:

- Due to its configuration, steep slopes and structure of soil, and long-standing (more than a century long) intensive exploitation (and very often, unplanned felling also) of its forests, Bosnia and Herzegovina is one of the most erosive areas in Europe and the most endangered erosive area in the Balkans.
- The environmental desert of Herzegovina karstic area covers about 722,000 ha. The forests in this area are completely devastated and are still disappearing. The erosion in this bare, rocky and steeply sloped area is very pronounced. In terms of biodiversity, rare species of herbaceous plants are endangered.
- Mined areas cover about 540,000 ha. In these areas, the growing stock was also damaged. The last remaining wild game die out because of landmines. Over one million m³ of the annual felling volume is blocked from exploitation. Forest roads are inaccessible and any intervention of man to prevent harmful occurrences is made impossible in this dangerous zone.
- The invasion of insects has for example in 1998/99 affected about 260,000 ha of coniferous woods in Bosnia and Herzegovina. Large forest stretches dried out massively. The timber was laid to waste. The pests are spreading even outside the territory of Bosnia and Herzegovina, thus threatening the coniferous forests of Europe as a whole. The deciduous forests of the northern parts of Bosnia and Herzegovina are attacked by gipsy moth, which is also spreading toward the neighbouring states. The endangered (dry) forests are frequently attacked by forest fires and other harmful occurrences.
- In the forests and forest lands of Bosnia and Herzegovina there are over one thousand active erosion areas, in which over 20 million m³ of forest land are washed away each year. The low flora and fauna, which recover with difficulty in the bare areas, are disappearing. The forest roads are covered up with earth.
- The "Red List" of flora and fauna is being extended with new rare or endangered plant and animal species. Weeds are overgrowing the neglected, damaged and devastated forest lands. The indigenous flora and fauna, lacking conditions for growth, are disappearing. The medicinal, aromatic and edible herbs, forest fruit and mushrooms are not being used.
- The excessive and illegal felling of woods along the forest roads is endangering the forest stock.
- In terms of biodiversity, the composition of flora and fauna is changing.
- Erosion and floods are increasingly frequent occurrences. The springs of drinking water are drying out. There are signs that the microclimate is changing.
- The organisational and human resources structure, and poor economic performance of the forestry of Bosnia and Herzegovina jeopardize the possibility to improve and extend the forest stock in this area. There are no long-term plans for development of forestry. The organisational structure of the system does not give the expected results. During the war, over 30% (320) engineers with B.Sc. in forestry left Bosnia and Herzegovina. The system for education of human resources in forestry is not in line with the quality of knowledge needed and new economic conditions. Very little attention is given to the education of human resources in the area of IT, marketing, management and foreign languages. The scientific and research work and professional upgrading of human resources have been neglected.

4.3.3. Institutional and legal preconditions for sustainable use of forest resources

- Investment and institutional and legal preconditions for forest and forestland and management and economy call for new organisational models of executive management, commercial production forestry systems and sustainable legislation in the area of forestry, hunting and special purpose forests.
- At the state and entity levels there are no competent institutions in charge of prices, marketing and market policies for forestry and wood processing. Also non-existent are market information systems, consumer and supplier associations, there are no exchanges of experiences between

SOCIO-ECONOMIC DEVELOPMENT OF BOSNIA AND HERZEGOVINA LARGELY DEPENDS ON ENVIRONMENTALLY SUSTAINABLE AND COST-EFFECTIVE USE OF RESOURCES IN AGRICULTURE AND FORESTRY

experts, systems of environmental economy education and continuous professional training are inadequate.

- The legally binding requirement to maintain a system of expanded reproduction of forests is not being implemented in practice. Objective evaluation of the generally useful functions of forests is not performed.
- Sustainable management of privately owned forests requires a uniform system of planning, monitoring, regeneration and use of forests in line with the general principles of sustainable ownership. The practices of disputable property-legal relationships between forest management and the population in the vicinity of forests (usurpation of 3% of total area), disruption and fragmentation of forest eco-systems by infrastructure facilities, application of several contradictory forest exploitation policies, and taking from forests more than is being given back to these natural resources are unacceptable.
- The endemic forest resources and other special natural values should be treated separately within special protection zones.
- Endangered, rare and dying out species of flora and fauna that compose the biodiversity should be promptly and permanently put under protection.
- When drafting and implementing legal regulations in the area of environmental protection and sustainable use of natural resources, the relevant ministries should know precisely what are the long-term interests and obligations of the holder of possession (state), how to build the capacity of the new owners of the forests and forest lands to engage in continuous maintenance and regeneration, how to introduce and manage the property acquired to-date, market relations and fresh private capital within the state ownership relations.
- For all sustainable activities in forestry and other dependent areas, it is necessary to have in place an appropriate basis for long-term, medium-term and operative plans and programmes. Only those activities that are environmentally and economically justified, feasible and cost/effective are sustainable.
- In order to be able to implement the basic sustainable institutional and legal elements of forest management and husbandry, it is necessary to have in place a relevant ministry for forestry at the state and entities level, Council for protection and sustainable use of natural resources, Forest Improvement Fund, a profitable and environmentally sustainable system of forest and forestland management and economy, marketing, monitoring, economic support and social care system.
- It is necessary to have professional staff who equally take into account both the commercial function of the forests and their generally useful role. The subject of ecology as general education discipline should be studied in primary and secondary schools. An educated, nature-loving human being has the ability deeply to understand the natural laws of the forests, the need for long-term planning, caution and flexibility in conservation and sustainable use of the rare phenomena and values that make part of the natural resources of Bosnia and Herzegovina.

4.3.4. Recommendations regarding protection and sustainable use of forest eco-systems

Sustainable forest management and economy requires much more efficient measures for strengthening the productive function, maintenance and promotion of generally useful functions of forests, conservation of biological diversity, extension of protected zones, regeneration of degraded forests, protection of forests and wildlife, monitoring, scientific and research work and education of human resources than those already existing. This, above all, implies:

- In managing the forests, to pay more attention to strengthening the natural stands and crops, increasing the biological investments, promoting the availability of forests, reducing the intensity of felling, enhancing the vitality and health of forests and using environmentally acceptable technologies of cultivation, protection and use of forests and forest wildlife;
- To pay particular attention to the implementation of measures for cultivation and protection of forests and wildlife;
- To afforest the bare, degraded or neglected forest lands, which will serve as an environmentally and economically sustainable measure for advancement and expansion of forest stock, flood and erosion control and improvement of the environmental role of the forests;

- To make the reconstruction, expansion and maintenance of forest roads a priority task of the owners and users of the forest stock (state, forestry enterprises).
- In the areas which are damaged by excessive felling, to make a shift toward generating income on the basis of sustainable use of other forest products (medicinal herbs, forest fruit, mushrooms, coal, etc.);
- To adapt obligatorily the market-oriented capacities for wood processing to the quantity, quality and location of timber. In the complementary development of forestry production, to cater for multi-purpose interests of sustainable development of forestry. The prices and marketing of forest assortments are not harmonised, nor the fiscal burden on forestry.
- To pay more attention to the exchange of domestic and foreign experts, literature and experiences.

