UNIVERSITY OF LJUBLJANA
FACULTY OF ECONOMICS

UNIVERSITY OF SARAJEVO
SCHOOL OF ECONOMICS AND BUSINESS

MASTER'S THESIS

NATIONAL FRAMEWORK FOR SUSTAINABLE DEVELOPMENT IN BOSNIA AND HERZEGOVINA: A COMPREHENSIVE ASSESSMENT OF POLICIES, INSTITUTIONS AND INDICATORS

Ljubljana, June 2015   DINA KARIC

AUTHORSHIP STATEMENT

The undersigned Dina Karic, a student at the University of Ljubljana, Faculty of Economics, (hereafter: FELU), declare that I am the author of the master's thesis entitled National Framework for Sustainable Development in Bosnia and Herzegovina: A Comprehensive Assessment of Policies, Institutions and Indicators, written under supervision of assistant doc. dr. Sabina Silajdzic.

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INTRODUCTION

As countries struggle to attain sustainable economic development they are faced with many choices, obstacles and challenges. Certain challenges are so great that some nations are not even pursuing this globally altruistic goal. However, as the world faces an ever increasing population, a limited supply of natural resources and growing income disparities – soon pursuing sustainable development may no longer be a choice for countries. One of the main goals of nations is to find ways to improve the lives and the wellbeing of their citizens and they often do so by achieving economic growth. It is simple - as an economy develops, people's incomes grow which improves their own standard of living. Government income also increases which allows for investments in education, infrastructure, health and other areas that lead to a better quality of life. It seems like a win-win situation. However, to drive economic growth a country must use its capital resources in the form of natural and human capital, and therein lays the problem. Natural resources can be depleted and human capital requires continual investments. If both are not nurtured and used wisely, a country may be left without the essential elements required for growth to happen. Sustainable development is still economic growth, albeit slower growth, but it does not neglect rather cultivates environmental and human capital. So what are some of the challenges? Well the first challenge is being committed to sustainable development. This is not an easy choice to make, especially for developing countries. Developing countries have a lot of catching up to do as they want to reduce income disparities between themselves and developed economies. Yet their growth often depends on using finite natural resources, which if used too quickly can be detrimental to their future growth. It is therefore, no wonder that many developing countries and governments struggle between choosing instant wins (traditional economic development) versus investing in long term sustainable measures.

For countries that have surpassed the political dilemmas and are committed to sustainable development, the next challenge is actually implementing it. Implementation first means having a vision and clearly defined goals that reflect the needs of all stakeholders. These goals need to be translated into actions presented through strategic plans. As sustainable development touches on so many different areas, strategies need to be implemented by a wide range of stakeholders. Secondly, a country needs to have capable institutions that are well resourced with staff and finances to implement strategies. Finally, they need to monitor the implementation process, and t consistently evaluate whether they are staying on the sustainable development path. A sustainable development approach requires the integration of the economy with the environment and social elements, therefore it requires more resources than a traditional economic development approach. It is a challenge even for developed countries to meet all of these requirements and even more so for developing countries. Developing countries often have less financial, human and physical resources which prevent them from implementing the wide range of measures required for sustainable development.

The principal interest of this research is to address the variety and complexity of issues related to the concept of 'sustainability' while referring to the specific case of Bosnia and Herzegovina (hereinafter: B&H). The conceptual framework of this research aims to identify the state of sustainable development in B&H considering the importance of institutional and policy instances, as well as sustainable development measurement. Specifically, in this research an in-depth analysis of B&H's institutional and policy dimensions related to the concept of sustainable development will be completed. Further, an attempt is made to develop a conceptual framework for measuring sustainable development based on measuring approaches and methods proposed by UNECE (hereinafter: United Nations Economic Commission for Europe), OECD (hereinafter: Organization for Economic Cooperation and Development) and EC (hereinafter: European Commission). The objectives of this thesis will be to:

- To determine whether sustainable development elements are integrated into public policy and governance at the State and Entity levels in B&H while referring to key strategic documents and governance practices.
- To identify the existing and propose a favorable institutional framework for sustainable development in B&H based on a critical assessment of the alternative institutional approaches to sustainable development.
- To assess the current institutional capacity for sustainable development at the State and Entity levels in B&H.
- To identify priority areas that B&H must address to embark on the path to sustainable development over the medium term.
- To propose a conceptual framework for implementing sustainable development in B&H including policy requirements and institutional capability priorities.
- To propose indicators for sustainable development in line with the proposed conceptual framework for implementation of sustainable development in B&H.

The structure of this thesis includes Chapter 1 which is an overview of the conceptual framework of sustainable development. A literature review was completed to assess if sustainable development can be achieved. This focused on analyzing whether the economic, social aspects and the environment can converge. This Chapter also analyzed the global progress on the sustainable development path. Chapter 2 looks at the institutional framework required for sustainable development to be implemented. Specifically, it focuses on sustainable development strategies and what characteristics they should include. It also includes a discussion about the monitoring and evaluation framework required for sustainable development and provides an overview of main global SD indicator frameworks. In Chapter 3, an economic overview of B&H and its government structure is provided. This was followed with an assessment of the country's progress in the areas of social and environmental aspects which included reviewing B&H's

scoring on two global indices – the Human Development Index and the Environmental Performance Index. A literature review was then completed to identify the reasons why B&H performed poorly on the indices in the areas of health, education, poverty and the environment. Chapter 4 involved analyzing B&H's institutional conceptual framework for sustainable development by first looking at the country's policy and policy governance for sustainable development. The institutional capacity for sustainable development was assessed through semi-structured interviews. Finally, this Chapter also included an assessment of B&H's ability to collect data for sustainable development indicators. The final part of the thesis included the conclusion and a section on policy recommendations for implementing sustainable development.

To our knowledge, no such analysis or thesis has been previously completed. The limitation of this paper is that not all of the Ministries and government agencies that are responsible for sustainable development were assessed. The reason for this was because of the complex administrative structure of B&H which has resulted in a large number of institutions involved in sustainable development and this is beyond the scope of this thesis.

1 THE CONCEPTUAL FRAMEWORK & PROGRESS MADE IN SUSTAINABLE DEVELOPMENT

Sustainable development is a concept that moves further and expands on traditional economic development, the latter being a historical goal of many countries in their efforts to increase the wealth of their citizens. The traditional economic development model as summarized by Chen, Bayaraa, & Dai (2012, pp. 24-80) is "the increase in the standard of living in a nation's population with sustained growth from a simple, low-income economy to a modern, high-income economy". It was soon recognized that this approach did not resolve the dire situation where the basic needs of many people were not being met - such as food, shelter, clothing and jobs. It was also leading to increased poverty and inequity. Where there is poverty there is also a propensity for ecological and other crisis. Nations began to realize that global priorities needed to move away from an exclusively growth orientated path to one that ensures equitable opportunities, thereby curbing widespread poverty and stopping the endangerment to the environment (United Nations, 1987).

Economists like Thomas Robert Malthus (1766-1834) first began talking about sustainable development in the late 18th century. Malthus raised concerns about whether there would be a limitation to growth because of depleting natural resources required for production. His focus was on agriculture and Malthus was concerned that the supply of good quality agricultural land would run out leading to reduced agricultural production. He was convinced that there would no longer be an ability to feed a growing population, and there would be less food for everyone. This would then lead to a decrease in the standard of living to a subsistence level, impacting the

population which would cease to grow. Another prominent work came out in 1959 written by Schumacher in his book The Crucial Problems of Modern Living and later in his 1979 Small is Beautiful book. Schumacher discussed concerns about the hasty decline of natural resources, the destruction of the environment and using appropriate technology to combat this (Mebratu, 1998). A growing voice for change began to occur in the 1970s that called for social aspects to be considered. This was mainly spurred by awareness that the economic policies of the 50s and 60s were not providing the expected impact. The immediate post-World War II period focused on economic growth based on an increase in outputs. This led to strong economic growth which eventually should have trickled-down to all segments of society, it did not. In the 70s, the growing gap between regions, between the rich and poor, made governments realize that policies had to be changed to support social development and achieve more equal income distribution (Economic Commission for Africa, 2005). The first global conference on managing the environment called the Conference on the Human Environment was organized in Stockholm in 1972. At the same time, a group of eminent scientists met in Rome to assess and complete a report on the global environmental crises. This group, later known as the Club of Rome, concluded that if industrial production continued to grow at the rate of the 60s and 70s it would exceed all ecological limits.

Eventually terminology started to define this new paradigm, the first of which was eco-development articulated in the UN Environmental Program review in 1978. It was also at this time that international recognition occurred that the environment and the economy needed to be considered concurrently. Mebratu (1998) states that the first conceptual breakthrough came in 1980 with the development of the World Conservation Strategy, which was an attempt to integrate the environment and economic development concerns under the broad term of conservation. The word sustainable development was first mentioned in the Our Common Future report presented at the United Nations Conference on Environment and Development (called the Earth Summit) held in 1992. The conference led to the development of major international documents that became the foundations for sustainable development and included the Rio Declaration, Agenda 21 and conventions on biodiversity and climate change.

Despite the introduction of the term, its definition remains vague and is interpreted differently. The ambiguity in its definition has led countries to define it according to their own principals or ideals. Definitions vary from the wellbeing of citizens, health, education, citizen's having a political voice and good governance, material living standards, present and future environmental conditions and physical and economic security (Ngomba, 2013). Others describe sustainable development as activities resulting in increased productivity by producing more for less or providing more equal access to resources (Chen, 2011). The OECD (2002) provided a summary of different views on sustainable development, the most common definition being economic growth that is not curbed rather that has incorporated some environmental elements resulting in a

solution that combines the economy with new environmental technology. The extremists believe that sustainable development does not go far enough and is too human-centric, too moderate and does not sufficiently limit consumer culture. Others believe that sustainable development does not pay sufficient attention to alleviating poverty and has little concern of how vulnerable the poor are to environmental degradation. Developing countries often feel that sustainable development is a measure to impose additional barriers to trade for their countries curbing their ability to achieve greater economic benefits (OECD, 2002). Although some view sustainable development from the lenses of maintaining and preserving the environment, there are also many that prefer the three pillars approach which emphasizes the relationship between humanity and nature (Robinson, 2003).

Notwithstanding all of these endeavors to define sustainable development, the most frequently quoted definition was articulated in the Our Common Future Report presented at the Earth Summit: "sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations, 1987, p. 16). The Report called for a broader interpretation of economic development that included the growing problem of poverty, the need to implement measures that would foster greater equity, and that would not be environmentally damaging but would also be economically valuable (Edwards, 2012). The report stated that a holistic combination of three areas was needed – these would come to be known as the pillars of sustainable development categorized as economic, social and environmental pillars.

Like the definition for sustainable development, the three pillars are not precisely defined and have been interpreted differently by stakeholders. The most commonly agreed upon definition is for the **economic pillar,** which is typically expressed by the Gross Domestic Profit (Kuhlman & Farrington, 2010). The Global Development and Environment Institute (hereinafter: GDEI) have a more specific definition whereby the economic pillar is a system that is able to produce goods and services on a continuing basis to maintain the required levels of government and ensure the payment of the external debt (GDEI, 2000). Overall, the economic pillar can be defined as the traditional economic development model.

The **social pillar** is probably the vaguest of the three pillars, the only commonality among the different interpretations is its focus on the human aspect of growth or human capital. This pillar is concerned with the overall wellbeing of the population, reducing global inequalities and the contribution of the poor to economic growth (United Nations, 1987). The UN defines the social pillar as including poverty, demographics, health, governance and education. The EU's definition differs slightly and includes social inclusion, public health, demography and good governance. The OECD defines it as being economic self-sufficiency, equity, health and social cohesion (Murphy, 2012). According to Kuhlman and Farrington (2010), the social pillar is everything

connected with human aspirations, including equity which they state is translated as income distribution, inclusion through employment, health expressed through the life expectancy indicator or access to medical services. GDEI (2000) defines the social pillar as a system where distributional equity is achieved in a socially sustainable system, where there is an adequate provision of social services, including education and health, political accountability and gender equality. The social pillar is also defined as poverty, empowerment, culture and heritage. Murphy (2012) stated that the social pillar is represented in terms of national welfare for current generations. It is clear that like sustainable development, a common definition for the social pillar remains elusive. Despite its plethora of interpretations, the social pillar is considered to be the foundation of economic progress and governments that do not focus on human development will have inhibited economic growth (Kosack & Tobin, 2006). For example, the World Bank suggests that the contribution of education to long-term growth is that for each year of schooling long-run growth is increased by 0.58 percentage points (World Bank, 2007).

The **environment pillar** places importance on the value of natural resources as irreplaceable capital in the production process. It looks at the usage of natural resources and their depletion and the maintenance and management of natural resources to assure that nature is not degraded further (Salih, 2003). The environmental pillar focuses on avoiding over-exploitation of renewable natural resources, the depletion of non-renewable resources, ensuring the maintenance of biodiversity, atmospheric stability and other ecosystems (GDEI, 2000). Agenda 21, adopted in 1992 at the Earth Summit, defined environmental goals as: the protection of the atmosphere, improved management of land resources, preventing deforestation and droughts, managing fragile eco-systems, conserving biological biodiversity, protection of oceans, ensuring that there is a supply of quality freshwater, introducing environmentally sound management practices for wastes (UNDESA, 2012b). This list has been expanded over the years, and now includes sustainable consumption and production, developing a green economy, reducing deforestation rates, decreasing ocean acidity, striving for waste minimization, achieving universal access to basic sanitation, safe drinking water and curbing green-house-gas emissions.

There are frequent debates of whether the three pillars can be implemented at the same time, meaning whether sustainable development is at all possible. The literature reviewed mainly focuses on the difficulty to converge the environment and the economic pillars. The convergence of these two pillars means that the environment and the economy need to be decoupled, whereby the impact on the environment is stable or is decreasing while there is economic growth (DEFRA, 2010). The discussion and analysis behind decoupling has been formulated into a number of theories including the Limit's theory, the New Toxics and Davidson theory and the Race to the Bottom theory. The Limit's theory looks at the environment-economic relationship and concludes that the economy starts to shrink when environmental damages reach a certain threshold beyond which production is impacted. The New Toxics and Davidson theory considers

the possibility that environmental damage continues to increase as economies grow, here environmental damage such as emissions of existing pollutants decrease with further economic growth, but are also replaced with new pollutants. The 'Race to the Bottom" theory discusses the relationship between environmental damage and the economy in the context of international competition. International competition leads to increasing environmental damage to the point where developed countries reduce the environmental impact by outsourcing their polluting activities to poorer countries. This is a non-improving situation or a model known as the race to the bottom (DEFRA, 2010). Probably the most commonly referred to hypothesis is the Environmental Kuznets Curve which describes the relationship between the environment and the economy as expressed by Gross Domestic Product (hereinafter: GDP) per capita and environmental degradation. It states that as GDP per capita increases, environmental degradation does as well. This hypothesis is represented through an inverted U-shape relationship between economic output per capita and environmental quality. The Kuznets Curve hypothesizes that at low incomes, there is less probability that individuals will pay the related costs to reduce pollutants as they find this undesirable and prefer to spend their limited income to meet their basic consumption needs. After a certain income level, individuals begin weighing the tradeoff between a better quality environment and their consumption when after a certain point they start preferring better environmental quality. It is at this final stage that environmental quality begins to improve as the economy grows (DEFRA, 2010).