5. DEVELOPMENT OF ENERGY AND KEY INDUSTRIES IN BIH

From the point of view of their intensive use of energy or their impact on it, and their impact on the pollution of environment and sustainable development, for the past 20 years, and to a large measure even today, the most significant industries in Bosnia and Herzegovina have been the following ones:

5.1. Energy and its use in Bosnia and Herzegovina

Energy resources and intensive use of energy in Bosnia and Herzegovina

The main domestic sources of energy in Bosnia and Herzegovina are coals and hydro-energy. Bosnia and Herzegovina is importing natural gas and oil. The structure of the primary energy is as follows: coal 56%, hydro-energy 10%, liquid fuels 28% and gas 6%. As concerning the generation of electric power, the ratio of installed capacities of thermo power plants to hydro power plants is, respectively, 49:51, while the ratio of generation of electric power by these two sources is, respectively, 75:25. The basic feature of Bosnia and Herzegovina's energy sector is the poor efficiency in the use of energy throughout the life cycle (from extraction of coal or import of fuel to conversion of energy into money or comfortable living conditions). The consequence of this is highly intensive use of energy – in 1991, Bosnia and Herzegovina had almost 2.5 greater consumption of energy per unit GDP than some other Yugoslav republics, such as Croatia and Macedonia. One of the reasons for highly intensive use of energy in Bosnia and Herzegovina at that time was that it was exporting electric power, at low prices, to some other republics of the former Yugoslavia.

The coals are younger coals, with high levels of ashes and sulphur, and of low heating value. Bosnia and Herzegovina does not have the types of fire boxes, especially those of lower power (household stoves) that would be suitable for the quality of the coals that are used, which decreases the level of efficiency of their use and causes pollution by products of incomplete combustion. The thermo-power plants that use coals produce large emissions of SO₂, and thus, in terms of specific emission of SO₂ (per capita), Bosnia and Herzegovina ranks third in Europe (1990).

The used hydro potential is below 40% of the utilizable one, which is quite low in comparison with other European countries. As for small hydro power plants, the degree of utilization is even lower. In 1991, in Bosnia and Herzegovina there were 11 small hydro power plants, which meant that only 4.4% of potential power of small HPP was used, i.e. 5.7% of the energy available. There are presently ongoing studies of hydro energy potentials. The legal preconditions have been created for building private energy plants and their incorporation in the electric power network.

The primary task of sustainable development of energy sector in Bosnia and Herzegovina is to lower the degree of intensive use of energy throughout the life cycle, from generation of primary energy, through processing of raw materials and production processes, to conversion of products and final forms of energy into money and quality of life; this includes the use of waste heat in other industrial plants, as well as in agriculture. The second task is to increase the energy efficiency of the use of fossil fuels (low cogeneration of energy, use of condensing boilers, use of heat from flue gases). The third task is to shift gradually toward the use of non-conventional sources of energy

(use of bio mass, passive use of solar energy, greater use of hydro potentials for small hydro power plants).

5.2. Iron and steel industry

Bosnia and Herzegovina was the major Yugoslav producer of iron, and to a significant degree of steel as well. This intensive production was stopped by the war. Presently, thanks to foreign investments (in Zenica Ironworks), this production is being renewed, which makes sense, because the high threshold limits are satisfied (built capacities, trained work force, excellent professionals in many fields). However, there are also opinions that the renewal of the steel production is unsustainable, because this industry will not be able to afford the costs of inputs (energy, water, etc.), the prices of which will continuously keep increasing. Due to these reasons, the owners of the Ironworks demand (from the state?!) to be granted special reductions in energy and water prices, in order to be able to achieve a cost-effective production. The question is where the optimum solution lies: in abandoning the plans to continue production and employ the existing skilled workers, or in maintaining the production at unrealistically low prices of inputs.

5.3. Aluminium and other non-ferrous metals industry

Bosnia and Herzegovina is a relatively large producer of alumina and aluminium. The most significant item on the side of costs in the manufacture of raw aluminium is the cost of electric power. Although this varies from case to case, the recycling of used aluminium (as secondary raw material) consumes 5-10% of the energy that is otherwise needed for obtaining aluminium from the bauxite ore, which means that the costs of production of secondary (recycled) aluminium are substantially lower than the costs of production of primary aluminium. With this in mind, it is clear why the prices of aluminium in the world markets are high, and why the countries that import the primary aluminium generate profit by processing the primary aluminium, and thus earn more by recycling than the countries that are producers of primary aluminium. Bosnia and Herzegovina is a large exporter of raw aluminium, while only negligible quantities are processed in the country. Likewise, only very small quantities of aluminium waste are processed in the country: waste aluminium is also exported. From the point of view of sustainable development of Bosnia and Herzegovina, both of the above are unacceptable. Incentives should be provided for development of processing industry on the basis of aluminium: this would both increase the demand for secondary aluminium and consequently also boost the collection and recycling of aluminium waste inside the country.

In Bosnia and Herzegovina there are two waste dumps – red mud pools - (remnants of bauxite ore and of alumina production process). On one hand, these waste dumps represent an environmental hazard (there is a possibility that they endanger the groundwater or that they cause an accident in case of dam failure). On the other hand, the enormous quantities (about 10 million tons) are a significant potential in terms of raw materials that could be used for commercial purposes. There are certain initiatives in Bosnia and Herzegovina that the red mud be used for commercial purposes.

5.4. Wood pulp and paper industry

Due to the large areas covered by forests, Bosnia and Herzegovina (before the war) had a developed wood pulp and paper industry. During the war, the factories in this industry lost their (former Yugoslav and world) markets, and the major part of them did not complete the process of transition of ownership (privatisation). Thus, these factories have been very slow to recover. As a consequence, there are no significant initiatives launched in these factories to introduce cleaner technologies, although such initiatives could open the prospects for attraction of donations from abroad, on the basis of international environmental protection programmes and investments into environmentally cleaner technologies. This would in turn strengthen the position of the factories and thereby facilitate the process of privatisation and re-penetration of markets. The collection and use of old, used paper is poor (although it was developed before the war). It is absurd that the old paper for the needs of the wood pulp and paper factories is for major part imported. The old paper (if

collected in an organised manner) could also be used in other places and for other purposes (for manufacturing of insulation materials, as source of energy, etc.).

5.5. Civil engineering , construction and building industry

It was expected that the reconstruction of Bosnia and Herzegovina would require significant involvement of domestic construction firms, and thus stimulate the manufacture and consumption of domestic building materials. In spite of the significant reconstruction efforts, this proved only partially true. The enormous quantities of building materials and goods were imported from abroad, largely from the neighbouring countries in the region (Croatia, Slovenia, FR of Yugoslavia, Italy). A great number of contracting and construction firms are in difficult financial situation, both the start-ups from the private sector and the old, state-owned firms, which before the war used to employ several thousand workers each – and which, through performing the construction works abroad, used to earn for Bosnia and Herzegovina more than one billion dollars in foreign exchange. The foreign markets have for major part been lost. It is difficult to repenetrate these markets, especially because the domestic engineering and construction firms are far from receiving any financial support from the domestic banking sector (which is still in the stage of restructuring of ownership) that would be comparable to the support given to their competitors in the markets (bank guarantees for offering major complex investment projects and for financing implementation). On the other hand, there are not enough jobs for them in the country, since there are no major construction works for building new industrial facilities, nor there are any public works (construction of roads, railways, plants, dams, hydro power plants, power transmission networks, etc.).

The most significant jobs for domestic contractors were those in the area of reconstruction of devastated housing facilities (there is much less of such jobs now). However, the existing legal regulations and the tax policy do not encourage the saving in energy (greater use of insulation materials -domestically produced- in construction, and more cost-efficient building of heating and cooling systems), so that the majority of the reconstructed buildings dissipate a lot of energy. The imperative drive is to find a shelter for one's head for as little money as possible. The question is whether this is a sustainable solution? Certainly not: such solutions give only illusive and short-term effects - cheaper construction, which subsequently requires far more expensive maintenance. Are such savings really significant in comparison with the large increases in consumption of energy for heating in the years to come and dramatic lowering of living and housing conditions, below the minimum European standards?

For engineering and construction contractors, a good source of income could be the systemic elimination of heat losses from certain settlements in BiH cities and towns. This programme, at least in its first years, could be financially supported by the state (possibly also by international organisations and the funds that support the projects related to alleviating the impact of climate changes, which could provide financial credits on favourable terms). The project could subsequently become economically self-sustainable, if 50% of the savings in energy were invested into the continuing stages of its implementation. This project could prove significant from the point of view of new job openings, and its effects would be soon felt. The elimination of heat losses from the existing buildings, apart from yielding long-term economic and social results (reduction in maintenance and heating costs, giving impetus to domestic manufacturers of building materials, particularly insulation materials, increases in the employment levels) is very much advisable from the environmental perspective, too.

Those forms of solar energy should be used, which do not need large investments (passive heating of water and passive heating of rooms and premises). The housing and construction schemes (and tax policies as well) should support and stimulate the use of domestic materials and materials that are not harmful for health and environment.

5.6. Situation analysis and recommendations for institutional, legal (legislative) and operative action measures for its improvement

One cannot expect from the energy and industrial sector to shift toward sustainable forms of development without first completing the privatisation in these sectors. However, the privatisation is not an end in itself. It is only one of the components of the transition process. The transition must be both technological and environmental, conducted simultaneously in these two areas. The examples

that would illustrate this are rarely found in practice in Bosnia and Herzegovina, yet there is an extraordinary case of the Cement Factory Kakanj, where the privatisation included both the technological and environmental rehabilitation, along with the introduction of a new, modernised system of management.

The following impose themselves as key tasks and operative measures for development of this sector and promotion of its sustainable development:

State:

- Provide conditions for functioning of domestic market without protectionism, but also ensure appropriate levels of protection of domestic production against unfair competition;
- Gradually introduce economic instruments (incentives and disincentives), in order to stimulate the enterprises to transfer, through internalization of external environmental costs, to less polluting technologies and less material-intensive technologies, and to use recycled and renewed materials;
- Support the reductions in consumption of energy per unit product or per unit of income. The measures for savings in energy must be additionally reinforced by special forms of tax policy incentives and by encouraging the use of insulation materials in construction, particularly those produced by domestic manufacturers.

Chambers of Commerce and associations of businessmen, as industrial sector representatives:

- Disseminate knowledge on sustainable development, raise the awareness among the management that the environmental component is an integral part of strategic management - and not something put under the responsibility of administrative officers in charge of environmental issues, that the environmental protection in modern industrial production is a development factor – and not something that increases the production costs due to the requirement to install protective filters.

Both the state and Chambers of Commerce should encourage the participation of BiH economy in international environmental programmes, as it is the best way to establish cooperation with developed countries and obtain their support for BiH enterprises. This particularly refers to cooperation with EU member countries. The EU, supported in this by the World Bank and other international funds and countries, will in the forthcoming five-year period invest considerable resources to assist both the county and its economic organisations and enterprises in complying with the environmental standards and regulations of the EU (which should be adopted and applied by the economy in about ten years time). This action will have a twofold objective: to accelerate the development of better-performing enterprises, capable of participating in international environmental programmes and requesting and implementing the financial assistance, and speeding up the closing down of poorly-performing enterprises that are incapable both to even request for assistance in the field of environmental protection and to appear on domestic market, let alone on foreign markets.

7. SUSTAINABLE DEVELOPMENT OF BIH SOCIETY AND COMBATING POVERTY

6.1. Demographic picture and social position of population

Sustainable development of a country represents a set of measures that have for their aim the improvement of the material and social position of the population. It is to be achieved through legislative, educational, stimulating and coercive (legislative) measures and activities. In order for Bosnia and Herzegovina to be set on the track of sustainable development, it is necessary to obtain a demographic picture and see what is the structure of its population (in terms of age, employment, education and social elements) so as to be able to create the appropriate strategy and programme for setting sustainable development in motion.

The Dayton Accords have established a new BiH system, initiated the activities on the normalisation of life and opened up a process of transition, i.e. a shift toward market economy and democratization of life and institutional structures of the overall system of governance. The notion of transition implies changes in the field of social relations, legislative, political and economic system,

ownership, function and nature of the state administration, role of individual person and human rights and freedoms that he or she is entitled to and can enjoy in practice under the new democratic conditions. In spite of the enormous military, policing and financial efforts of the international community, which followed the signing of the Dayton Accords in 1996, the process of normalisation of life, and thus of overall conditions in the county, goes slowly, with varying successes.

In the past period, the relations with the neighbouring countries have improved and normalised, which created not only a more favourable situation in terms of territorial aspirations and security, but also of economic and social preconditions for economic recovery of the country. The extent of normalisation of intergovernmental relations has a significant influence on the economic stability, as a precondition for the normalisation of the social position of the population, which at this moment is extremely unfavourable in Bosnia and Herzegovina, or, to be precise, on the edge of socially bearable. Since the economy and infrastructure of the country were interlinked with those of the neighbouring countries, i.e. former republics of the former common state, it is only natural that the flows of economic linkages be established with those with whom all the conditions and necessities point toward the possibility of mutual coexistence in economic and every other sense.