According to DEFRA (2010) relative (where emissions rise at a lower rate compared to GDP) or absolute decoupling (where emissions decrease while GDP increases) occurred in a number of developed countries from 1970 to 1993. A closer look shows that the countries achieved this because they shifted their manufacturing industries to developing countries. As a result, environmental damages were exported from developed to developing countries. There are typically incentives to shift manufacturing to developing countries where there are usually less stringent environmental regulations or incentives to reduce carbon dioxide. Therefore, although decoupling has happened in certain countries, the above implies that an overall change in the level of environmental damage has not occurred. As such decoupling should never be considered from the point of view of individual countries and meaningful decoupling requires taking into account the environmental damages caused globally. DEFRA (2010) concludes that the global relationship between the environment and economic decoupling is a farfetched goal.

There are also thoughts and discussions that go beyond theories and look at the more logical reasons why the convergence of the pillars is an elusive target. Rosenberg (1994) lays the blame with governments, which he believes still have a greater tendency to favor unconditional GDP growth and neglect policies that promote favorable climate, health and workforce development. When politicians have a choice between economic growth and sustainable use of resources and land, they opt to satisfy their immediate concerns of economic development sacrificing their

long-term goals for short-term wins. The main reason behind this choice is because they want to address poverty, where they believe that they need to undertake measures that will more quickly address the material demands of impoverished citizens and thereby maintain political sustainability. Even when commitment is in place the costs may just be too prohibitive to allow for decoupling to happen as significant investments are required for cleaner technologies (DEFRA, 2010). The United Nations (2010) states that those countries and governments that have sustainable development strategies, often face problems when trying to implement them because of their technological, financial and other constraints. Poor institutional capacities also play a significant role in weak convergence often reflected in a country's inefficient environmental policies and their poor capability to analyze the costs and benefits of environmental protection (OECD 2004). Even with political will and financial resources, Bergh and Kallis (2012) lay the blame for lack of convergence on companies. Implementing sustainable measures means restricting the use of energy and resources and implementing costly measures to reduce pollution, increasing the overall costs for companies at the expense of productivity and economic growth. They also concluded that one of the main challenges to sustainable development is in the increasing levels of consumerism which is especially difficult to curb in developing countries.

The United Nations (2014) completed a report in 2014 that looked at whether sustainable development was being implemented. They found that over the period from 1950 to 2013 progress on the sustainable development path has varied. Improvements were made in concentrations of local air pollutants which have decreased but still remain a problem in megacities in developing countries. Primary education has increased in most parts of the world, the literacy rate of 15-24 years old has increased and women dominate tertiary education. People are living longer and life expectancy increased by 22 years since 1950 globally, however a child born in Africa still has 25 years less life expectancy compared to a child born in Europe, and this gap has not changed in more than a century. Unfortunately, the United Nations (hereinafter:UN) concluded that progress overall has shown a worsening trend. There are more poor people despite greater economic growth, poverty has not been eliminated and 850 million people are still hungry which has not changed in the last few decades. Of those that are poor, 260 million are from the least developed countries. Economic growth has tripled since the 1960s in all regions expect for Africa where it stopped in the 1990s. Unabated material consumption has increased pressure on the natural environment and there is evidence that several of Earth's basic life support systems are in jeopardy, affecting the countries trapped in poverty the most. Biodiversity has continued to decrease at drastic rates. There are 740 million people that do not have access to safe drinking water, which is an improvement since 1990 when it was over a billion. Compared to twenty years ago, over 650 million more people do not have access to basic sanitation. Overall water withdrawals exceed 20% of water supply, and in developing countries the greatest concerns remain the quality of available water which is affected because of pollution and salinization.

Global CO_2 emissions have increased and overexploited fish stocks tripled from 10% in 1970 to 30% in 2012. The report highlighted two important facts: progress is far worse in developing countries compared to developed ones, and a growing population has exerted more pressure on the environment. This begs the question of whether sustainable development can progress overall, as progress in one pillar seems to negatively impact another pillar.

Some researchers claim that the reason for poor implementation of sustainable development is because of various contextual and institutional developmental factors that are specific for each region and country. Hamdouch and Zuindeau (2010) believe that implementation is restricted and depends on the historical, socio-economic, political, entrepreneurial and cultural settings in which policies have been designed and implemented. A large contribution to the failure of progress for some developing countries is because they do not have the resources, technology, good quality governance and a positive business environment required to stimulate sustainable development (UNDESA, 2012b). A thorough overview of the implementation of Agenda 21 conducted by the UN concluded that sustainable development has largely been unsuccessful because a definition for sustainable development remains elusive. Countries are not clear as to what needs to be implemented. They also found that sustainable development remains a fundamental environmental issue and there have been little efforts to integrate the environment with the social and economic pillars. Governments continue to be predominantly concerned to increase GDP through the increase of company revenues, and they persist on focusing on trade, investments with the goal of sustaining economic growth rather than implementing sustainable growth. Furthermore, the report found that although under Agenda 21 developed countries were called upon to support developing countries to attain sustainable development, developed countries have not met their commitments (UNDESA, 2012b). The Agenda 21 review also recognized that despite the overall poor performance, there were a few examples of progress being made as the environment has become a more important priority for government and businesses than it was 20 years ago. Environmental legislation is more prevalent, and there is greater investment in green technologies including increases in renewable energy sources.

A key reason for the poor implementation of sustainable development is the lack of an institutional framework as assessed by Swanson and Pinter (2004). Swanson and Pinter completed a study of 19 countries with the objective to provide governments with a compilation of key challenges, approaches, tools, and lessons learned for implementing sustainable development. The countries were analyzed through case studies based on a common analytical framework. Overall they concluded that sustainable development strategies are not implemented well due to their poor integration in government institutions and due to the weak institutional capacity of government. They found that only a few countries have developed a set of indicators which analyzes the trade-offs and inter-linkages between the economic, environmental and social elements of sustainable development, inhibiting their ability to learn and adopt policies

accordingly. They also determined that sustainable development remains in the periphery and is not linked with the national budgeting process. Finance Ministries were not playing a central role in sustainable development strategy and hence there is no money committed to implementing measures. They also concluded that sustainable development needs to be implemented throughout the country in order to be effective, yet most countries were not doing this. The study found that there is poor co-ordination between levels of government specifically sub-national and local governments and these efforts are especially complex in countries with different government administrative jurisdictions. The analysis emphasized that countries need a supportive institutional environment based on defined sustainable development goals, and strategies to implement sustainable development. This next section is an attempt to define an institutional framework under which sustainable development can be implemented.

2 THE INSTITUTIONAL FRAMEWORK FOR SUSTAINABLE DEVELOPMENT

The United Nations has made an attempt to define the institutional framework for sustainable development (UNDESA, 2012a), it includes: strategies and integrated planning, horizontal coordination and participation, access to information and access to justice, production of sustainable development relevant information, rights of future generations and broader societal goals. The areas are discussed in more detail below.

2.1 Sustainable Development Strategies and Integrated Planning

Strategies are needed because they articulate the sustainable development goals and visions that a country wants to attain. A well-developed strategy determines priorities, identifies realistic goals and outlines the way to achieve these goals. According to the OECD (2001), strategies for sustainable developments are "a coordinated set of participatory and continuously improving processes of analysis, debate, capacity-strengthening, planning and investment, which integrates the economic, social and environmental objectives of society seeking tradeoffs where it is not possible" (OECD, 2001, p. 16). At the Rio Conference all governments committed themselves to develop and implement national sustainable development strategies.

So why are strategies needed for the environment and the social pillar? When it comes to the environment, government must put in measures to properly manage environmental resources and to safeguard it as a public good. The environment is a non-rival and non-excludable product and any individual can consume it without reducing its availability to another individual. As everyone can use but no-one owns it, the environment is often over-used and abused. It therefore needs to be protected and a strategy can outline how this can be achieved. The main social strategies are in the areas of education and health. Countries need health strategies to achieve an equitable system

of health care and to determine the best methodologies to address their specific health problems. Education strategies are needed to help a country implement measures so that it has the human capital resources it needs for its economy. A sustainable development strategy should integrate all of these areas including the economy and should link long-term visions with medium and short-term actions. It should make horizontal linkages across the three pillars, and integrate them to allow for easier implementation. A sustainable development strategy also needs to make vertical links, to connect the different layers of local, regional and state government as well as integrating global policies.

To build an effective strategy many different stakeholders need to be involved. The OECD DAC Guidelines (2001) suggest that strategies should be formularized with country ownership through broad consultation that includes the poor, civil society, marginalized groups and even future generations. Dalal-Clayton and Bass (2002), state that strategies must be adaptive and government must be continuously improving them. More importantly, the government needs to shift from a perspective where the state is solely responsible for development towards one where society as a whole is responsible. The OECD (2001) proposes that sustainable development strategies should be built on existing strategies and processes rather than developing new strategies. This will enable better convergence and avoid duplication and straining the country's capacities and resources. Strategies need to be backed up by solid analytical analysis, including a comprehensive assessment of the present situation and forecasts of trends and risks. It needs to include realistic targets and must be tied to the budget. A central coordinating body should be in place, which oversees and coordinates different stakeholders during the implementation of the strategy. Finally, strategies should incorporate indicators which allows for continuous monitoring, learning and improvement.

In the early 1990s, there was more of an emphasis on trying to implement policies through the traditional approach which focused on sectors separately. This resulted in fragmented and conflicting solutions, especially in the case of the environment and the economy. Over the last decade this began to change and now there is more of a push for mutual interdependence (Brown, 2009). What is integration? Lafferty (2004) defined integration as achieving more inter-linkages across all three pillars as well as across sectors, territories and generations. For this to happen there needs to be linkages between national, regional and global priorities, between short-term, medium and long-term goals and between different sectors. Brown (2009) concluded that for integration to happen an understanding of the linkages between social and ecological systems is needed to understand how integration can occur. He further stated that integration should be woven into the legal framework as well as the organization of government.

In reality, trying to achieve integration is probably daunting and complex in established governmental systems. Whereas previously a Ministry could design and implement programs on

their own, where they could control everything, integration means sharing and coordinating. They need to be flexible and must learn to compromise. It may even mean deferring some of their responsibilities to other Ministries or Agencies. It also involves sharing information and data to allow for improved implementation of strategies. Although an integrative process can mean a more effective strategy, it can also be a time consuming process and be drawn out.

2.2 Access to Sustainable Development, Rights of Future Generations and Broader Societal Goals

A wide range of groups, including marginalized groups, women, youth, minority groups, all levels of government, non-for-profit organizations, trade unions and workers, the private sector, academia and rural inhabitants need to participate in sustainable development. To make this happen, an important element is **access to information** which motivates more people to participate in the sustainable development strategy process. The more people participate the more government is able to respond to public demands and concerns. **Access to justice** allows the public to enforce their rights to participate and to hold regulators accountable. According to the UN, a key factor in a country's failure to meet sustainable goals is their inability to establish a legal framework in accordance with human rights standards. A country must also have capable, democratic, and accountable institutions, including an independent justice system, that effectively enforces rules and procedures and ensures the appropriate delivery of social services (United Nations, n/a).

The **rights of future generations** were first recognized in 1972 during the United Nations Stockholm Conference on Human Environment where it was determined that the environment had to be protected for both present and future generations. Global environmental changes are inherently long-term and to achieve equity, we need to address issues that span over more generations (Weiss, 1992). There are several approaches that define intergenerational equity among them the preservationist model. This model is based on the present generation not depleting, destroying or significantly altering anything but rather saving resources for future generations through preservation. The opulence model is where the present generation consumes all that it wants today and generates wealth as much as it can. It does this under the presumption that there is no certainty that future generations will exist, or because maximizing consumption today is the best way to maximize wealth for future generations. The technology model also has no concern about future generations as this model states that technology innovation will enable people to introduce infinite resource substitution. Critics of this model believe that although technology can help develop substitutes for some resources and to use resources more efficiently, it will not be sufficient. The environmental economics model argues that proper accounting of natural resources is required, which will provide us with information on how much is being used

and thereby knowing how much to leave for future generations (Weiss, 1992). These rights can be assured through policy or even incorporated into constitutions (World Future Council, n/a).

Broader societal goals focus on experience sharing and support among national and local institutions. Many countries face similar problems when developing and implementing strategies and some of them have overcome these challenges. The UN (UNDESA, 2012) thought it would be useful to share all of these experiences and lessons learned. Similarly, the European Commission developed a proposal for member states to share their sustainable development strategies and to open them up to peer review. According to United Nations Department for Economic and Social Affairs (hereinafter: UNDESA), broader societal goals do not translate into an institution but are reflected through the development and implementation of standards and norms, including the International Standard Organization (hereinafter: ISO) standards. However, it can also mean including sustainable development principles in national constitutions and laws. The ISO standard is a mechanism that allows for the sharing of best practices. Standards are developed to address different areas of concern and include ISO 26000 to promote corporate social responsibility, ISO 14000 for environmental management and the general quality management ISO 9000 standards (UNDESA, 2012a).

2.3 Sustainable Development Indicators

Indicators are essential as they serve as the basis for evaluating progress on the status and trends of sustainable development. The core purpose of indicators is to provide information to governments and stakeholders which enables them to adjust policies and strategies. Sustainable development indicators are easier to interpret than complex statistics and therefore provide an easier means of communication between different groups, like between experts and non-experts. The Rio Earth Summit 1992 first raised the important role indicators play to help countries make informed decisions concerning sustainable development. Agenda 21, specifically Chapter 40, called on countries, international and non-governmental organizations to develop SD indicators that "need to be developed to provide solid bases for decision-making at all levels" (UNCED, 1992, Chapter 40). The Commission on Sustainable Development (hereinafter: CSD) in response to Agenda 21 approved a Programme of Work on Indicators of Sustainable Development and called upon the organizations of the UN system, and other stakeholders to coordinate with its Secretariat to implement the program. The purpose of CSD work programme was to harmonize the indicators which could be used at the national level and then could be comparable as they would feed into reporting mechanisms at the global level (UN, 2007). The challenges in developing indicators largely lies in there still being no common interpretation of sustainability, no consensus on the specific components that make up indicators and therefore no agreement on what needs to be measured. Typically, national indicators are developed to reflect a country's definition of what sustainable development is to them. Therefore, some national indicators reflect

the progress in different countries, others reflect their culture's acceptance of industrial technologies in their eco-systems, and others include incorporating international treaties on cultural rights of indigenous peoples (Sherbinin, 2013). While sustainability indicators have become more widely used in public and private sectors, their ability to influence actual policy and practices often remains limited (Pinter, Hardi & Bartelmus, 2005).

At a global level, there have been attempts to create aggregate measures of various aspects of sustainability which has resulted in a number of indices. Some of the most prominent globally-accepted indices include the Human Development Index (hereinafter: HDI) of the United Nations Development Programme (hereinafter: UNDP); the ecological footprint of Global Footprint Network and its partner organizations; the Environmental Performance Index (hereinafter: EPI) reported under the World Economic Forum; and the Genuine Progress Index. The United Nations Millennium Development Goals (hereinafter: MDG) adopted by United Nation countries includes eight developmental goals which are eradication of poverty and hunger, achieving universal primary education, gender equality, reducing child mortality, improving maternal health, combating diseases HIV/Aids and malaria, ensuring environmental sustainability and developing a global partnership for development. However, none of these is a fully comprehensive sustainable development index. The HDI deals mainly with the social pillar, the EPI deals with the environment and MDG partially touches on the social and environment pillars, but does not refer to the economic pillar. There is still no singly globally accepted group of sustainable development indicators. To achieve this would require a great deal of global level coordination, political will and agreement on the same goals and how to measure the achievement of those goals. The question is whether it is politically feasible to attain a common framework. Given that there is no agreed upon sustainable development indices, a number of prominent international organizations have developed indicators, which will be used in this thesis to identify potential indicators for B&H. The list is derived from two leading international organizations – the United Nations and OECD, and the third from the European Union (hereinafter: EU). The latter is relevant to B&H given its aspirations to one day be a member state.