The BiH population is in extremely difficult social situation. Several elements may illustrate this:

- More than half of the population is excluded the process of work and devoid of possibility to earn for their living and for the living of their families. According to the ILO criteria, the unemployment level in Bosnia and Herzegovina, i.e. the aggregate level for both of its entities, is around 40%, which means 15% of the able-bodied population. It is by far and wide the highest level in European countries. If we add to these numbers the number of those who live on their entitlements as war disabled and veterans and the users of various forms of social security benefits, then the picture of the social situation of the BiH population becomes utterly bleak.
- Large numbers of inhabitants cannot live on their work and on the results of their work, particularly in the agriculture sector, because they cannot cultivate their own land, since their property has not been returned to them.
- There is an enormous number of pensioners in comparison with the number of employed, i.e. those who by their contributions fill the pension funds.
- Large numbers of unemployed, who only formally have the status of employed persons due to insufficiently regulated sphere of labour, are recorded as employed (they are on the "waiting for job" list). In accordance with the regulations presently in force, there are about 200,000 such persons in Bosnia and Herzegovina.
- According to the estimates of the Trade Union, in the process of ownership transformation and shift toward the labour market system, over 80,000 of those presently employed in Bosnia and Herzegovina will be left without employment. There are many different reasons for such difficult material and social situation of the population. We here give only few of them, i.e. those that are most dominant and that critically determine the social and living conditions of the population:
- The impossibility for a large number of people to return to their homes and pre-war places of residence. According to the (incomplete) statistical data, over 750,000 persons in Bosnia and Herzegovina are deemed to be refugees or displaced persons without possibility to have free use of their property -for major part immovable property, like land, house, flat, etc. According to (also approximate) data, about 900,000 persons are deemed to be refugees residing in third countries. The process of return of the population has been very slow in the past few years.
- The impossibility for young people, as well as for all others who had been left without employment, to get a job. The war has almost totally destroyed the economy and put the factories and infrastructure out of operation.

THE MOST VULNERABLE SOCIAL CATEGORIES OF POPULATION IN BOSNIA AND HERZEGOVINA ARE:

- **REFUGEES, DISPLACED PERSONS AND RETURNEES**
- **VICTIMS OF WAR (FAMILIES OF THOSE KILLED IN WAR, THOSE DISABLED IN WAR, UNEMPLOYED VETERANS)**
- **PENSIONERS AND PERSONS OF LOW FINANCIAL STANDING**
- **FAMILIES WITHOUT ANY EMPLOYED PERSON IN THE HOUSEHOLD**

- The inconsistent and disorderly legislation and inadequate tax system, which discourage foreign investments.
- A serious obstacle to the normalisation of economic flows, establishment of an efficient tax system and combating corruption and crime is also the incomplete control of borders, i.e. incomplete control of imports by state border services and customs administration bodies.

To date, the labour market mechanism has been established only in part, through only few elements of the Labour Law, i.e. only in the part that relates to limiting the rights of the workers and simplifying the procedures of dismissal and hiring for job. The Law on Employees' Councils, Law on Mediation in Employment Issues and the Law on Pension and Disabled Scheme have still not established a comprehensive labour legislation. The practice has shown that it is necessary to define in a comprehensive and consistent manner and normatively to regulate the area of labour, as a precondition for both the transition and the new market mechanism where labour is only a category complementary to capital.

Unregulated relations in the domain of labour, and inexistence (in practice) of a single economic system, have for their consequence the fact that many young educated and skilled people are leaving the country for abroad. According to unofficial data, since the signing of the Dayton Accords, i.e. from end-1995 to 2002, over 200,000 young, mainly educated people, left Bosnia and Herzegovina. This has far-reaching consequences for the pattern of skills in the economy, i.e. the structure of human resources necessary for development of economy and overcoming the grave situation.

However, in the last two or three years there have been some visible steps forward in relation to institutional efforts and programme activities in Bosnia and Herzegovina. We will mention only few of the most significant undertakings in this direction:

- An action programme for combating corruption was drafted and adopted at the state level
- An action programme for removing the barriers to foreign direct investments in BiH was prepared
- The implementation of the programme for creation of single economic space in Bosnia and Herzegovina is ongoing

6.2. Poverty and social policy

The problems are very complex in the social sphere as well. Before the war, there were about 50,000 socially vulnerable persons in Bosnia and Herzegovina. The war has destroyed the basis for subsistence of 600,000 people, of whom about 400,000 were in the age for work. Neither the economy has capacity nor the authorities have the funding sources to provide the resources needed for catering for the increased needs of the socially underprivileged population. Because of this, it is necessary to redefine the minimum levels of social care, with different categories of benefits to suit specific needs. This must also be reflected in labour and social care legislation. The new roles to funds and new sources of financing should be found on the part of the state, which has to take upon itself the responsibility to provide social security in the conditions of market-oriented economy.

Neither at the level of the state not at the entities' level there are social programmes or systemic measures to overcome the situation in this area. That is why it is necessary to adopt a clear programme of economic and social policy at the level of the state, for the implementation of which both entities and the District of Brčko would be responsible. The implementation of such programmes would be a step forward in overcoming the present difficult situation of people in social need in the country. This would create the preconditions for reducing the poverty to at least the bearable levels. This would mean a systemic and planned approach to addressing the most complex problem facing Bosnia and Herzegovina today.

Recently, with the assistance of the international community, programmes and projects were initiated for establishing the real situation regarding the levels of poverty in Bosnia and Herzegovina and the activities for its alleviation. In this direction there are significant programmes, implemented with the assistance of international donors, such as:

- Strategy for combating poverty in Bosnia and Herzegovina, and
- A programme for strengthening the statistical data system in Bosnia and Herzegovina and for making surveys into the economic situation of the BiH households

7. SUSTAINABLE DEVELOPMENT IN BIH

At the time of the biggest summit ever held in the history of the world, at which a new vision of development across the world was discussed, a terrible war was raging in Bosnia and Herzegovina, destroying human lives and annihilating the material wealth and natural basis of the BiH society. Under such conditions, rarely anyone knew that the Earth Summit was being held, let alone something about the conclusions of the summit.

Due to this, the ideas of sustainable development and the messages from the Earth Summit are known only to few, including the experts.

Great many international organisations support the recovery and development of Bosnia and Herzegovina through specific programmes and ongoing activities. However, the domestic authorities at the level of the state (with limited potentials and responsibilities) lack a consistent strategic framework for recovery and development. With insufficient inter-entity cooperation, even a philosophy that would reconcile the conflicting sides does not exist. For the last two years, the international community (the European Union, World Bank, and some individual countries through their programmes) has been introducing in Bosnia and Herzegovina the practices of environmental protection, but not of sustainable development as such.