2.3.1 Sustainable Development in the EU and Monitoring Framework

Eurostat took its first steps to measure sustainable development in the 1990s and the first EU-orientated sustainable development indicators were adopted in 2001. The sustainable development data is aggregated for EU-28 countries. Most data comes from the standard Eurostat collection of statistics, but it is also collected from other EU agencies, the OECD and the World Bank. It is a relative assessment and not an absolute assessment that measures EU's progress and relative direction on the path to sustainability. There are more than 100 indicators collected by the EU and 10 have been identified as headline indicators. They give an overall picture of whether the EU has achieved progress towards achieving the objectives and targets defined in the

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EU Sustainable Development Strategy. Eurostat publishes a monitoring report every two years to show progress made in the indicators. The main heading indicators are shown in Table 1.

Table 1. Main Headline Indicators for Eurostat Sustainable Development indicators

Theme	Headline indicator
Socioeconomic development	Growth of real GDP per capita
Sustainable consumption and production	Resources productivity
Social Inclusion	People at risk of poverty or social exclusion
Demographic changes	Employment rate of older workers
Public Health	Healthy life years and life expectancy at birth, by sex
Climate change and energy	Greenhouse gas emissions
	Share of renewable energy in gross final energy consumption
	Primary energy consumption
Sustainable transport	Energy consumption of transport relative to GDP
Natural resources	Common bird index
Global partnership	Official development assistance as share of gross national income
Good governance	No headline indicator

Source: *Eurostat Sustainable Development Headline Indicators, 2014*.

2.3.2 OECD's Indicators to Measure Progress Towards Sustainable Development

The OECD has focused on statistically monitoring sustainable development through the development of several sets of indicators responding to specific policy questions. Indicators are proposed that cover both the 'outcomes' of the development process and inputs, meaning the 'resources' that support it. Resource indicators describe the accumulation and depletion of produced, natural and social capital. These indicators provide information on how current patterns and activities are impacting on future opportunities. Outcome indicators show the direction and quality of the development that is being achieved. Below is an overview of the current headline indicators, which according to the OECD is not necessarily a final list.

Table 2. OECD Core Set of Sustainable Development Indicators

Theme	Headline Indicator
Environmental and resource productivity	
Carbon productivity	CO_2 productivity (measured as emissions per unit of output)
Resource productivity	Non-energy material productivity
Multifactor productivity	Multifactor productivity including environmental services
The natural asset base	
Renewable and non-renewable stocks	Natural resource index
Biodiversity and ecosystems	Changes in land use and cover
Environmental quality of life	
Environmental health and risks	Air pollution
Economic opportunities and policy responses	
Technology and innovation, environmental goods and services, process and transfers	No specific indicator

Source: *OECD Green Growth Indicators,2014.*

2.3.3 The UN Recommended Indicators to Measure Sustainable Development

The United Nations first drafted sustainable development indicators through their Division for Sustainable Development, which was jointly completed with their Statistics Division, both within the United Nation's Department of Economic and Social Affairs. The draft indicators were shared with a number of organizations within the United Nation system and other international organizations to build consensus on a group of indicators. From this process 134 indicators were identified which were later revised and now contain a core set of 50 indicators. The core indicators are part of a larger set of 96 indicators. The core set allows for manageability, whereas a larger set allows nations to include additional indicators that are more comprehensive and country specific. The indicators are shown in Table 3.

Table 3. UN Sustainable Development Indicators

Theme	Core (Headline) indicator
Poverty	Proportion of population living below national poverty line
	Ratio of share in national income of highest to lowest quintile
	Proportion of population using an improved sanitation facility
	Proportion of population using an improved water source
	Share of households without electricity or other modern services
	Proportion of urban population living in slums
Governance	Percentage of population having paid bribes
	Number of intentional homicides per 100,000 population
Health	Under-five mortality rate
	Life expectancy at birth
	Percent of population with access to primary health care facilities
	Immunization against infectious childhood diseases
	Nutritional status of children
	Morbidity of major diseases such as HIV/AIDS, malaria, tuberculosis
Education	Gross intake ratio to last grade of primary education
	Net enrolment rate in primary education
	Adult secondary (tertiary) schooling attainment level
	Adult literacy rate
Demographics	Population growth rate
	Dependency ratio
Natural Hazards	Percentage of population living in hazard prone areas
Atmosphere	Carbon dioxide emissions
	Consumption of ozone depleting substances
	Ambient concentration of air pollutant in urban areas
	Arable and permanent cropland area
	Proportion of land area covered by forests
Oceans, seas and coasts	Percentage of total population living in coastal areas
	Proportion of fish stocks within safe biological limits
	Proportion of marine area protected

Theme	Core (Headline) indicator
Freshwater	Proportion of total water resources used
	Water use intensity by economic activity
	Presence of fecal coliforms in freshwater
	Change in threat status of species
Economic development	Gross domestic product (GDP) per capita
	Investment share in GDP
	Debt to GNI ratio
	Employment population ratio
	Labor productivity and unit labor costs
	Share of women in wage employment in the non-agricultural sector
	Internet users per 100 population
	Tourism contribution to GDP
Global economic partnership	Current account deficit as percentage of GDP
	Net Official Development Assistance given or received as percentage of GNI
Consumption and production patterns	Material intensity of the economy
	Annual energy consumption, total and by main user category
	Intensity of energy use, total and by economic activity
	Generation of hazardous waste
	Waste treatment and disposal
	Modal split of passenger transportation

Source: United Nations Indicators of Sustainable Development Guidelines and Methodologies, 2007.

2.3.4 Joint UNECE/EUROSTAT/OECD Indicators

The UNECE jointly with the European Commission and OECD developed a conceptual framework to harmonize the way sustainable development is measured. The framework links the sustainable development indicator sets produced by international and national statistical agencies. The framework distinguishes between three conceptual dimensions of human well-being those being: human well-being of the present generation in a particular country, the well-being of future generations and the well-being of people living in other countries. It builds on the definition of sustainable development in the Bruntland report and takes into consideration a world that is increasingly more globalized where relationships between countries are becoming more important. The framework reflects the trans-boundary impacts of sustainable development,

by looking at how a country in the pursuit of the wellbeing of its citizens may have a positive or negative effect on the wellbeing of citizens of other countries. The indicators also take into account the inter and intra-generational aspects of human well-being, including the distribution of this well-being. There are twenty themes as shown in the table below. To allow for easier interpretation by policy makers a smaller set of indicators was developed.

Table 4. UNECE/EUROSTAT/OECD Sustainable Development Indicators

Theme	Headline Indicator
Substantive well-being	Life satisfaction
Consumption and income	Financial consumption expenditure
	Official Development Assistance (ODA)
	Imports from developing countries
	Income inequality
	Gender pay gap
Nutrition	Obesity prevalence
Health	Life expectancy at birth
Labor	Employment rate
Education	Educational attainment
Housing	Living without housing deprivation
Leisure	Leisure time
Physical safety	Death by assault/homicide rate
Land and ecosystems	Bird index
Water	Water abstractions
Air quality	Urban exposure to particulate matter
Climate	GHG-emissions
Energy resources	Energy consumption
Non-energy resources	Domestic material consumption
Trust	Generalized trust
Institutions	Voter turnout
Physical capital	Gross capital formation
Knowledge capital	R&D Expenditures
Financial capital	Consolidated government debt

Source: UNECE/Eurostat/OECD Framework and suggested indicators to measure sustainable development, 2013.

All the set of indicators have common themes, covering all three pillars and include: the GDP and poverty, health, education and environment. The OECD are the most limited indicator set and focus mainly on the environment. Under all of the indicator sets the environment is broken down further to include air, water, atmosphere, and climate. All four indicator sets also measure natural resources, some indicator sets also measure for financial, physical and knowledge capital. A

governance indicator is incorporated into three indicator sets emphasizing the importance of good management for implementing sustainable development. All of the indicator frameworks are developed to allow for countries to choose from the indicators according to what is relevant to their own sustainable development goals.

B&H has not defined its sustainable development goals and without them progress on the sustainable development path cannot be measured. However, as noted above strategies and institutional capability are crucial for implementation of sustainable development. B&H does have strategies and institutions in place that are dealing with aspects of sustainable development. An assessment of these institutions and governance aspects can provide insight as to the readiness of B&H to address sustainable development implementation. Chapter 4 will analyze key strategic documents to evaluate if sustainable development elements are integrated into public policy and thereby assess B&H's governance and policy structure for sustainable development. Furthermore, this Chapter includes an analysis of the current institutional capacity for sustainable development by assessing the capability of institutions that are responsible for elements of sustainable development.

3   THE STATE OF SUSTAINABLE DEVELOPMENT IN B&H

3.1   B&H Government Structure and Socio-Economic Overview

Bosnia and Herzegovina is made up of a State level government which is comprised of two Entities and a self-governing district. The largest Entity, the Federation of Bosnia and Herzegovina, covers about 51% of the territory and Republic of Srpska (hereinafter: RS) covers about 49 %. There is a central state level government, which is generally considered weak, as each Entity has their own political structure and administration. The administrative/political structure of the Federation is divided into three levels: Entity, Cantons, and municipalities. The RS has no cantons, only municipalities. The General Framework Agreement for Peace, more commonly known as the Dayton Peace Agreement, signed in 1995 established the country's constitution, as outlined in Annex IV of the Agreement. The Annex has only 12 articles and gives the State limited jurisdiction in the areas of: customs, foreign and monetary policies, foreign trade and a common defense structure. It also states that all functions and powers not expressly assigned in the Constitution to the State will be under the responsibility of the Entities. The Entities have wide jurisdiction including over social and economic matters. The Federation structure is highly decentralized and is not always clear, and there is a duplication of Ministries. For example, there are 10 Cantonal Ministries of Education as well as the Federal Ministry, and the same structure is mirrored for the health sector with 11 Ministries and Health Institutions (World Bank, 2012).

B&H's economy had been growing at an average rate of 4-5% per annum over the period 2000-2008 but this decreased drastically in 2009. The country's economy is closely tied to the EU and therefore the recessions of 2009 and 2012 resounded in B&H. The country's per capita income, measured in purchasing power standards is at 28% of the EU-27 average in 2012. The persistently stubborn high unemployment rate has not significantly changed for many years and is currently 28.6% estimated by the B&H Statistical Agency according to the International Labor Organization methodology (Agency for Statistics, 2013). More discerning is the high unemployment rate among the youth population which is around 63.1% for people aged between 15 and 24. Despite efforts of donor communities and even government to move towards market economies, the private sector share of the GDP is still around 60% and the country has a large share of public administration (European Commission, 2013). The economy is largely made up of services which make up 71.2% of the total economy, industry's share is 20.1% and agriculture makes up 7.7%. The main sectors of the economy are metal, energy, wood, textile/apparel and agriculture.

A large proportion of B&H's population still lives in poverty and was estimated to be 18.2% in 2007 (Agency for Statistics, 2007). The World Bank (2014) reported that progress to reduce poverty may have stalled recently because of the economic recession which resulted in higher unemployment, a lower number of people receiving remittances (a reported reduction by 50% of the population reporting that they have received reduced remittances), and almost 40% of the population receiving lower wages. Poverty is more prevalent in rural areas (World Bank, 2009) with 77% of the poor living in these areas and 23% in urban areas in 2007. The poverty incidence differs according to the educational level of the household head. Seventy percent of heads of poor households have only a primary education or no degree. At any educational level, male household heads have a higher risk of poverty than female household heads according to a study conducted by the Japanese International Cooperation Agency (hereinafter: JICA). The five most vulnerable groups for poverty are the elderly, young people aged between 15 to 25 years with no education, disabled, displaced persons and Roma. The young are at high risk of joining the long-term inherited poverty cycle. People with disabilities have a greater risk of becoming poor and face social exclusion in areas like education, limited access to medical and health services, limited access to employment and social depression. Displaced persons and Roma also face social exclusion on the grounds of racial discrimination which limits their access to education, health services and income opportunities (JICA, 2010).

As a potential candidate country, B&H is assessed every year by the European Commission to determine how far it has progressed in implementing the EU accession requirements. The requirements cover a wide range of areas that directly or indirectly affect sustainable development. The main headings are political criteria which include human rights and protection of minorities, regional issues and international obligations, and the rule of law. The economic

criteria assess B&H's progress towards establishing a functioning market economy and the capacity to cope with competitive pressures. The European standards look at the free movement of goods, persons, services, capital, competition, WTO (hereinafter: World Trade Organisation) and other issues. This section also covers areas relevant to sustainable development those being: employment and social policies, public health policy, education and research. Environment and climate change are covered under the sectoral policies' section as well as statistics, transport policy, agriculture and fisheries. Finally, progress on justice, freedom and security are also assessed (European Commission, 2014).

3.2 The State of Social Development

The 2014 B&H Progress Report notes that both Entities and the Brcko District have adopted employment strategies, however, the overall conclusion is that social policy is ineffective. Welfare payments are still determined based on status and not on need which has resulted in inequalities in the provision of rights. There is still inefficient protection of minority and marginalized groups at all levels of government. Regarding health, a reporting system on National Health Accounts was completed which provides information on health expenditures. The system for early detection of children with developmental delays is still inadequate and overall there are low levels of immunization especially with Roma children. In education, the European Commission reported that three Cantons have yet to align their legislation on pre-school education with the Federation framework law, and four Cantons still need to adopt laws to allow for vocational training.

As noted earlier, B&H does not have sustainable development goals or indicators to measure how well the country is progressing on the sustainable development path. Without these, an alternative solution was used to assess B&H's current status regarding the sustainable development elements. Global indices regarding social and environmental aspects can provide a snapshot of where the country stands in these sustainable development elements. In Chapter 2, three global sustainable development indices were reviewed, none of which include B&H. The country is not an OECD country or an EU member state. Furthermore, although B&H is a member of the UN, there have been no sustainable development reports submitted by B&H to the UN's Sustainable Development Division. Without these other globally accepted indices were applied, that have a narrower focus than sustainable development. The Human Development Index measures all of the social elements of sustainable development, including health and education, therefore this was used to identify B&H's current status for social development elements. Similarly, the Environmental Performance Index, a widely accepted index to measure the environment, was applied to obtain an understanding on the status of the environment in B&H. The first part of this Chapter is a review of B&H's standing on the two indices. This is then followed with a review of the literature to identify the underlying causes for B&H's rankings on the indices.

The Human Development Index is published by the United Nations Development Programme and is a composite statistic of life expectancy, education, and income indices. It ranks 172 countries according to their progress in these areas and compares them. The 2013 report was interesting because it focused on the role of government and its institutions to support sustainable growth. The report noted that across all of these countries, one of the key prominent drivers of success was a proactive, strong developmental state with usually a government that is apolitical and that sees economic development as their primary aim. The report concluded that it is important to have a bureaucracy that has the power and authority to plan and implement policies, since "most of the opportunities for sustaining and even accelerating the momentum in human development lie in the hands of national governments" (UNDP, 2013a, p. 103). The HDI 2013 report emphasizes the importance of institutions for sustainable development.

For the purposes of this analysis and to evaluate B&H's progress in the social pillar, B&H's HDI results over the last four years were compared as summarized in the main headline tables below. The main headlines are: the HDI value (Table 5), life expectancy, mean years of schooling, expected years of schooling (Table 6) and Gross National Income (hereinafter: GNI) per capita (Table 7). B&H's **HDI value** has improved over the last four years, although slightly, the highest improvement being in 2011. B&H's results in **life expectancy** have varied, improving slightly in 2011 and dropping in 2012. It rebounded in 2013 and increased by six months, the largest increase compared to regional countries. The **mean years of schooling** remains amongst the lowest in the region, second only to Macedonia. The number of mean years of schooling dropped in 2012 where it remained in 2013. A similar trend occurred in all of the other countries, expect for Croatia where it improved significantly. **Expected years of schooling** improved in B&H in 2011 moving from 13 years to 13.6 years, again dropping in 2012 and returning to 13.6 years in 2013.

In conclusion, 2012 saw a setback for B&H's progress on social development which coincided with a period of economic decline. Although the GNI/per capita and life expectancy indicators increased in 2013, B&H needs to accelerate efforts across all fields to make a noteworthy improvement in its HDI value. In particular, B&H needs to address its low mean and expected years of schooling.

Table 5. HDI values B&H and Regional Countries: 2010-2013

HDI value	2010	2011	2012	2013
Bosnia and Herzegovina	0.726	0.729	0.729	0.731
Croatia	0.806	0.812	0.812	0.812
Macedonia	0.728	0.730	0.730	0.732
Montenegro	0.784	0.787	0.787	0.791
Serbia	0.743	0.744	0.743	0.745

Source*: United Nations Human Development Report 2010: United Nations Human Development Report 2011: United Nations Human Development Report 2013: United Nations Human Development Report 2014:*

The **GNI per capita** fell in 2011 in B&H and only really recovered in 2013 where it is now 13% higher than 2010 levels. All of the regional countries experienced a similar trend.

Table 6. GNI per capita for B&H and Regional Countries: 2010-2013

GNI per capita	2010	2011	2012	2013
Bosnia and Herzegovina	8,222	7,664	7,713	9,431
Croatia	16,389	15,729	15,419	19,025
Macedonia	9,487	8,804	9,377	11,745
Montenegro	12,491	10,361	10,471	14,710
Serbia	10,449	10,236	9,533	11,301

Source*: United Nations Human Development Report 2010: United Nations Human Development Report 2011: United Nations Human Development Report 2012: United Nations Human Development Report 2013: United Nations Human Development Report 2014:*

When it comes to education, 56.8% of the population in B&H has at least some secondary education and only 38% of the population has a tertiary degree. B&H has the lowest percentage of the tertiary educated population in the region as Croatia, Montenegro and Serbia all have over 50% of their population with tertiary degrees. The most alarming indicator is the number of primary school dropouts in B&H which is at 16.7%, and is second only to Montenegro at 19.5%. Croatia, Serbia and Macedonia dropout rates are less than 2.5% (UNDP, 2014).

Table 7. Life Expectancy at Birth, Mean Years of Schooling, Expected Years of Schooling for B&H and Regional Countries: 2010-2013

Life Expectancy at Birth	2010	2011	2012	2013
Bosnia and Herzegovina	75.5	75.7	75.8	76.4
Croatia	76.7	76.6	76.8	77.0
Macedonia	74.5	74.8	75.0	75.2
Montenegro	74.6	74.6	74.8	74.8
Serbia	74.4	74.5	74.7	74.1
Mean years of schooling				
Bosnia and Herzegovina	8.7	8.7	8.3	8.3
Croatia	9.0	9.8	9.8	11.0
Macedonia	8.2	8.2	8.2	8.2
Montenegro	10.6	10.6	10.5	10.5
Serbia	9.5	10.2	10.2	9.5
Expected years of schooling				
Bosnia and Herzegovina	13.0	13.6	13.4	13.6
Croatia	13.8	13.9	14.1	14.5
Macedonia	12.3	13.3	13.4	13.3
Montenegro	14.4	13.7	15.0	15.2
Serbia	13.5	13.7	13.6	13.6

Source*: United Nations Human Development Report 2010: United Nations Human Development Report 2011: United Nations Human Development Report 2012: United Nations Human Development Report 2014:*

A closer look at some of the other HDI indicators shows that 65,000 people are living in multi-dimensional poverty in B&H. The dominating contribution to overall poverty is health which contributes by 79.5%. B&H has a low number of physicians compared to regional countries with 16.9 physicians per 10,000 people. This is considerably lower compared to regional countries: Croatia has 27.2, Serbia 21.1 and Macedonia 26.2 doctors for every 10,000 people. Yet, health care expenditures are higher in B&H at 10.2% of GDP, compared to Croatia at 7.8% and Macedonia 6.6% (UNDP, 2014), which then raise the question of where is money being spent.

3.2.1 Reasons for Poor Health Results in B&H

The WHO reported that 50% of deaths in B&H are attributable to heart disease and about 20% to cancer (WHO, 2009). The WHO attributes this epidemiological profile to unhealthy lifestyles, an ageing population, poor diet and excessive alcohol and drug abuse. They also lay blame on the highly fragmented nature of the B&H health care system, especially in the Federation of B&H. In this Entity, health falls under the responsibility of the 10 cantons. There are 10 Cantonal Ministries of Health, a Federal Solidarity Health Insurance Fund, 10 Cantonal health insurance

funds and 121 institutes of public health (WHO, 2009). The health care infrastructure is also poor as much of it was damaged during the war from which it has not recovered. Government statistics show that about 30% of health facilities were heavily damaged or destroyed during the war. Of the 80 emergency clinics that existed before 1992, only 46 were left after the war. B&H lost around 30% of their practicing health professionals because of migration or war casualties. There is an estimated 25,000 people with permanent disabilities although this figure tends to vary widely depending on the source (European Observatory on Health Care Systems, 2002). The ratio of nurses and midwives is low at 51.7 per 10,000 people compared to 82.1 for the regional average (World Bank, 2007).

There is a geographical imbalance in citizens' access to health care as the provision of services in the health sector is inefficient. Public health care facilities are unevenly distributed with more facilities located in urban areas (Slipicevic and Malicbegovic 2011). Health insurance benefits are not portable across administrative jurisdictions and this too has contributed to inequality in access to health care. As the responsibility for health is divided between Cantons, a person entitled to health care can only access health facilities in their own Canton. Many Cantons have limited provision of care as only a few have major clinics and staff that can treat cardiovascular and cancer patients. Patients coming from Cantons which do not have major clinics or have clinics that are ill equipped, have to travel often to Sarajevo. This can be costly in terms of accommodation and travel costs (WHO, 2009). Other problems include: an inappropriate balance of facilities and care between primary, secondary and tertiary levels of health care and a high prevalence of narrowly specialized doctors. Furthermore, private providers are concentrated in urban areas and wealthier Cantons making overall access limited to the poor and those in rural areas. Finally, the quality of care is often perceived as poor, and patients often complain about the poor patient-health care relationship with health care workers being considered as unresponsive. The inefficiencies of the system is reflected in the health budget where wages account for a large proportion of health expenditures – 40% in Federation and 48% in Republika Srpska (hereinafter:RS), and much of this is for non-medical staff (World Bank, 2012). This then explains the high expenditure for health as compared to GDP and as noted in the HDI reports. Budgets are determined based on inputs (staff) and not outputs. Furthermore, with the excessive numbers of non-medical staff, the methodology of financing does not address the health needs of the population (World Bank, 2007).

A significant element of the failure of the system is the financing side which has led many people from being excluded from having access to health. A large proportion of the population remains uncovered by health insurance ranging from 17 to 35% of the population in some parts of the country (World Bank, 2007). Many people do not pay health contributions, either because they chose not to or because the cost of health care is high for them, including the out-of-pocket expenditures or unofficial payments that are often paid. This has an impact on the poor as it has

become so common that the poor are also expected to pay but often cannot afford it (World Bank, 2007). The World Bank also confirms that health expenditures are impoverishing a large number of households in B&H and can deprive households to the point where they fall under the poverty line. For example, the poverty rate in the Republic of Srpska increases by 3.5% when it includes households impoverished by health expenditures and in the Federation it rises by 2%.(World Bank, 2008). Apart from costs for doctor care, a significant proportion of household payments are related to drugs which account for 30% of household costs. Like other parts of the health care system, the pharmaceutical sector is also fragmented and each Canton has their own health institute, with their own procurement rules, procedures and drug lists. In 2009, 83% of drugs were imported through at least 40 wholesalers (World Bank, 2012). The decentralized procurement procedures result in higher prices and large differences in procurement processes among the cantons and Entities, reduced transparency and increased risks for corruption. Since 2006 the RS has centralized the procurement of 90% of medicines, medical supplies and remedial products. The Federation has centralized the procurement by hospitals - this has reduced the price of medicine and has increased the availability of drugs. The World Bank recommends greater centralization in the Federation to reduce costs even further (World Bank, 2012).

3.2.2 Reasons for Poor Education Status in B&H

There is lack of reliable data regarding education in B&H, however according to the European Training Foundation the net enrolment rate in primary school is between 97.2% and 98.9%. Participation rates in secondary education were estimated to be from 56.8% - 76.2%, which is low compared with the EU or other countries in the region (European Training Foundation, 2009). Of those that are in secondary school, only around half the students graduate on time. The rural urban disparities are wide. Only 2.4% of children in rural areas attend preschool, compared to 14.3% in urban areas and attendance by rural children in high schools is 10% lower than their urban peers. This is even greater when broken down by region and ethnicity. In addition, wealthier districts provide much higher quality education than poorer districts perpetuating a cycle of poverty with the rural population remaining poorly educated and thereby decreasing their chances of improving their income (UNICEF, 2010). This has an impact on unemployment as reflected in the current structure of the unemployed. Over 58% of unemployed have basic or primary education and 36.8% of unemployed have a high school diploma (Agency for Statistics of Bosnia and Herzegovina, 2013). Those who have a low skills level tend to be long-term unemployed.

A great majority of those who do not have any education are marginalized groups and are typically Roma, children from poor families, children of parents with low current education level and children with special needs. For Roma children, the United Nations International Children's Emergency Fund (hereinafter: UNICEF) reports that their participation is low because of lack of

parental support. Often their parents do not believe that their children should receive an education. They are also included at young ages in various activities to contribute to the family budget, usually live far from schools, and tend to get married early. For children from families in need, these families often live in rural areas and often cannot afford the transport costs to school. Also these children often stay at home to help their parents around the house (UNICEF, 2010). The problems for low income families are that education, even at the primary level, is not actually free although formally it is. There are costs associated with the provision of textbooks, notebooks and stationery as well as meals and school transportation (UNDP, 2013b). According to some estimates, one year of secondary school education requires between 2000 and 3000BAM (UNICEF, 2010). Students with disabilities often have minimal conditions to help them succeed. Although the law stipulates that regular schools have disability access and must provide children with individual education programming, in reality this is rarely the case (UNICEF, 2010).

Much like with health, the education sector is overseen by 13 different educational ministries. This makes it difficult to set, maintain and enforce quality standards, to collect information about the quality of schools and to collect data on in-school processes, outputs or outcomes. Children are generally ill-prepared for school when they arrive. This is partially because of the low enrolment rate in preschool but also due to the dearth of learning materials in the home, where 70% of children have three or more children's books in their home. Government spends 80% of its education budget in sustaining the highly complex administrative system and little is left to spend on learning materials. As a result, schools do not have sufficient numbers of textbooks or have poor quality textbooks. Many students are also disillusioned from attending schools that do not prepare them for the workforce and companies complain that the education system is not producing youth with the skills required for the labor market (UNICEF, 2010). The poor attendance in school occurs because of outdated curricula and methods of knowledge transfers but also lack of technical equipment such as computers. The quality of the teaching staff has declined and although classes are small (the average class for 8th grade math was 24, while the international average is 29), mathematics teachers are less qualified than in other countries. According to the World Bank 91% of students are being taught by teachers who have completed non-university post-secondary education (World Bank, 2012).

Overall spending on education in B&H is not excessive compared with other countries. Despite this, students in B&H have performed poorly in international assessments mainly because of the quality of education and ineffective spending. B&H spends 4.3% of GDP on education and education expenditure as a percentage of total public expenditure in B&H is high at around 18%. This is higher than in many other countries in the region although still below the EU average. The problem lies in the types of expenditures as 80% of expenditures are for salaries (World Bank, 2012). The decentralized educational system in the Federation has resulted in inequitable and inefficient spending on education as funds are spent on financing administrative staff in 11

ministries of education. Furthermore, teaching staffing levels have not adjusted as well as the corresponding expenditures, despite there being sharp declines in the school-age population.

3.2.3 Reasons for Poverty in B&H

Income growth does not automatically mean improvements in other aspects of human development. Yet growth is commonly more effective in reducing poverty in countries where income inequality is low than where it is high. Increased inequality can lead to social instability which can undermine long-term human development progress. By allowing poor people to participate in growth, through better education, health care and social protection, social organizations and legal empowerment - there are better prospects for long-term economic growth (UNDP, 2013a). Most fast developing South countries opened up to foreign trade, investment and technologies, but this did not guarantee success as they had to invest in strengthening their own institutions and building comparative advantage. Active government involvement was crucial to accelerate economic progress and minimize social conflict. The growth allowed increased budgetary support for health and education and social economic programs, like those implemented in Brazil, Mexico and India, which led to more equitable distribution of economic opportunities (UNDP, 2013a).

The issue of poverty in B&H is multi-dimensional and it occurs for economic reasons as well as because of poor government policies. B&H economic performance is directly correlated with poverty and a persistently high unemployment rate keeps people impoverished. Public policy can be designed to mitigate the problems associated with poverty and the failure of public policy is an important cause for increased poverty. In B&H, the large government apparatus is contributing to poverty as financial resources are spent on duplicative administrations and fewer resources remain available for the social security system (JICA 2010). There is a social welfare system, but it is not directed to the most vulnerable and is mainly paid out to veterans some of whom have sufficient assets, alternative resources of income and are not impoverished.

There are higher incidences of poverty in rural areas where the incident of poverty at the absolute poverty line was 22% compared to 11% in urban areas in 2004, and this dropped to 18% in rural areas in 2007 compared to 8% in urban areas (Marinkovic, n/a). The most vulnerable to poverty are women living in rural areas that have no education and returnees/displaced persons, especially those living in collective centers (Marinkovic, n/a). Minority groups are also amongst the poor mainly Roma. Single-earning families make up 39% of the poor, as Marinkovic (n/a) points out the average estimated gross salary is around €450 yet the cost of living is €750 per family. People in rural areas tend to have a combination of low educational skills which propagates their level of poverty; they also lack adequate health insurance and medical care and access to schools. In conclusion, B&H poverty is predominately a problem in rural areas where

there is higher unemployment and there are more instances of lower educated people. This combination means that these people have less chance of obtaining employment and breaking out of poverty. The cycle of poverty is further perpetuated as their children have poor access to schools and reduced ability to further their education.