7.1. Analysis of sustainability of development in BiH

The causes of the current poor financial standing of great many people in Bosnia and Herzegovina, who live in poverty or on the edge of poverty, are very complex, as has been shown by many analyses. Under such conditions, a question arises whether first to address the economic problems, and only after the environmental ones. It seems that many in Bosnia and Herzegovina think in this way (domestic authorities and international organisations). However, it is not difficult to show that the causes of poverty and the causes of environmental degradation are the same, at least in part – like excessive utilization of resources. An analysis of sustainable development, conducted on the example of energy sector – generator of economic development and, at the same time, the main culprit for adverse environmental impact in the UNECE countries - has shown that the wasteful utilization of resources, typical for the previous period of social development (1945 – 1990), combined with the policy of former Yugoslavia toward BiH, had weakened the economic power of BiH and its citizens, at the same time excessively exhausting its resources and causing pollution of the environment. Because of that, precisely the activities oriented toward the protection of environment should be the ones contributing to the economic development (saving in energy, recycling of waste, sanitation designed to lower the incidence of diseases, limitation of ambient pollution, etc.) and increase in economic strength of the state. If we accept the argument that the causes of economic inefficiency and environmental degradation are the same, it is logical to conclude that these causes should first be identified in order to address them. And the causes can be found in the definition of the goals of development (growth, not quality), organisation of society, building the image of consumption, etc.

Therefore, prescribing solely technical environmental protection measures would give the results that would be not even close to those needed, either in the field of environmental protection or in the field of economic recovery. It is not sufficient to plan actions just in the spheres of production of energy and pollution of environment. Instead, it is necessary to plan the actions so as to target the causes of both – economic inefficiency and environmental degradation. The natural basis for the activities and the technical potentials for resolution of these problems are at relatively high level. However, the economic potentials are below that level, the market potentials are even lower, while the social potentials are very low. The slow post-war development of Bosnia and Herzegovina is precisely the consequence of the low market and social potentials for development, which do not allow the natural, technical and economic potentials to be used to any significant extent.

This is to say that by protecting the environment (applying individual projects or interventions, such as technical measures) we cannot directly achieve any significant advances in resolving the development issues. But since we are dealing with wide array of problems, it appears that the steps forward could indeed be made by introducing (environmentally) sustainable development. It is exactly on this example that we can see a difference between the environmental

protection and sustainable development. While environmental protection focuses on the abatement of pollution and treatment of waste, sustainable development, on the other hand, as a model of development new for Bosnia and Herzegovina, operates in the direction of overcoming all barriers – social, market, economic and technical (precisely in this sequence) with an aim to reconcile the economic and environmental conditions and requirements, looking at the development from the point of view of quality of life, and not from the point of view of physical growth of steel or electric power output. Overcoming the barriers in this order is the only proper way, because it requires a complex approach, which is the characteristic feature of the philosophy of sustainable development. The complexity implies a multisectoral approach, synergetic use of all kinds of potentials and active participation of all groups of population.

As already mentioned at the beginning of this paper, at the regional conference dedicated to the preparation of national assessments of sustainability (within the preparations for the Rio+10 Conference), held in Turkey in September 2001, the representatives of some states stated that it was exactly through the energetic and organised introduction of sustainable development that they had been able to resolve many conflicts arising from the process of transition and accelerate the development. Bosnia and Herzegovina could be a suitable ground for changes in the quality of development. After the Berlin Congress, Austria successfully replaced the Turkish model of governance, which had lasted in this area for 400 years, by a new one; after the 2nd World War, Bosnia and Herzegovina was the most consistent one among the Yugoslav republics in introducing socialism and (somewhat later) workers' self-management system. The problems with introducing sustainable development in many developed countries lie in the inertia (organisational, technological, etc.) of the social system. In Bosnia and Herzegovina today, we are still introducing a market economy system to replace the previous social system of centrally planned economy. Therefore, if we were to work on the introduction of sustainable development in an organised manner, providing training for human resources and investing efforts into significantly raising the awareness level, with popular consensus of civil society, we could achieve good results.

What produces a bottleneck in the process of introduction of sustainable development in Bosnia and Herzegovina? Ignorance. The former Yugoslavia, as compared to the modern world, lagged behind in knowledge regarding the environmental issues. Bosnia and Herzegovina, in its turn, lagged behind the relatively developed republics of former Yugoslavia – Croatia, Slovenia, and Serbia. And when the time of the Rio Conference came, the war was already raging in BiH. Thus, even the top political leaders of the country, with rare exceptions, do not possess the necessary knowledge.

Sustainable development cannot be introduced at once. Certain sequential order of steps must be followed. A stochastic introduction of cleaner production, eco-management and sustainable agriculture will not produce any results. Due to three shocks (downfall of socialism, dissolution of Yugoslavia and war), the systems of management in Bosnia and Herzegovina have been destroyed to such an extent that we cannot speak here about correcting the development, but of imperatively introducing a completely new type of development. Therefore, as much as Bosnia and Herzegovina might be unstable today, and seemingly without any prospects for future, it could indeed be a propitious place for introducing the principle of sustainable development, but only if coordinated actions were to be undertaken.

7.2. Key (critical) issues in achieving sustainable development in BiH

In the state of Bosnia and Herzegovina, which during the 6 years of postwar reconstruction did not reach even 50% of the key indicator levels of the prewar (1991) development (GDP per capita, foreign trade, ratio of goods and services import/export values, levels of employment and living standard of the population), it is difficult to speak about the achievements of sustainable development in the previous period. There are many factors that are of significance for an organised programmatic approach to setting in motion sustainable development in Bosnia and Herzegovina. We will mention here only few crucial preconditions that characterize an integrated system of government and make possible a meaningful, well-thought out programmatic approach, i.e. creation of a policy and framework for implementation of measures and actions in moving toward sustainable development, and then give an appraisal of the status of the organisational and management system, i.e. the administrative system and the structure of key-decision makers.

7.2.1. Key problems – obstacles to initiating sustainable development

According to the findings of the surveys made to date (mainly initiated by certain members of the international community - WB, EU-EC, UNDP, REC) in the area of key sustainable development factors (legislation, institutional structure, development of a strategy, policy and plans for achieving sustainable development) Bosnia and Herzegovina is today facing serious problems, especially when it comes to resolving the economy - environment conflict.

The following significant statements characterize the nature of these problems:

- There is no defined policy and strategy (action programmes) for addressing the issue of sustainable development, and protection and management of environment;
- Poor institutional capacities for designing and implementing development and environment policy at all the levels;
- Civil society (NGO and other factors) practically does not participate at all in the creation of policy and taking of decisions in the area of sustainable development and environment;
- Insufficient sectoral communication between the entities, as well as between other stakeholders in the process of using of natural resources;
- There are no economic measures at the state and entity levels (incentives and disincentives relative to the attitude toward environment);
- Lack of trained professional staff in the administration and lack of training programmes for them;
- Poor knowledge of general public about the significance of environmental protection, and lack of awareness- raising programmes.

The conclusions of these surveys, to a large part, give a picture of the situation in Bosnia and Herzegovina in this area, and indicate the directions for key actions to be taken in regulating the relations and developing the capacities for resolving the already alarming environmental and sustainable development issues.