3.3 The State of the Environment in B&H

The 2014 EU Progress report for B&H reported that in the area of environment little progress has been made in developing and adopting horizontal legislation in B&H (European Commission, 2014). Efforts have been made to prepare an Environmental Impact Assessment Directive. Yet there is still no state framework law on the environment which would lead to better coordination. There were some laws and regulatory documents adopted for air quality, however air quality planning and monitoring systems remained inadequate and a country-wide monitoring network has not been established. The Federation adopted a waste management plan, but there is poor coordination between the Entities and Brcko District on waste management systems. The Federation made progress on adopting regulatory documents for water management and wastewater discharges. Although B&H aligned its legislation with the EU Directives in certain areas in water the EU Commission's report determined that this was slow. The Laws on Chemicals have been adopted and additional efforts are needed to reduce industrial pollution and noise. The EU concluded that the administrative capacity in the environment sector remains weak as a State-level Environmental Protection Agency with country-wide monitoring and reporting on the state-levels remains to be established. Integration of environmental elements is poor and the overall effectiveness of environmental protection is weak because of fragmented vertical and horizontal competencies. There is little involvement of the general public in the decision making process and they have little access to information. There is no country-level action plan for renewable energy which can provide a roadmap to achieve targets for the share of renewable energy in total energy by 2020. Little progress has been made in the area of energy efficiency. Overall coordination and harmonization, both horizontally and vertically are problematic in the areas of nature protection, industrial pollution control and climate change.

To obtain an overview of the status of the environment in B&H the EPI index was used. The EPI evaluates countries on 22 performance indicators spanning ten policy categories that reflect elements of environmental public health and ecosystem vitality. The first measurements and indicators for the environment were completed by the Yale Center for Environmental Law and Policy and the Center for Earth Information Science Information Network at Columbia University in 2000 with came to be known as the Environmental Sustainability Index (hereinafter: ESI). The ESI was launched to complement the Millennium Development Goals and a counterpoint to the gross domestic product (Yale, 2012). In the past the top positions on the EPI index were held by countries like Latvia and Costa Rica, middle-income countries whose per

capita GDP is under $12,000. Their high score on the EPI indicates that they have achieved impressive environmental outcomes despite relatively lower income. This is not supportive of the Kuznets Theory, which states that environmental improvements occur at higher incomes ($34,000 has been used as a threshold after which improvements in the environment should happen). This suggests that income alone is not the only determinant of environmental performance and that policy choices and good governance also matter.

In 2014, B&H scored badly across the board on all indicators when compared to regional countries, see Appendix B for the detailed table. B&H scored badly for air quality which includes household air quality. This is because a large percentage of the population in B&H still uses solid fuels as their primary cooking fuels, such as wood, coal and charcoal. The usage of solid fuels for household use is associated with increased mortality from pneumonia as well as increased mortality from pulmonary disease and lung cancer among adults. Particulate matter is also a problem in B&H as it often exceeds the recommended levels. Suspended particulate matter contributes to acute respiratory infections and other diseases, including cancer. Particulate matter comes from any burning materials and includes smoke stack at factories, power plants, houses that burn wood or coal for heating, as well as from vehicles. B&H scored poorly when it comes to wastewater treatment. B&H scored very well for agricultural subsidies but scored poorly for pesticide regulation. Pesticides damage the ecosystem by killing beneficial insects, pollinators, and fauna. Scientists have linked certain diseases and poor health to increased exposure to pesticides including insomnia, increased headaches, hand tremors, fatigue, and neurological symptoms and dizziness. By far the indicators where B&H scored the worse was for biodiversity and habitat specifically for terrestrial protected areas for both national and global biome protection. Finally under climate change B&H needs to improve its score in the area of carbon intensity (Yale, 2012).

When it comes to the environment, literature focuses mainly on B&H's air pollution problems. According to the National Environmental Action Plan B&H of 2003 (FMPE, 2003), the key source of air pollution in B&H are stationary sources which include thermo energy facilities and industrial factories. The large thermo energy facilities in Kakanj, Tuzla, Ugljevik, Gacko use coal extracted from B&H mines as their main energy source. B&H coal has a low level of heat which has on average two times lower the energy level than coal in Poland and England, meaning that greater amounts of coal are needed to provide the same level of energy. Thermo energy facilities are not equipped with modern equipment to separate solid particles from gases and they still emit a high level of sulfur-dioxide. On top of this, B&H has a traditional strong metal industry which is reliant on using large amounts of energy, and very few have implemented energy efficiency measures. Many of their factories contribute to pollution as they are located in places where there is poor air flow and are next to towns. The greatest concentration of factories that cause air pollution are located in the north-east of B&H and near towns like Zenica which have a steel mill

right next to the town, Kakanj and Lukavac which have cement factories in their town boundaries. There are no regulatory measures enforced by government or incentives to reduce pollution or save on energy. Enforcement of measures to clean air are poorly implemented and most factories despite having filters for dust do not have filters for sulfur dioxide which are expensive (Muratbegovic & Guso, 2011).

Due to the high reliance on wood burning as a means of heating, a large amount of air pollution comes from the fact that many cities and towns have not installed central heating systems in their residential areas. Even places where there is central heating, due to poverty reasons, many can still not afford to pay for central heating and they end up choosing coal and wood heating. Traffic is one of the greatest sources of air pollution, especially in larger cities and towns where it is not regulated. There are many traffic lights and there is a lot of stopping and going causing high levels of pollution. In Sarajevo the greatest amount of pollution comes from old vehicles which are on average 15 years old and this is made even worse because Sarajevo is situated in a valley. Vehicles in B&H should not emit more than 1% of carbon monoxide, however law enforcement agencies do not verify the exhaust levels in B&H. Poverty is the main reason people are driving old cars. Most traffic in B&H is still road traffic, as the railway transport has still not been repaired so all perennial vehicles and industry transport predominately occurs by road (Muratbegovic & Guso, 2011).

In 1992, B&H ranked next to Sweden and Finland for the diversity of its forests in Europe and it has the fourth biggest forest in Europe. B&H has to be concerned with its forests which is vital to one of its most competitive industries, the wood processing industry and therefore important for its economic growth. The biggest problem with forests is that little is being done to stop deforestation and reforestation is low. This became evident during the 2014 floods, where the lack of reforestation contributed to land being eroded and landslides occurring. There are over a thousand active erosion areas in forests and forest land and around 20 million m^3 of forest lands that slide every year. In recent years, erosion and flooding has increased, drying up drinking water. Deforestation occurs in B&H because of poorly skilled personnel to manage the forests, and ineffective environmental laws, corruption, population growth, theft and urbanization (Muratbegovic & Guso, 2011). In the last 15 years there has been an enormous amount of illegal harvesting of forests, and according to environmental experts an estimated 20% of forests have been cut down compared to before the war. The B&H National Environmental Action Plan (FMPE, 2003) identified increasing poverty as a major contributor to environmental degradation, as the poor are reliant on wood from forests for heating purposes.

4 THE INSTITUTIONAL CONCEPTUAL FRAMEWORK FOR SUSTAINABLE DEVELOPMENT IN B&H

The purpose of this thesis is to conduct an in-depth analysis of B&H's institutional and policy dimensions related to sustainable development and to propose a framework to measure sustainable development. Within this chapter the following objectives of this thesis were achieved: an analysis of the policy structure and policy governance was completed to assess whether sustainable development elements are integrated into public policy at the State and Entity levels. This was achieved by referring to key strategic documents and governance practices. This Chapter also includes identifying the existing institutional framework for sustainable development by completing a critical assessment of the alternative institutional approaches to sustainable development. An assessment of the current institutional capacity for sustainable development at the State and Entity levels was completed. Finally, this Chapter also analyses B&H's capacity to collect sustainable development indicators this was completed in order to achieve the objective of proposing indicators for sustainable development for B&H in line with proposed conceptual global frameworks.

The Chapter is therefore divided into three main areas: policy structure and governance, institutions and institutional capability and finally indicators and monitoring. Within each of these areas a conceptual framework was identified against which B&H was assessed. An overview of the conceptual frameworks is presented with their main elements. This is followed with an explanation of the methodology of how B&H is assessed against the reference framework. The methodologies applied were literature reviews and a qualitative assessment completed through semi-structured interviews. Within each section the findings are explained as analyzed through the methodology. Critical assessments are included to provide an overall assessment of the current status of each of the three areas in B&H.

To assess the overall institutional framework for sustainable development, the UNDESA sustainable institutions document National Institutions for Sustainable Development (UNDESA, 2012) was referenced. UNDESA states that features of sustainable development institutions are that they should address economic, social and environmental pillars in a balanced manner, adopt integrated and horizontal coordination across sectors, take into consideration the interest of future generations, encourage participation by meaningfully engaging relevant stakeholders, and improve access to information and access to justice. The UNDESA definition does not include institutions rather focuses primarily on strategies, although there is a general acceptance that institutions are key to implementing sustainable development. Therefore, the UNDESA reference documents were applied as the conceptual framework to assess the policy framework in B&H. To analyze the institutional framework two conceptual institutional framework documents were used: a UNEP document and a general guideline documents on capacity development developed

by UNDP. To assess B&H's ability to collect indictors, the UN, OECD and EU global reference indicators were taken as references.

4.1 Policy Structure and Policy Governance

4.1.1 Methodology

Two key documents were used as a benchmark against which to assess B&H policy and policy governance for sustainable development: the UNDESA guidance document developed in 2002 (described above) for preparing national sustainable development strategies and a guidance document from the United Nations Council for Sustainable Development (hereinafter: UNCSD). The latter document was a RIO 2012 issues brief released for the United Nations Conference on Sustainable Development. The document addresses the main issues regarding the strengthening of sustainable development at the national level and broader coherence and coordination with relevant institutions. The table below shows, the key elements extracted from each guidance document in the first column, with explanations of the main headings in parenthesis. The last two columns indicate whether the key elements were derived from UNDESA or UNCSD.

Table 8. Key Elements for Strategy Capacity Building - UNDESA and UNCSD guidelines

#	Core principles	UNDESA	UNSCD
1	Integrating economic, social and environmental objectives (integration across the three pillars and across territories, vertical and horizontal integration)	√	√
2	Participation and consensus (ensuring the widest possible inclusion of stakeholders in the development of strategies)	√	√
3	Country ownership and commitment (strong political commitment at all levels and sustainable development spearheaded by a strong institution)	√	
4	Comprehensive and coordinated policy process (building on existing processes and strategies)	√	
5	Targeting, resourcing and monitoring (setting realistic targets, coherence between budget and strategy priorities, and mechanisms in place to monitor and evaluate)	√	
6	Effectiveness and efficiency of administration and public service delivery		√

Source: *UNDESA 2012 Sustainable Development in the 21st Century National Institutions for Sustainable Development – a preliminary review of the institutional literature, 2012: UNCSD 2012 RIO Issues Briefs, 2012:*

Given the broader number of elements covered by UNDESA, this approach was used as the conceptual framework against which to assess B&H's policies. There is international

commitment towards formulating national strategies for sustainable development. In the absence of a national sustainable development strategy, there is also wide acceptance that sustainable development strategies can take different forms such as poverty reduction strategies and national development plans. As B&H has no specific sustainable development strategy, poverty reduction strategies or (adopted) national development plans, sectorial strategies were analyzed to assess whether they contained sustainable development elements. The methodology applied to assess B&H's policy governance for sustainable development included reviewing strategies to assess the country's progress on the key elements 1, 3 and 5 from the above table. The strategies reviewed were the draft State national development plans and selected sector strategies. The sector strategies were selected on the basis that they have the potential of including sustainable development elements and included strategies for industry, education, health and environment. A qualitative analysis was completed based on semi-structured interviews to evaluate key elements 2, 3, 4 and 5 from Table 8. The semi-structured interviews were conducted with the State and Entity level ministries responsible for environment.

4.1.2 Key Findings on Policy and Policy Governance

A review of available strategies showed that B&H does not have a specific Sustainable Development strategy, nor does it have a national development plan/strategy that incorporates sustainable development elements. At the State level, there were two draft strategies completed in 2010, both of which were never adopted but which have sustainable development elements: the Strategy for the Development of Bosnia and Herzegovina and the Strategy for Social Inclusion of Bosnia and Herzegovina. The B&H Strategy of Development of B&H (Council of Ministers, 2010a) proposes that the country should focus on education, foreign trade, competitiveness and mobility of labor to achieve long-term development and growth. The development strategy recognizes that sustainable development is important and that all three pillars of sustainable development need to be incorporated into local, regional and national strategies. The B&H strategy defines sustainable development as being development of renewable energy sources, measures to prevent damage to the environment and improve air quality, reaching a competitive energy market by unbundling it and deregulating it, ensuring a secure supply of energy. The strategy identifies the key challenges to promoting sustainable development in B&H as being: climate change specifically in terms of B&H's vulnerability to floods, droughts and other disasters and illegal waste dumps and an inefficient system of solid waste management. Finally, a key focus area of the strategy is the development of a good transport network, which is considered to be essential for the foundation of sustainable development. There is no mention of the social pillar in this strategy, but this pillar is dealt with in the Special Inclusion Strategy (Council of Ministers, 2010b). The second strategy, also never adopted, proposes activities to increase the level of education, especially for vulnerable groups and to increase health coverage to the entire population. It is not clear how the two strategies are integrated and therefore

integration of the three pillars may not be a goal. There are no timelines for the targets, and the activities and results seem to be realistic. It is highly questionable whether the implementation of the strategy is realistic. The main reason being that implementation of activities would need to occur at lower levels of government, yet there seems to be no coordination with lower level strategies. Given the political climate and complex government structure in B&H, the alignment with lower level strategies would have required a significant amount of effort across the Entities, Cantons and different ministries.

The next step involved assessing sector specific strategies for education, environment, health and industry. The State level has no responsibility for education, but they adopted a report titled Strategy for the Development of Education in Bosnia and Herzegovina with a plan for implementation 2008 – 2015 (Council of Ministers, 2008). The strategy identifies the following priorities: increasing the general level of education, increasing the competency of the work force, improving the effectiveness of the educational system and training, preventing social exclusion of youth and children, expanding opportunities for adult education, and improving the quality and providing new opportunities for research. The strategy's short-term goals include preparing a plan of activities to reduce the number of dropouts in primary schools to 7.5% and to increase the number of children enrolling in primary school to 100%, increase enrolment in secondary schools to 90%, and increase enrolment to 32% at the tertiary level (Council of Ministers, 2008). The Council of Ministers adopted in April 2007, the Strategy for Development of Professional Education and Training in B&H for 2007-2013 (Council of Ministers, 2007), which is a document for the entire reform of the educational system in accordance with modern educational trends. It is unclear as to how these State-level documents will be implemented as there is no State level Ministry for Education, and there is no mandatory requirement for lower levels of government to follow these guideline documents. In this sense, the goals and targets are unrealistic because there is no vertical integration of these documents into lower level strategies where the responsibility for education lies. These documents recognize that there is a linkage between education and economic development but this is not reflected in the activities that are set out in the documents. Overall, the State-level targets are unrealistic because they are not vertically integrated. The Entity educational strategies make a connection between the economic pillar and education. The Federation strategy drafted by the Federation Ministry for Education and Science (hereinafter: FMES) refers to the establishment of Vocational and Education Training Councils, which are a mechanism to bring together educational institutions and private sector to prepare curricula in accordance with the needs of the economy. In the Federation, it is important that there is vertical integration as education falls under the responsibility of the Cantons (FMES, 2012). The review of the Federation strategy did not show how and if this was happening.

Both Entities have adopted strategies for Primary Health Care. The Federation strategy for health completed by the Federation Ministry for Health (hereinafter: FMH) focuses on developing a health care system that is based on primary health care with an emphasis on family care medicine (FMH, 2008). The strategy goals are to improve the health outcomes of the population by improving a more equitable access to health care services, to ensure that health services are used more adequately, and to increase higher patient satisfaction. The Federation chose this direction as systems that have a higher number of primary care physicians typically have a lower number of deaths generally. Primary health care systems implement prevention measures for cardio and cancer health problems and places emphasis on protecting socially marginalized groups. Both the Federation strategy and the strategy completed by the RS Ministry for Health (hereinafter: RSMH) recognize that health is linked to economic development and poverty (FMH, 2008; RSMH, 2006). The Federation Health strategy also refers to the impact of the environment on health specifically how wastes impact the quality of drinking water which further impact health. Also, there is an activity within the Federation strategy that calls for improved coordination with other Ministries which have an impact on health however there is no mention of which specific Ministries.

The Federation Ministry of Energy, Mining and Industry (hereinafter: FMEMI) developed a document called Development of Industrial Policy in the Federation of BiH (FMEMI, 2013) which is not a strategy document. From this policy thesis, an action plan was developed with defined goals and measures, a strategy was never developed. When it comes to sustainable development elements the action plan calls for the development of a Law for Environmental protection, Law to establish a Fund for Environmental Protection and Energy Efficiency, Law on Energy Efficiency. However, overall there is insufficient discussion or measures in the FB&H industrial policy paper and its action plan to integrate environment and industry. The RS Sectorial Strategy for the development of the Industrial Sector in RS for 2009-2013 developed by the RS Ministry for Industry, Energy and Mining (hereinafter: RSMIEM) focuses on the barriers and obstacles to the development of industry (RSMIEM, 2009). It does not refer to environment but does include the need to move to a more technology- based industry and away from industries based on natural resources. It covers specific industrial sectors – metal and electrical, wood and wood processing and textile, leather and footwear. It proposes a number of measures and instruments to support the growth of the sectors. It has two references to the environment: activities regarding environmental protection subsidies to mitigate the negative environmental practices of industry and to promote the sustainable use of natural resources.

Although a draft National Environment Action plan was jointly developed by the Federation Ministry for Environment and Tourism (hereinafter: FMET) and the RS Ministry of Urban Household-utility activities, Construction and Ecology (hereinafter: RSMUHCE) was completed, it was never adopted (FMET & RSMUHCE, 2003). A State environmental strategy remains an

elusive goal for B&H primarily because of objection by the RS. The action plan integrated economic and particularly social issues with a focus on health and called for integration and coordination with lower vertical and horizontal levels of government. Many of the targets in the document seem to be realistic, but given B&H's political problems when it comes to vertical coordination, they are more likely to be unattainable. At the Federation level, an environmental strategy (FMET, 2007) was developed for the protection of the environment for 2008 to 2018. The strategy includes seven main areas to address: the requirement to improve the legal framework and align it with the EU *acquis,* creating a decentralized and effective environmental administration which is able to respond to the demands required of EU members, developing financial instruments to implement the strategy, implementing measures to protect the biodiversity and geodiversity in the Federation and improving land, air and waste management. One of the measures in the Federation strategy is to improve horizontal and vertical coordination, specifically coordination of laws and strategies between the Federation and Cantons, and with the State-level. There is also mention of the need to develop coordination mechanisms on environmental matters with other Ministries. How much coordination is actually happening is questionable as there are certain measures included in the Environmental strategy that requires the actions of other Ministries. The strategy called for certain laws to be drafted in the area of planning and land issues and mining, yet within the Ministry of Energy, Mining and Industry's industrial action plan there was no such activity planned. Overall, the deadlines for the measures seem unrealistic mainly because it is not clear if the other Ministries are committed to fulfilling the measures. Most measures had to be adopted in 2008 (a large number of legislative acts) and most of these, activities were not completed.

In the RS the Strategy for the Protection of Nature (RS Government, 2011) has four main activities: protection of biology and biodiversity in the RS, sustainable usage of natural resources, and establishing a financial mechanism to use natural resources in a sustainable way. The RS strategy does include language to promote integration and to create an all-inclusive system of environmental protection, despite no references of coordinating with other Ministries. Specifically, the ministries responsible for industry, mining, energy, water ways and agriculture all of whom touch on natural resources. Therefore, the strategy has a limited definition of coordination. The strategy calls for the territorial integration of the environment in a downward vertical direction, specifically coordination with the municipalities in this Entity. There is no mention of coordination with the Federation or upward coordination with the State. This raises the question of how effective the strategy can be if there is no upward coordination. For example, in the area of waters and rivers – rivers go through the Federation. A coordinated effort is not just needed but is crucial. The strategy also states that local communities should be involved in activities related to environmental protection, but it does not state whether they should be included in the development of the strategy.

Through the semi-structured interviews conducted with selected Ministries more information about environmental strategies was obtained. According to both Entity Ministries that are responsible for the environment both strategies are good "on paper". The Expert Advisor in the Federal Ministry was more forthright in regards to the strategy "the strategy is fine but it cannot be implemented as there are a lack of instruments to implement it, precisely there are not enough budgetary funds allocated to implement all of the required activities…for example we need BAM6 billion to implement the activities for waste waters improving access to water and flood protection measures".

When it comes to coordination the UNDESA National Institution for Sustainable Development document states that coordination is in place if there is one of the following: a National Council for Sustainable Development, an inter-ministerial coordination mechanisms or the inclusion of sustainable development under the national economic and social council. According to UNDESA, the role of the councils is to act as a vehicle through which stakeholders and experts can provide advice to government and comment on government proposals and strategies. B&H does not have a national council for sustainable development but there are two Entity Socio-Economic councils which according to the laws which established the councils do not deal with all of the sustainable development elements. The semi-structured interviews also provided some insight into whether the strategies were developed with a broad number of stakeholders (in the absence of sustainable development councils at least to have stakeholders involved). Both Entity Ministries replied that because B&H has signed the Aarhus Convention the process of developing strategies has to be transparent and involves organizing sessions to involve the general public and interested stakeholders. According to the RS Ministry, the non-for-profit sector commended the Ministry for including them in this process. So although B&H does not have councils in place, they are undertaking the first steps to involve concerned stakeholders. Table 9 provides a brief conclusion of the above discussion as assessed against the UNDESA core principle areas which illustrates B&H's progress in policy structure and policy governance. Overall there are many gaps and obstacles that B&H needs to address in the sustainable development policy areas:

Table 9. Summary of Key Findings for Policy Governance Assessment

UNDESA Core principles	Findings for B&H
Integration of economic, social and environmental objectives (integration across the three pillars, across the territories, vertical and horizontal integration)	Poor integration of three pillars in Entity sector strategies. State strategies do a better job of integration, but these were not adopted. No vertical coordination among the strategies. Sector specific strategies contain elements of other SD elements, but insufficiently.
Participation and consensus (ensuring the widest possible inclusion of stakeholders in the development of the strategies)	Environmental strategies developed with involvement of a wider group of stakeholders. This thesis could not assess whether this was meaningful, this requires further analysis.
Country ownership and commitment (strong political commitment at all levels and sustainable development spearheaded by a strong institution)	Insufficient funds are allocated to SD, there is no integrated strategy for sustainable development nor are elements of sustainable development integrated into existing strategies, and there is no institution that spearheads SD.
Comprehensive and coordinated policy process (building on existing processes and strategies)	Poor or almost no coordination of policies.
Targeting, resourcing and monitoring (setting realistic targets, coherence between budget and strategy priorities, and mechanisms in place to monitor and evaluate)	Targets overambitious and have not been met, lack of coordination with other institutions has led to the failure of targets being met, insufficient funding.

Source: *UNDESA 2012 Sustainable Development in the 21ˢᵗ Century National Institutions for Sustainable Development – a preliminary review of the institutional literature, 2012.*

4.2 Institutions, Institutional Capability and Horizontal Coordination

4.2.1 Overview of Sustainable Development Institutions in B&H

Sustainable development in B&H is complex from an institutional perspective as there a plethora of organizations involved in overseeing elements of its implementation. An attempt has been made to identify all of these organizations in Appendix C. Under this section the first question to assess is whether B&H has established all of the institutions required to implement sustainable development. A report completed by the EU funded Envis B&H project (European Commission to B&H, 2013) provided guidance on which current institutions are missing. They also stated that additional institutions may eventually be needed as new *acquis* is adopted in the environmental sector. The institutional gap of the current situation shows that the following institutions are

missing: a State level authority that deals with environmental impact assessments and strategic environmental impact assessments; a State-level authority that is responsible for implementing activities related to the EU Directive for violations and crimes against the environment; an institution that would keep the registrar on urban planning; a State-level environmental fund; and an institution in charge of matters related to industrial pollution. Most importantly there has been no progress made to establish a State-level Environmental Agency.

At the Entity-level, the Federation and the RS do not have institutions that will carry out the requirements of the EU Directive for violations and crimes against the environment. In the Federation there is no single institution that has been assigned responsibility to report on environmental issues to the EU, through the State. This institution needs to coordinate information from the Cantons. The Entities also need to assign an organization competent for controlling emissions from non-road machinery, persistent organic polluters and greenhouse gases.

4.2.2 Methodology

As there are a large number of government bodies responsible for aspects of sustainable development in B&H it would require a significant amount of effort to assess each of these institutions that would go beyond the scope of this thesis. Therefore, this thesis is limited as it assesses the institutional capabilities of certain elements of sustainable development, specifically that of the environment. The focus of the institutional analysis was on the State and Entity level institutions responsible for the environment. The conceptual framework against which against the institutions were analyzed were the United Nations Environmental Programme (hereinafter: UNEP) guidelines document for capacity building (UNEP, 2002). UNEP's role is to support global, regional and national bodies to develop institutions that are capable of implementing environmental protection activities. According to UNEP the goal of building capacity is to build the capability of government agencies to evaluate and resolve crucial questions related to policy and implementation choices among developmental options. Governments need to learn how to make these choices based on environmental limits and to meet the needs as perceived by the people of the country. Capacity building means that a country has human, scientific, technical, organizational, institutional and resource capabilities. The UNEP states that the following elements need to be in place:

Legal and institutional development and strengthening: UNEP's key recommendation is that nations should have an environmental law and they need to be implementing the law. Apart from this, they also propose that countries implement multilateral environmental agreements, and to put in place mechanisms to ensure compliance and enforcement of national laws. They need to develop measures to track implementation of international treaties and adopt environmental

impact assessment laws. Finally, governments should establish environment directorates within sectorial ministries to ensure the more effective implementation of environmental policies and laws, and the public must be included in the development of the laws.

Integrating economic development and environmental protection: UNEP proposes that environmental awareness programs should be developed and disseminated. Trainings on cross-cutting areas should include the ozone layer, concern for energy consumption and consequences of energy production on the environment. UNEP also proposes that institutions should have people with the skills to analyze energy policies, industrial energy efficiency, energy sector reform, environmentally sound transport choices, knowledge on transferring environmentally sound technology, knowledge to develop tools for sustainable production and consumption. Staff should also have the ability to undertake assessments to analyze relationships between the environment, trade and development and to develop environmental impact analysis of trade policies.

Environmental, assessment, monitoring and reporting: The UNEP guidelines state that institutions must be able to complete timely assessments to track emerging issues and provide reliable information on the state of the environment. They also have to make this information readily available to policy decision makers. Institutions must have the capability to prepare for environmental emergencies, including awareness and preparedness programs at the local level.

Promoting public participation in environmental management: UNEP recommends that various stakeholders should be involved during the process of developing and implementing sustainable development. To make stakeholders prepared, institutions should be capable of undertaking environmental training and education.

The UNEP guidelines focus on environmental institution technical requirements. To supplement these elements the UNDP Capacity Development Practice Note (UNDP, 2008) was used which provides guidance on the generic capacities of government institutions. The UNDP proposes that institutions should have a good policy and legal framework that includes the capacity to monitor and evaluate the implementation of policies and regulation. Government institutions must have the capacity to ensure that all activities are transparent to keep the public informed including posting information on the internet. The organization should have the capacity to ensure equitable and meaningful stakeholder participation during all phases of the decision-making process. They need to have good capabilities to collect data on activities and outputs, possibly through the establishment of a dataset from which reports can be extracted to report to management. Staff needs to be continually trained, and the institutions need to have the basic physical infrastructure in place to operate.

The methodology which will be used to assess whether B&H environmental institutions meet the criteria provided by UNEP and UNDP was through a qualitative analysis based on semi-structured interviews of the following institutions: State Ministry for Foreign Trade and Economic Relations and the two Entity ministries responsible for the environments. The UNEP and UNDP elements formed the structure of the interview questionnaire. To provide a benchmark for the B&H context, previous assessments were used to obtain the current status of B&H's institutional capacity in the environmental sector. The assessments reviewed are the B&H Environmental Performance Review completed by the United Nations Economic Commission for Europe in March 2011, the Functional Review of the Environment Sector - a report financed by the European Commission in April 2005, and the State of the Environment in the Federation of Bosnia and Herzegovina from 2010 completed by the Federal Ministry responsible for environment and tourism.

The Environmental Performance Review of Bosnia and Herzegovina conducted by the United Nations Economic Commission for Europe (UNECE, 2011) identified a number of short-comings in the institutional capacity of government organizations in the areas of policy and regulation. An overarching concern is that government has not made environment a priority despite statements of commitment. It seems that the main incentive for B&H to advance in the area of environment is because it is a key requirement for EU accession. General government policies, plans and programs do not take into account environmental impacts. At the state level there is no legal basis to develop and adopt an environment strategy which also prohibits the establishment of a state-level commission on sustainable development which would oversee the implementation of the strategy. The report notes that the regulatory system is complex and in many cases duplicates one another because of the four administrative levels in B&H. Furthermore, the lack of a State law for Environment Protection and a State-level Environmental Protection Agency results in poor coordination of policies. The inter-Entity coordination group has had some positive outcomes including the harmonization of policies and laws, but the impact is limited because there is no vertical coordination with the State level. Overall there needs to be continual improvement to develop and define environmental priorities and policies including economic instruments as there are only a limited number of economic instruments operational in the Entities.

The Entity Ministries for Environment need to strengthen their legal capacities to develop and implement environmental laws and policies and other EU requirements. They need to draft secondary legislation for water protection, air protection, waste management, nature protection and regulations for environmental assessments. B&H needs to implement the international agreements they ratified. The report recognizes that monitoring and information management has improved including the air-quality monitoring network, water monitoring, and emission monitoring of large emitters. Unfortunately, there has been little progress to develop an overall comprehensive monitoring system. The Federation completes regular environmental assessments

reports based on indicators and reports to the European Environmental Agency, but improvements are needed in reliability and consistency of data. No reports are completed for the RS and the State. The capacity of staff in the institutions needs to be strengthened through training and inspectors need to be trained as well. Other sectors need to be encouraged to integrate environmental concerns into their policy and legislative frameworks. At the State level, the organizations responsible for the environment should be staffed adequately and all required positions should be filled.