7.2.2. Institutional capacities for implementation of sustainable development at the state level – an appraisal of the present situation

The room is limited for influencing and intervening in sustainable development (particularly within its programme structure) from the level of the state and state institutions, even more limited for non-governmental organisations and civil society. To date, Bosnia and Herzegovina has not taken part in the activities of Agenda 21, nor it has developed its own programme of actions for implementation of the conclusions of the Rio 92 World Summit and Agenda 21. As of recent, there are certain positive steps taken regarding the strengthening of the necessary state institutions and extending their jurisdiction, in the sense of shaping the state of Bosnia and Herzegovina as an active player in the development of international, global and regional cooperation and partnership, creation and implementation of sustainable development policy, even in the global protection of environment through implementing and monitoring the implementation of international environmental agreements, conventions and protocols in Bosnia and Herzegovina.

The changes in the institutional structure of the state administration are being effected with a significant technical and financial assistance of the international community, i.e. its multilateral and bilateral organisations and agencies (World Bank, EC-EU, OHR, UNDP, USAID, etc.).

Some of the governmental bodies are assuming an increasingly active role in the coordination and even in the implementation of the international agreements and programmes which have a direct impact on the process of approaching the sustainable development goal in Bosnia and Herzegovina:

- The BiH Presidency - in shaping the foreign policy and international relations of Bosnia and Herzegovina,
- The Council of Ministers - in creating the strategy and policy of social and economic development of BiH and meeting the international commitments;
- The Ministry of Foreign Affairs - in concluding international multilateral and bilateral arrangements and agreements for Bosnia and Herzegovina, and following the procedures for their ratification;

- The Ministry of Foreign Trade and Economic Relations – in coordinating the implementation of international treaties, agreements and programmes of social and economic reconstruction, transition and development, combating poverty and implementing international environmental agreements and programmes (GEF) and coordinating natural resources management in the country;
- The Ministry for European Integration – in coordinating the European transition programmes and European Union projects, particularly SEE Stability Pact, and in harmonising the economic and environmental standards in Bosnia and Herzegovina with the European Union environmental policy standards.

7.2.3. Development of legislation

Unfortunately, in terms of consistent development of legislation in the area of management and economical use of its natural resources and protection of environment, as the basic postulates of balanced and sustainable development, as well as in terms of building and strengthening institutional structures for managing these issues, Bosnia and Herzegovina considerably lags not only behind the developed European countries, but even behind the developing countries, including those in economic and social transition.

Bosnia and Herzegovina does not have in place, either at the state or at the entities level, the legislation that would regulate and harmonise, in synergy with the implementation of the fiscal policy of incentives and disincentives, the economical, cost-effective exploitation of natural resources, particularly potable water, energy, agricultural land and forests, along with the protection of environment. Apart from that, Bosnia and Herzegovina does not have such body at the level of the state (ministry or other) that would have the powers, on behalf of the state, to design and implement, with full responsibility, the policy of environmental protection, and to fulfil the international obligations, that the state had, as part of international community, committed itself to in this area.

To date, there have been no significant achievements in the area of legislative system at the state level that would, in correlation with the preparation of social, economic and environmental policy, present a legislative basis for establishment of sustainable development.

Bosnia and Herzegovina, which was in many ways a creation of the Dayton Accords, in 1996-2001, the period of creation of its sovereign legislation, due to complex political relations in the country, dedicated much more attention and time to the drafting and adoption of the so called political and social laws, than to the designing of legal regulations in economic sector - and practically no time and attention to regulations relating to environmental issues and sustainable development. Due to these reasons, Bosnia and Herzegovina is still not defined in terms of single economic space with single policy and strategy of social and economic development, management of natural resources and environmental protection.

7.3. Sustainable development in strategic documents and programmes of BiH

7.3.1. Legislative and institutional basis – strategic documents

As far back as 1974, BiH had adopted a law that basically incorporated a concept that was later to be called sustainable development. It was the only law among the physical planning laws from the territories of former Yugoslavia that was endorsed by the Council of Europe. It is called the Law on Physical Planning. This law treats the subject matter of urban and physical planning, environment, planning of space and settlements, and construction and building, in a comprehensive and consistent way. The protection and promotion of environment is regulated as integral part of all the activities and interventions in space. By applying such approach, it does not focus on the restrictive and limiting, passive protection of environment that would go against development trends, but rather opens a possibility for the development to be directed in such a way as to allow the new interventions in space to promote the quality of environment. In that spirit, the relevant provisions on the quality of environment are incorporated consistently in all the articles that regulate the goals and relevant special development processes: from planning, siting and designing to building and using the facilities, structures and plants, including the monitoring and inspection. We could freely say

that the law, at least in terms of its concept, was based on the principles of sustainable development that were to be promoted in the world more than 10 years later. Unfortunately, this law could not direct the development of Bosnia and Herzegovina toward sustainable development, because other necessary conditions for doing that were missing.

In the postwar period, Bosnia and Herzegovina did not adopt any strategical document related to sustainable development (such as BiH Agenda 21, Sustainable Development Act, State Environmental Strategy, National Sustainable Development Strategy, Program Capacities 21) nor has it formed a national governmental body (committee, commission, forum, or similar) for coordinating and managing environmental issues and sustainable development, like the great majority of the developing and transition countries did after the Rio 92 Summit. However, certain steps at the state level have been taken during the last two years, particularly in recent months, inspired among else by the preparation of this report as well.

Some of the most significant efforts in this direction, at the state and/or inter-entity level, conducted by domestic experts, with the assistance of the international community in BiH, and some of which are still ongoing, are listed here:

Strategic – institutional documents

- Development of «Global Framework for Economic Development Strategy of Bosnia and Herzegovina for 2000 – 2004 – ENTREPRENEURIAL SOCIETY» adopted by the Council of Ministers of BiH (2000);
- «UN joint study for BiH», prepared by UNDP in cooperation with domestic experts (2000);
- Solid Waste Management Strategy in BiH (EU-PHARE project)
- Report on the Status and Need for Environmental Legislation in BiH, prepared by BiH – REC BiH) in the framework of REReP, and its project of Building Capacities in Southeast Europe for Accession to European Union (2002);
- Drafting of set of 5 environmental laws on entity level, coordinated between the entities (Framework Environment Law, Law on Water Protection, Law on Waste, Law on Protection of Environment and Law on Protection of Air) prepared by international consultants, with the assistance of EC-EU (2001);
- Establishment of institutional and organisational infrastructure at the state level, for coordination and management of environmental issues and GEF programme, adopted by the Council of Ministers of BiH (2002).

Important action programmes

- Development and elaboration of a State Programme for gradual elimination of substances which deplete ozone layer in BiH, as first strategic and programme document in the area of environment in BiH, prepared with the assistance of the Multilateral Fund for Implementation of Montreal Protocol and UNIDO, under which the implementation of specific (investment) environmental protection projects has already begun (2001);
- Programme of European Commission Environment Programme for BiH (EC EP BiH);
- Mediterranean Action Plan (MAP);
- National Environment Action Plan, with the assistance of the World Bank, in the final stage of preparation, (NEAP B&H);
- Building capacities for implementation of cleaner production in Bosnia and Herzegovina (EU LIFE Programme)

The significance of these efforts and documents, from the aspect of sustainable, particularly environmental development, lies in the fact that for the first time there were:

- undertaken and initiated first studies and prepared a survey of situation in the area of sustainable development and environmental legislation in Bosnia and Herzegovina,
- launched the efforts to address the basis of a system of legislation in the area of environmental protection,
- developed first national strategic documents and operative-action programmes, which serve as guidelines for future methods for addressing the key issues of economic and environmental i.e.