According to the Functional Review of the Environment Sector in B&H (EC, 2005), environmental legislation and government bodies responsible for its implementation are fragmented and mechanisms for coordination are inadequate. As a result, the administrative and legislative procedures are very slow and there is duplication and tardiness. The ministry for environment in the State of the Environment in the FB&H report (FMET, 2005) concluded that the lack of vertical and horizontal coordination has led to poor, inefficient and costly management of the environment in the Federation. The poor coordination stems from lack of institutional channels of vertical coordination mechanisms between the Federation and the Cantons. At the Federal level, there is an Advisory Board for the Environment which includes representatives from the Cantons and the Entity. There are a number of institutions in the Federation that deal with the environment, but the lack of formal cooperation among the stakeholders leads to conflict of interests which has an impact on natural resources. The report also states that there is an inadequate number of trained staff for environmental management and there are a small number of experts in environmental subfields like waste, air emissions, and noise emissions. The FMET report states that there are a large number of regulative documents missing and even the adopted laws are not harmonized with EU regulations or among themselves.

Based on all of the above, the table below was used to structure the questionnaire and formulate the question areas. The first column includes the UNEP and UNDP key areas for institutional capacity building, the second column identifies the current status of B&H in this area as extracted from the documents reviewed and explained above. The final column includes the elements to address in the questionnaire:

Table 10. UNEP & UNDP Key Institutional Areas, B&H Areas to Address and Qualitative Assessment Question Areas

UNEP and UNDP Key Institutional Capacity Areas	B&H problem areas	Key information to obtain from interviews
Legal and Institutional strengthening (UNDP – policy and legal framework): - Environmental Law - Implementation of multilateral environmental agreements - Environmental impact assessment laws - Environmental directorates within sectorial Ministries	- No state law for environment. - Regulatory system is complex and duplication occurs because of the four administrative levels in B&H. - Poor coordination has led to costly implementation of environment - Plethora of legislation not developed and others not in accordance with the *acquis* - Weak integration of environment in other sectors	- Assess progress at State level for adopting environmental law and establishment of institutions (State level Environmental Agency) and strategy - Analyze if horizontal and vertical coordination mechanisms exist and are functioning - Analyze which legislation is missing and which requires harmonization with the *acquis*
Integrating economic development & environmental protection: - Environmental awareness programs being implemented - Environmental related trainings being implemented - Capacity to analyze energy policies, energy efficiency, impact of trade polices etc.	- Staff need further training in all areas of analysis	- Identify if public awareness and training activities are being undertaken - Obtain feedback if staff have skills to analyze policies

(table continues)

UNEP and UNDP Key Institutional Capacity Areas	B&H problem areas	Key information to obtain from interviews
Environmental assessment, monitoring and reporting: - Complete timely assessment to track emerging issues and to provide information on state of environment	- Little progress made to develop a comprehensive monitoring system, poor data reporting by RS and State	- Obtain information on status of collecting and monitoring data and how data is used
Promoting public participation in environmental management: - Participation of stakeholders to implement sustainable development - Public reports on websites	- No mention in either report therefore no knowledge of whether this is being undertaken	- Assess involvement of stakeholders at all levels in sustainable development -Ask if reports and information readily available to public
Staff training, physical infrastructure: - Staff are trained - Physical infrastructure in place to operate	- Staff need continued training in all areas	- Seek feedback of ability of Ministry staff to complete different assessments, draft laws in accordance with EU – overall staff capability - Assess physical infrastructure, monitoring and implementation in place

Source: *UNEP Capacity building for sustainable development,* 2002; *UNDP Capacity development practice note,* 2008.

4.2.3 The Assessment of Institutional Capacity: Key Findings

One of the main findings from all of the reports regarding environmental institutions conducted in B&H was about the lack of progress being made to establish a State level Environmental Agency. The qualitative analysis included a question about this. According to the Ministry of Foreign Trade and Economic Relations (hereinafter: MOFTER) representatives interviewed, the reasons there is no agency is because there is no constitutional basis to establish it. The Dayton Agreement did not explicitly state that environment falls under the responsibility of the State-level. However, a MOFTER representative also stated that this does not prevent the State from taking over this responsibility. However, this would require concurrence from the Entities, and the Republic of Srpska is explicitly against this. As a partial compromise the inter-Entity

environmental committee was formalized through Entity legislation. The role of the State is vague in this committee.

When it comes to legislation the overarching law at the State-level has still not been adopted. According to the State-level representative there is resistance by the RS to adopt it. At the Entity levels a plethora of laws need to be adopted to meet EU alignment requirements. The EU Directive for access to information is a key horizontal law and in the Federation, it was not fully transposed in accordance with the EU acquis. It needs to be improved so as to allow for the ability to obtain adequate information about the significance of the Environmental Impact Assessment (hereinafter: EIA) procedures and allow the public to be provided with information in electronic form. Similar gaps are noted in the RS legislation where the definition of environmental protection is not the same as the EU definition, and the again the legislation governing access to information about the environment is not entirely in accordance with the acquis. Furthermore, in the RS there is no legislative act which governs the implementation of strategic environmental assessments. The RS Ministry of Justice needs to adopt the Directive for the Protection of the Environment through the criminal code and the RS Ministry of Industry needs to transpose the EIA Directive. Also gaps in legislation were identified in the area of water both in the Federation and the RS. In the area of waste management, the Federation and the RS do not have a full registrar of polluters. They also have no records about the collection and transport of waste and licenses for managing waste and there is no obligation in the law to develop a plan for the prevention of waste. The laws governing old vehicles, the collection of old batteries and accumulators need to be adopted and the mining waste law is only partially transposed in both Entities. Furthermore, the RS does not have legislation on how oil waste should be handled. There are numerous laws that need to be transposed in both Entities for air and climate change, including instruments which define the quality of air, directives for paints, laws to reduce the greenhouse-gas emission. The EU-funded ENVIS project recently developed action plans to address the gaps in legislation and the Entity ministries have stated that they will work on addressing these gaps, which should help improve the situation. Furthermore, even where there are laws they are not well written, according to the Federation representative who stated that they "are ambiguous in certain areas as it is not clear what the Federation is responsible for compared to the Cantons…leading to problems to implement the laws".

On a positive note, the qualitative analysis also showed that the ministries are involved in drafting the laws. New procedures are in place in both Entities to ensure that legislation is drafted in accordance with the *acquis*. Now the Entity Legislative Offices review all laws to determine whether they abide by EU requirements. However, the Federal Ministry representatives raised concerns that the Legislative offices do not have the knowledge and expertise to make this judgment, which seems a legitimate concern given the large number of Directives. The

Directorate for European Integration also offers support in drafting legislation that incorporates EU Directive requirements.

Coordination among the different organizations can be described as being poor. There is an Entity-coordination body as discussed above, but the role of the State is not clear. At the State level, horizontal coordination with different departments is weak even in the same Ministry. For example, the department for environment does not coordinate effectively with the department of foreign trade when trade agreements are being negotiated, despite the fact that both departments lie within the same Ministry. As stated by the Head of the Department for Environment "we rarely ever get involved in the process of international trade negotiations to see what environmental impact they may have on the country…the Entity Ministries tend to get more involved, many times the reason for this is because we have not adopted the relevant legislation at the State level". Even coordination with the departments responsible for energy and small and medium enterprises, again in the same ministry, is based on personal connections and is not formalized. If there is no coordination in the same Ministry, there is even less formalized coordination with other ministries, like the Ministry of Civil Affairs who has some role in the area of education. Vertical integration between the States and Entities is absent. The core problem according to the State representative is that the State cannot force the Entities to harmonize the laws. The only area where there is successful coordination is in the area of reporting requirements that B&H has to make towards the EU and other international bodies. The data is collected at the lower levels of government and sent to the State-level. The State has to report on certain issues as stipulated in international agreements B&H has signed. This area is efficient because the reporting requirements have been incorporated into the Law on International Agreements. The political situation in B&H is so strained that it is not a surprise that vertical integration is poor. However, this is not an excuse for weak horizontal integration, between and within the ministries. Here, at least procedures and mechanisms can be developed to make these different departments cooperate and coordinate better during strategy development and implementation. The fact that governments (State and Entities) have not done this, means that they are not really committed to sustainable development.

The poor horizontal coordination mechanisms in the Federation were clearly depicted in the response received from the Federal Ministry who stated that coordination with the Ministry of Industry really only happens when an environmental permit has to be issued to a company, "apart from that there is no other interaction or coordination". There is no coordination in policy or policy implementation. The Federation representative also expressed concern about the lack of coordination mechanisms between the Federation and the Cantons. Although the different levels of government do meet to discuss and coordinate on certain matters, the law does not ensure this and mechanisms are not in place to make coordination mandatory. The RS environmental ministry does provide comments and opinions on strategies and legislation proposed by other

ministries and this process is formalized through government procedures. However, although not explicitly stated the general sense received from the discussion was the real coordination and integration is also not happening in this Entity. In conclusion, little progress has been made in the area of coordination in the last few years, and it is almost completely absent.

It is important that stakeholders be involves in developing and implementing sustainable development. The first step to all this to happen is to increase their access to information. The UNDESA defines that access to information means that a country is committed to implementing the Aarhus Convention through national law or adoption of Freedom of Information Laws. Bosnia and Herzegovina acceded to the Aarhus Convention in October 2008 and they are legally bound by the terms of this treaty. This Convention provides the rights of everyone to receive environmental information held by public authorities, therefore ensuring their right to access information. It preserves everyone's right to participate in the environmental decision-making process and thereby assures public participation in environmental decision-making. Finally, it guarantees the right to review procedures to challenge public decisions and therefore the right to access to justice. B&H adopted a Freedom of Information law for the purpose of providing rights to the general public to access information. The law stipulates that public authorities have an obligation to disclose information. Information includes any material which communicates facts, opinions, and data regardless of how it is classified. A public authority does not have the right to ask for any justification for the request. There has been criticism of the law, notably in a report issued by the Open Society Justice Initiative (Susman and Moore, 2009), which stated that its implementation was inconsistent and was not widespread. Efforts have been made by the judiciary, specifically the Constitutional Court of B&H to counteract this. They developed a guidance document on how to use the law. Amendments to the law were also made, however certain institutions like freedom information organizations and OSCE heavily criticized these amendments in June 2013 as they claimed that it would exclude large volumes of information to the public. From simple observation there seems to be little activity in B&H to raise awareness regarding environmental problems, the MOFTER representative confirmed that the main reason for this was the lack of budgetary funds. The RS stated that they do raising awareness activities and disseminate information about the environment through workshops and training events. They did not provide information about how often they carry out these types of activities. When asked if they make reports available to the public and how stakeholders were involved in the implementation process, the MOFTER representative stated that reports are provided to the Council of Ministers which they believe is responsible for providing information to the general public. This response points to a lack of understanding by MOFTER staff as to what their role is in sharing information with the public. When checked, there are certain reports available on websites but it is not clear what reports are missing. When it comes to implementation, the involvement of stakeholders seems sporadic but examples were given where private sector and academia are represented in the Councils for water management. In order to obtain a full picture

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of stakeholder and public involvement, stakeholders would need to be interviewed - this was beyond the scope of this thesis. Therefore, it is difficult to assess and countercheck whether stakeholders are truly involved in implementation of strategies and whether all information is made available to the public.

When the question was asked if the environment ministry staff have the skills to analyze policies, international agreements and the impact of energy and transport on the environment, the MOFTER representative stated that analyzing international agreements was something that they are planning to start to do in the near future. B&H submitted two reports on climate change to the UN, which among other things analyzes the impact of transport and energy on the climate. These reports were accepted and this shows that B&H does have the capacity to undertake these types of assessments. However, overall capabilities to assess are poor as summarized by the Director of the Environmental Department in MOFTER who stated that analyzing means reporting, monitoring, determining how data is collected, analyzing the quality of the data collected and staff are not currently skilled or trained in these areas. "There are not enough people in B&H that have the skills that can monitor and undertake reporting…training is very much needed". He further commented that lack of funds also hampers the entire process. The response from the Federation was that overall there are limited human resources to complete assessments, mainly because there is an insufficient number of staff and "overall staff are under- skilled". The RS responded saying that most of these types of analysis are completed by the Ministry of Industry. It is disturbing that the Ministry for Environment is not doing analysis and what is even more disturbing is that they believe it is not their responsibility.

A consistent message from the State and Federation was that overall there are an insufficient number of people employed in the Ministries to implement all of the environmental requirements and even those that are employed are not sufficiently skilled. In the area of developing legislation according to EU requirements, as discussed above, there is a system in place in both Entities whereby support can be received from different agencies like DEI to draft legislation. Both Entity Ministries replied that they believe they are capable of writing strategies, and they have the skills for this, which suggests that staff understand what needs to be done. Public representatives from both Entities also stated that they have adequately skilled staff that can monitor the implementation of policies. A more candid response was made by the State level representative who stated "monitoring was not happening". Much of the needed skills in the environment fall under the realms of responsibility of the Entities, however in response to the question of whether they have the capability to develop new environmental instruments - no Entity or State level Ministry was able to reply. The RS Ministry representative stated that their Ministry was not responsible for developing new instruments like the transfer of technology and that this was the responsibility of the Ministry of Industry. Again, the RS Ministry for Environment has a reduced role compared to other ministries or they perceive themselves as having a reduced role. This

could reflect the lack of commitment of the RS Government for environmental matters. In conclusion, there were conflicting responses given in the area of human resources capacity. The Ministries stated that they can draft legislation in accordance with the *acquis* and they can develop strategies, yet they cannot develop new environmental instruments which are essential elements to implement strategies. It is then questionable whether they have the ability to draft strategies.

Financial resources were repeatedly mentioned by all interviewees as being an obstacle to implement the strategy. They also stated that poor physical infrastructure hindered the implementation of the strategy, and cited examples of insufficient number of labs for testing water, no software programs to predict flooding, and a low number of water measuring stations throughout the country. It seems a similar trend is occurring in the environmental sector as in health and education, whereby resources are being inefficiently spent to finance the large number of State, Entity and Cantonal environmental ministries and agencies. If money could be saved on administrative salaries then they could be spent for investments in environmental measures. The other way of using resources more efficiently could be through better coordination. Now each Ministry is working on its own. If the State could rely on staff in the Federal and RS Ministries, and the Cantons, they would have more human resources for analysis and monitoring. This is not currently possible because of the weak coordination between the levels of government.

Table 11: Summary of Findings for Institutional Capacity Assessment

Key information to obtain from interviews	Summary of Findings
- Progress on State level for adopting environmental law and establishment of institutions (State level Environmental Agency) and strategy - Horizontal and vertical coordination mechanisms - Analyze which legislation is missing and what need to be harmonized with *acquis*	- Lack of political commitment hampering adoption of State environmental law and establishment of Environmental Agency - Poorly integrated environmental pillar with other sectors – overall weak horizontal integration - Weak vertical integration between governments - Significant effort required to align legislation with EU
- Determine if public awareness and training activities are being undertaken - Determine if staff have skills to analyze policies	- Insufficient activities conducted by government for public awareness and training - Staff need skills to improve across most areas, additional staff required
- Status of collecting and monitoring data and how data is used (reviewed under 4.3)	- Databases need to be developed. - Data is being collected but analysis for management decisions needs to improve
- Involvement of stakeholders at all levels in sustainable development - Are reports and information readily available to public	- Stakeholders involved in development of strategies, no indication they are involved in implementation
- Ministry staff able to complete different assessment, draft laws in accordance with EU – overall staff capability - Physical infrastructure for policy, legislation, monitoring and implementation in place	- Capacity needs improvement, lack of qualified and skilled staff - More investments required in physical infrastructure - Overall more funds need to be allocated to the sector

4.3 Availability of Statistical Data for Sustainable Development Information

A crucial element of implementing sustainable development is the ability to collect and monitor sustainable development data. The purpose of this section will be to obtain insight through the qualitative analysis about B&H's capability in this area. The same conceptual framework and methodology as used under section 4.2.2 was applied for this section, to obtain a response to the question area B&H's "environmental assessment, monitoring and reporting" capability as shown in Table 10 above. This section also includes assessments of B&H's capability to collect data. This was completed by using the OECD/UNECE/Eurostat indicators as a benchmark and through secondary research methods. Reports and databases of B&H government agencies and those of international donors were reviewed to identify whether data is being collected in B&H.