- sustainable development and implementation of international environmental protection agreements in Bosnia and Herzegovina,
- actively involved the local human potentials in the designing and elaboration of these documents, with the technical and financial assistance of international community.

7.5. Programmes of international support and international participation of Bosnia and Herzegovina in designing sustainable development

Although the international community and the multilateral and bilateral donors have done a lot to initiate and carry out the programmes of postwar reconstruction of Bosnia and Herzegovina, mostly through specific projects for which large sums were spent, these programmes were not, however, fully true to the spirit of sustainable development. This is in a way understandable, because these were the emergency programmes, meant to resolve the burning issues of the postwar reconstruction: recovery and reconstruction of largely destroyed infrastructure, reconstruction and building of devastated settlements, humanitarian assistance to sustainable return of refugees and displaced persons, and, to a lesser extent, kick-start programmes for recovery of the destroyed economic structure and economic transformation.

However, several projects, undertaken by international multilateral organisations, primarily the World Bank, European Commission and UNDP, and bilateral donors, among which particularly effective were the governments of the USA (through USAID), Japan and the Netherlands, of reconstruction, renewal and construction and building of new infrastructure facilities (roads and railroads, water supply, power network, including the renewal of electric power plants) were indeed of major importance for initiating sustainable development in Bosnia and Herzegovina.

However, it is difficult to evaluate the achievements and processes of moving toward sustainable development, since, according to the expert estimates of international agencies (the World Bank, EBRD), almost 50% of the major infrastructure facilities were destroyed during the 4 years of the war. It is also difficult to compare with other CEE transition countries, which did not undergo any violent destruction. Concerning the rehabilitation of the devastated infrastructure and damages to the environment, development of the environmental legislation and institutional infrastructure, and the projects of institutional strengthening of national and entity administrations and building capacities for international global and regional cooperation, it is important to mention the following (groups of) programmes and projects, implemented or ongoing, undertaken in the framework of international support to initiating sustainable development in Bosnia and Herzegovina:

- Programmes for reconstruction, renewal and development of road infrastructure (the World Bank)
- Programmes for reconstruction of agriculture and cattle-breeding (FAO and the World Food Programme)
- Projects for rehabilitation and reconstruction of electric power system: hydro power plants, thermo power plants and transmission network (the World Bank, USAID)
- Programmes for reconstruction of water supply systems (USAID and the World Bank)
- Village Environment and Employment Programme – VEEP (UNDP, EU and group of bilateral donors)
- Programmes and projects for protection of ozone layer (Multilateral Fund, UNIDO)
- Natural resources strategies and agricultural development in entities (FAO)
- Mine clearance programme (UNDP, EU and group of bilateral donors)

8. SUSTAINABLE DEVELOPMENT IN THE DOCUMENTS AND PRACTICES OF BIH ENTITIES

The entities' governments did not adopt any strategic programmes related to the implementation of sustainable development practices, although there were certain documents where the term of sustainable development and related issues was partly mentioned. The district of Brčko also did not make any significant steps in this direction.

Republika Srpska did nevertheless adopt several long-term strategic programmes, which to certain extent, although not directly, touch upon the sustainable development issues. Perhaps the

most significant among them is the Spatial Plan of Republika Srpska for the 1996-2015 period, i.e. the Staged Implementation 1996-2001 Plan, which specifically elaborates and accentuates the environmental protection segment.

Apart from the Physical Planning Law, certain regulations, in form of by-laws, provide for the use of agricultural and building lands and sites, forests, water, ores, transport, energy, conservation of cultural and historical heritage and nature, and protection against natural disasters.

Concerning the strategic documents and/or programmes of the BiH Federation, prepared or in preparation, the following are worth mentioning: Makroeconomic vision of the development of the BiH Federation – Strategic goals and global activities, developed at the entity level; and in the area of protection and sustainable management of water, the Principles of Integrated Development and Management of Water Resources, adopted by the Public Company Water District of the Adriatic Sea Basin, in accordance with Agenda 21.

Both entities (BiH Federation and Republika Srpska), with the assistance of the European Commission, are introducing a set of modern environmental laws (a set of five environment laws and a Law on Eco-fund). Also, both entities adopted the laws on free access to information, as form of implementation of the Aarhus Convention. Republika Srpska, in the framework of the procedure of enforcement of laws, prepared a Guide that was circulated to all the libraries and municipalities in this entity. A directory of the PR officers of all the ministries and the Instructions on Information, Training and Costs were also prepared. The PR Information Service also designed a web site with information on environmental protection. Also worth mentioning is the generous support of the Information Service in making available the information in the area of environmental protection legislation and its promotional activities in publicizing the activities of the sector through media presentation in RS.

The government of the Federation of BiH established the Fund for Sustainable Development, the activities of which are in early stages.

At lower administrative levels, certain development planning documents, in compliance with the principles of sustainable development, were passed, such as:

- *“Sarajevo Canton Strategy of Development until 2015”*, adopted by the government of the Sarajevo Canton in 1998, and endorsed at the international conference the same year.
- The local communities from the cities of Tuzla and Bijeljina adopted Local Agenda 21. They observed from practice that there was a need for cooperation and synchronisation of activities in the bordering parts of these areas.
- The city of Banjaluka, in cooperation with the cities from the Federal Republic of Germany, is presently drafting and preparing the implementation of the Local Agenda.

Only few enterprises from both entities have adopted development plans based on the principles of sustainable development. The Chamber of Commerce of the Sarajevo Canton has a programme for organised introduction of sustainable development for its members. To date, they have organised, in the framework of the programme, many seminars for the representatives of SME on the topic of sustainable development and environmental protection. Of particular importance is the launching of the initiative on joint introduction of environmental goals as integral part of the management of enterprises.

Printed media inadequately inform the general public on sustainable development, so that the average public is completely unaware of the notion. However, we should mention here that the Radio of the Federation has for several years been broadcasting once a week a half-hour show on the theme of environment, introducing the term of sustainable development. The Television of BiH has been broadcasting for more than fifteen years a TV show “Living with Nature”. The Radio of Republika Srpska has a similar weekly show. A dozen booklets were also published on the topic of sustainable development and environmental protection.

In BiH, there is an increasing number of non-governmental organisations dealing with the issue of environment, some of them giving particular attention to the term of sustainable development in their programmes. It is worth mentioning that these organisations in 2001 formed a joint association «Ekološki forum BiH» (BiH Ecological Forum), gathering 38 non-governmental, non-political, non-profit environmental protection organisations from all parts of Bosnia and Herzegovina.

9. INSTITUTIONAL ARRANGEMENTS FOR COORDINATION AND MANAGEMENT OF ENVIRONMENT AND SUSTAINABLE DEVELOPMENT IN BIH – NEW TRENDS

9.1 Fora for coordinating environmental management in BiH

There are several registered or active fora in Bosnia and Herzegovina dealing with coordination of environmental issues, regional international cooperation and programmes for environmental protection, either at inter-entity or national level, which are however not mutually linked and whose activities are not harmonised.

These are primarily the following fora and centers (some of them were established earlier, and some just recently):

- Coordination Committee for Environment, an inter-entity body (established in 1998, on the basis of MoU between the governments of the Federation of BiH and Republika Srpska),
- BiH Regional Environment Centre (established in 1999, as part of CEE REC),
- Eco-Forum of Bosnia and Herzegovina (established in 2001 on the basis of an agreement of 38 different ecological societies, entity and regional associations of citizens for environmental protection) and
- Working Group of the Regional Environment Reconstruction Programme (REReP)
- Interentity Water Commission

The creation and establishment of these fora, associations and centres, although significant and useful, was unfortunately conducted in a totally uncoordinated manner. It was done on the basis of various agreements between entity governments, decisions of the Council of Ministers, by or with the assistance of international community and some of its key representatives in Bosnia and Herzegovina. Some of these fora did achieve significant results (like the Coordination Committee for Environment), but the way they were formed is yet another example of the previous inconsistencies of international community (which has a powerful influence on the overall legislative, organisational and institutional structuring of Bosnia and Herzegovina) and of the general overlapping of activities in the area of development and implementation of environmental policy in Bosnia and Herzegovina. The responsibilities, operations and actions of these fora are frequently overlapping and redundant.

New arrangement of institutional and organisational infrastructure for environmental management and GEF programmes in Bosnia and Herzegovina, including the setting up of the highest forum – Steering Committee for Environment and Sustainable Development of Bosnia and Herzegovina, formed in accordance with the 16th of May 2002 Decision of the Council of Ministers of BiH, opens a new chapter in the treatment of these issues and creates very important preconditions for establishment and strengthening of international cooperation of Bosnia and Herzegovina in the area of formulation and implementation of sustainable development and protection of environment.

Hopefully, the establishment of these structures, and the restructuring of the previous ones, will prove to be a significant process that will enhance coordination and cooperation between all governmental and non-governmental agencies and organisations at the national, entity and regional levels, in their dealing with the backlog of problems in the area of management and protection of environment and sustainable development of the state of Bosnia and Herzegovina and its administrative units, i.e. the entities and the Brčko District.

It is important to note, that according to decisions of the Council of Ministers of Bosnia and Herzegovina, the coordination of the activities regarding environmental issues and natural resources management, including the coordination of energy policy and international cooperation on GEF programmes, as well as the elaboration of the national environmental laws, will in future be confided to the professional administrative structure at the state level, based in the Ministry of Foreign Trade and Economic Relations of Bosnia and Herzegovina.

10. CONCLUSIONS AND RECOMMENDATIONS

This report, which gives an assessment of the situation regarding the sustainable development in Bosnia and Herzegovina, is organised into chapters, of which each deals with a key segment that is of importance for moving toward sustainable development and elaborates the

issues, barriers and threats, suggesting proposals for conclusions and giving recommendations for addressing the particular issue.

On the basis of the above assessment of the key problems, and taking into account the achieved results in introducing the practice of sustainable development in Bosnia and Herzegovina, the following general conclusions and recommendations may be drawn:

1. The specific economic and environmental situation in Bosnia and Herzegovina, generated by the war (1992 –1995) and postwar reconstruction efforts (1995 – 2002), requires specific approach to the evaluation of sustainability of social, economic and environmental development achieved so far and to the designing of consistent systemic arrangements for further advancement in this direction:
 - Development and sistematization of legislation, primarily in the area of the use of the country's natural resources and management of environment,
 - Institutional organisation of structures at the level of the state, entities, Brčko District and lower (regional) levels, responsible for economic development, environmental management, and development of own capacities,
 - Active participation of all the stakeholders of the BiH society (governmental sector, NGOs, trade-unions, environmental civil society associations, associations from the economic sector, scientific and educational institutions, women's and youth associations, etc.) in the designing of policies, preparation and implementation of the programmes of sustainable development, management of natural resources and national heritage and protection of environment,
 - Preparation of own programmes, global and specific projects for international cooperation and support in the resolution of the crucial environmental issues, and creation of preconditions for balanced use of natural resources and establishment of sustainable development.
2. Bosnia and Herzegovina must build, as integral state, its capacities for developing higher levels of international cooperation and partnership, both in terms of global, economic and environmental cooperation and (primarily) cooperation in the narrow and wider region, relating to:
 - Accession to international multilateral environmental agreements and their implementation in practice,
 - Development of multilateral and bilateral trade cooperation and partnership,
 - Promotion of domestic and foreign economic investments and provision of political, social and economic stability, which in turn would make it attractive for FDI,
 - Development of own human resources and efficient institutional structures for initiating and implementing sustainable development.
3. International support to Bosnia and Herzegovina in the process of its social and economic reintegration and building of capacities for creation of its own (sustainable) future should primarily focus on:
 - Development of human resources, acquiring skills and building professional capacities for promoting and managing own development, and resolving environmental issues in the country,
 - Technical and financial assistance for preparing, developing and implementing own and joint (international) programmes and projects of economic development, rehabilitation and protection of environment,
 - Development of partnership and partnership cooperation in resolving the global and regional problems regarding environment and social and economic development
4. The Assessment of Sustainable Development in Bosnia and Herzegovina is the first official document treating the issues of sustainable development of Bosnia and Herzegovina that was prepared at the state level. This document is meant to be used for promotion and initiation of the process of sustainable development in Bosnia and Herzegovina, which itself needs promotion and publicising through electronic media and press, educational

institutions, non-governmental organisations, etc. in order to inform and raise the awareness of the general public. At the same time, it is necessary to start preparing the Strategy of Sustainable Development of Bosnia and Herzegovina, which would serve as a guideline for the authorities at different levels, and for the businesses and companies and development institutions, in their search for higher quality development, better and more economic use of natural and human resources, as well as it could be of assistance in eradication of poverty in the country. The Steering Committee for Environment and Sustainable Development in Bosnia and Herzegovina, formed at the time when this report was being prepared, and the foundation of which was inspired by preparations of Bosnia and Herzegovina for its participation at the World Summit on Sustainable Development BiH Rio+10, will be a place that will generate impulses and coordinate the whole process. Also, during the public debates on the preliminary draft, and later on, on the draft of this report, held at three round tables and workshops in Sarajevo, Banja Luka and Mostar, and also during the final consideration of the draft report at the session of the Steering Committee for Environment and Sustainable Development, it was stated that it would be necessary to prepare the BiH Sustainable Development Implementation Strategy, and it was proposed that the Report on the Assessment of Sustainable Development in Bosnia and Herzegovina be used as a basis for the preparation of such strategy.