The qualitative analysis showed that there is still a need to improve the collection of data, particularly since all three Ministries stated that they do not have a comprehensive database where they store data. Data is typically collected for international agreement reporting requirements. As the MOFTER representative stated it is not used for management decision making as "there are no strategies or policies at the state-level". In the Federation there is a database for waterways and both Entities have a registrar of polluters. The problem according to the Ministry is that data collection is not unified across the Entities or towards the State because there are no procedures in place to dictate how data should be collected. Here there are no political obstructions to collecting data and it is perplexing that the Ministries have not been capable of developing procedures by now. A more in-depth analysis is required to determine why but the answers could be that data is not being collected in the field, the definition of data is not aligned, that there are no instruments in place to collect data or simply that no-one has made an effort to address this. There has been some progress in this area. The meteorological agencies do regularly collect data on air, the RS institute for Protection of Nature collects data for biodiversity (the Federation has no agency collecting this data), data is collected about wastes by the statistical agencies, and soil by the relevant institutions in both Entities. The Federation uses the data it collects about waters to its develop action plans. This is one example of how data is being used to feed into strategies and shows that it is possible. Why is it is not happening in other areas and is it just because there is a lack of staff and resources or is it because there is a lack of leadership and vision?

The starting point to propose which indicators B&H can report on was to look at the three indicator sets: Eurostat, OECD and UNECE. Each individual indicator from all three sets was extracted and then research was completed to identify whether B&H is collecting and reporting on that indicator. The quality of the B&H data was not analyzed. Appendix D shows each indicator, which indicator set it comes from, whether it is collected in B&H, and if so by which agency or organization. This Appendix shows that B&H is close to collecting all of the Eurostat indicators and only a few indicators are missing. There were examples of where data is probably being collected, but is not being reported. This was determined as the surveys used by the B&H Statistic Agency had questions related to the indicator which shows that they are being collected. They are not included in the statistical reports. There were also a few cases where data was collected once and was not being completed on a regular basis. For example the Basic Competencies indicator under TH6: Education was reported under the TIMSS assessment which was completed in 2007 and has not been completed since. Below is a summary of which indicators B&H already has, and which indicators it needs to start collecting.

Indicators that B&H is already collecting: Final consumption, national income, gross savings, GDP, labor productivity, unit labor costs, official development assistance, imports from developing countries, in-work at risk of poverty rate, gender pay gap, children in relatively low-

income households, at-risk-of-poverty rate by highest level of education attained or distribution-income-education, distribution-income-regional or dispersion of regional GDP per inhabitant, obesity, life expectancy, healthy life expectancy at birth, suicide death rate, health expenditures, people killed in road accidents, work related ailments, drinking water, sanitation, distribution-health, employment rate, under employment, retirement, distribution-labor-gender, youth employment rate, distribution-labor-education, distribution-labor-region, distribution-overall, education expenditures, participation in education, lifelong learning, distribution-education, protected areas, forests, water resources, water quality, general air pollution, particle matter concentration, ozone concentration, emissions of ozone precursors, acidifying emissions, GHG emissions, energy intensity/productivity, renewable energy, energy tax, imports of energy, generation of waste, hazardous waste, trust in institutions, voter turnout in elections, investment formation, exports of physical capital, general government debt, foreign direct investment, taxes, pensions, surface temperature.

Indicators where information is available but the indicator is not being reported: trade barriers, death rates due to chronic diseases by gender, organic farming, energy dependency, combined heat and power generation, energy dependency.

Eurostat indicators not being collected in B&H: hazardous waste, new infringement cases, e-government, turnover from innovation, noise pollution, GHG intensity, the proportion of fish stock within safe biological limits, particulate matter emission, land use change (probably could be collected as land planning is in place), territorial ecosystem – bird index, and basic competencies in education – math skills.

When B&H develops its own sustainable development strategy and defines its goals it can develop indicators. Having the Eurostat indicators as a part of the country indicators set is probably not a bad idea. Firstly, it is comprehensive and includes the main areas where B&H should be concerned about. Secondly, B&H is collecting most of the Eurostat data and therefore just a little additional effort is required to start collecting all of the indicators. Thirdly, B&H wants to become an EU Member State, and at that stage they will need to report on the Eurostat indicators. Once B&H stakeholders agree on priority areas additional indicators can be added for country specific reasons. In addition, there are two areas that B&H needs to improve. Government management is generally not using indicators for policy development, which means that strategy development is not based on the real situation, but on assumptions. This needs to change. Secondly, the data collection process needs to be harmonized vertically and horizontally in order to ensure that all data can be made available. This thesis did not assess data collection abilities.

CONCLUSION

The purpose of this thesis was to determine whether B&H is on the sustainable development path. B&H does not have sustainable development goals, therefore an alternative methodology was needed to assess B&H's progress on the SD path. This was done by assessing the country's institutional and policy instances for sustainable development. There were a number of objectives of this thesis, including analyzing whether sustainable development elements are integrated into public policy and to assessing the current institutional capacity for sustainable development at the State and Entity levels in B&H. Other objectives included identifying priority areas that B&H must address to embark on the path to sustainable development over the medium term. From these assessments, the next objective of this thesis was to propose a favorable institutional framework for sustainable development in B&H based on the critical assessment of the alternative institutional approaches to sustainable development. This then led to proposing a conceptual framework for implementing sustainable development in B&H that included policy requirements and institutional capability priorities. The final objective was to propose indicators for sustainable development which B&H can apply. The methodologies applied throughout the thesis included literature reviews and qualitative research.

The thesis began by conducting a literature review of the conceptual framework of sustainable development and global progress being made to implement it in Chapter 1. There is still no commonly defined definition for sustainable development which makes it difficult to define common goals. It is therefore challenging to measure global progress. Of the three pillars, the social pillar is the most vaguely defined, and there seems to be agreement on what the environmental and economic pillars mean. Many of the aspirations for sustainable development made at the Earth Conference in 1992 have not been fulfilled. Progress on the path to sustainable development means the convergence of the three pillars which has proven to be difficult to achieve as decoupling of the environment and the economy is not occurring at the global level. Overall little progress has been made on the sustainable development path as convergence remains a farfetched goal. There are a number of assumptions as to why this is happening, including lack of political commitment to sustainable development. However, even where there is political commitment, often implementation is weak because of poor government institutional capacities to implement sustainable development measures.

Under Chapter 2, an institutional framework for sustainable development was identified and includes a strategy and sustainable development indicators. A strategy needs to be built based on a participatory manner and should include a wide group of stakeholders. It should be integrated into other sectors, built on solid assessments of the current situation and based on analysis of future risks. A strategic approach to sustainable development should involve horizontal

integration of sustainable development elements across different sectors. It should also be vertically integrated as implementation at lower levels of government is crucial. When it comes to indicators, there is no singly accepted framework for sustainable development indicators. However, to propose indicators for B&H, an overview of the three main global indicators was completed to identify which one could be applied to B&H. Specifically, within this Chapter a review of the EU, OECD and the UN sustainable development indicator sets was undertaken. There are many commonalities across all three of these indicator sets - all the indicator sets have aspects regarding the economy, poverty, human development, including health, education and the environment.

In Chapter 3, two global indices were used in an attempt to assess the state of sustainable development in B&H. As there is no global sustainable development index, the HDI and EPI indices were reviewed which deal with some of the SD elements specifically health, education and the environment. B&H's progress on these indices was analyzed over the years and compared against regional countries. In certain areas, B&H has stagnated over the years and in others there have been slight improvements. This Chapter further explored, through a literature review, the reasons behind some of B&H's scores on these indices. In the area of health there are institutional problems which lie at the core of the reasons for the poor health results. Health systems lack medical workers and health infrastructure has not been repaired since the war when it was significantly damaged. The health system is costly because it is overseen by 13 different government administrations. An excessive level of resources are spent on administrative salaries rather than invested in equipment and hospitals. The fragmented system also excludes a large number of people resulting in an inequitable system of health care.

In the area of education, there is a high primary school dropout rate, low secondary enrollment and poor completion rates, and a still lower tertiary level attainment. This is reflected in the composition of the unemployed, where those with a primary school education make up the highest proportion of unemployed people. The education system is also overseen by 13 ministries and administrative salaries make up for a significant proportion of the education budget. This leaves little room for investments in books and equipment. The disparities between rural and urban areas are high in the area of education, as rates of education enrollment for people from the rural area are lower. The percentage of poor is also higher in rural areas, where they also have less access to health care services, lower education attainment and less chance of breaking out of the poverty cycle.

B&H's status regarding the environment was assessed through the EPI Index followed by a literature review to assess the causes of B&H's poor results. The biggest concerns regarding the environment in B&H is air pollution caused by an energy sector heavily reliant on thermal energy. Power plants use low quality coal meaning more needs to be burnt to achieve the same

level of heat, which means more pollution. Overall there are little activities being implemented to reduce pollutant emissions and to improve energy efficiency.

In the final Chapter, the policy structure, governance and the institutional framework for sustainable development in B&H were assessed. In the area of policy structure and governance, the UNDESA institutional framework for sustainable development and a guidance document from the United Nations Council for Sustainable Development was used as the conceptual frameworks against which B&H was analyzed. In the absence of a sustainable development strategy, the analysis was completed by reviewing State and Entity level sectorial strategies. The assessment showed that there is poor horizontal and vertical integration of the three pillars. Stakeholders are included in the development of strategies but no determination could be made as to how meaningful this involvement is. There are insufficient resources allocated to implement strategies, and there is no institution in place to spearhead sustainable development, which is important because it cuts across a number of different Ministries.

The institutional capability for sustainable development in B&H was analyzed through a qualitative assessment conducted through targeted interviews. The institutional capability assessment focused on B&H's ability to implement the environmental pillar of sustainable development and included assessing the State and Entity environmental ministries. The conceptual framework applied was the UNEP environmental program guidelines and the UNDP capacity development policy note. The assessment found that in B&H there is a lack of political will to establish all of the required institutions for environmental policy. Specifically, there is political resistance to develop a State-level environmental strategy and law and to establish a State-level environmental agency. However, the capacities of current institutions still need to be improved significantly. The environmental sector is poorly integrated vertically, between the different levels of government and horizontally with other sectors. There is a large gap that needs to be addressed when it comes to aligning B&H environmental legislation to that of the EU. There needs to be more public awareness activities to encourage stakeholders to be involved in the development and implementation of environmental protection measures. Overall insufficient resources are allocated to the sector, strategies which are not aligned with budgets and which therefore cannot be implemented. Further investments are needed in physical resources. When it comes to human capital resources, staff skills need to be urgently improved in all areas.

Integrated databases are needed to allow for better collection of data and indicators. Indicators are not being used for policy development and evaluations. There are weak or no procedures in place to define how indicators will be collected. Finally, within this Chapter the goal was to propose which sustainable development indicators B&H could collect. This was completed by analyzing the three global indices which were used as benchmarks, they were: OECD, EU and UN. For each of these indicators, research was completed to check which of these indicators were being

collected in B&H. Based on this analysis, and B&H's aspirations to be an EU member, the Eurostat indicator set is proposed as the indicators against which B&H will measure progress in sustainable development. The country first must identify its goals in order to measure against something. Of the Eurostat indicators, B&H is already collecting 61 indicators, is collecting six but is not reporting on them and is not collecting 11.

In conclusion, B&H has integrated sustainable development elements into some of its policies. There are health, education and environment strategies each of which contain references to other sustainable development pillars. However, these strategies remain isolated and are not vertically and horizontally integrated. Without integration, the strategies cannot act in a coherent manner to help B&H progress on the overall sustainable path. One of the objectives of this thesis was to propose priorities areas for B&H for sustainable development. These priorities were extracted from the findings identified through the global indices where B&H is assessed. They point to the need for B&H to increase its economic growth, reduce the unemployment rate and reduce poverty rates. Concerted efforts need to be made to increase enrolment and completion rates in secondary and tertiary schools, and address the high primary school drop-out rate. Budgetary funds need to be redirected towards investment in education and health facilities and less on wages and administrative costs. Reforms are needed to ensure equitable access to all to health care, to enable portability of health care access and increase the number of doctors and health care workers. Regarding the environment, B&H needs to increase its share of renewable energy and improve energy efficiency. It needs to aggressively finalize the process of transposing EU environmental *acquis,* reform the management of the forestry management companies to decrease corruption, curb illegal cutting and improve forestry stock. Environmental pollution needs to be addressed to enforce better procedures and monitoring to address industry environmental pollution practices. Overall, the government needs to implement special additional measures in rural areas where there is a higher occurrence of poverty, low education attainment, and less access to health care.

Policy recommendations: One of the objectives of this thesis was to propose a conceptual framework for implementing sustainable development in BiH including policy requirements and institutional capacity. It is difficult to propose what to tackle first in B&H when it comes to the institutional framework for sustainable development because of the plethora of challenges in this area. Sustainable development should be at the highest country level where country level goals should be set. However, implementation needs to happen at all lower levels of government in a coordinated manner. In B&H, current vertical and horizontal coordination efforts are weak and there is political resistance for the State to take on a stronger role. The most obvious reform that is needed in B&H is to reduce the number of administrative organizations which account for a large proportion of budgets and are duplicative and inefficient. Given the political climate in B&H, this is probably not a realistic path at this stage. Therefore having this in mind, the recommendations below are based on the current institutional framework in the country.

- **State-level institution to spearhead sustainable development:** B&H should develop a country wide sustainable development council that should include representatives from all levels of government – State, Entity, Cantonal and municipalities (there are two Municipal Associations which may be more effective than including individual municipalities). The council should include Ministries responsible directly for the environment, health and education, industry, small and medium enterprises and others as required. The SD Council should report to the State Prime Minister, it should not fall under a specific Ministry. This will demonstrate that sustainable development is not just an environmental problem but is something that spans across a number of areas – thereby addressing horizontal integration. The Council should oversee the development of a State strategy for sustainable development.

- **Wide stakeholder involvement:** More public awareness programs are needed to make the general population aware of the need for sustainable development activities and its importance for equitable and sustainable economic growth. This will serve two purposes. The first is to encourage stakeholders to be involved in the development of strategies and their implementation so their concerns are addressed. Secondly, stakeholders are also responsible for many 'bad' actions that are detrimental to sustainable development. Therefore by including stakeholders, they can work with the government to find alternative solutions to promote positive actions in sustainable development.

- **Sustainable development policy:** Although most funding for activities for sustainable development elements are done at Entity levels and lower, a single strategy is needed as many aspects do not recognize Entity lines. For example, the environment does not know about Entity borders and a common approach is needed to combat areas such as air and water pollution. The strategy should be developed through a transparent and inclusive process with outside stakeholders. The State level strategy would be a coordination mechanism which fits in with the role the State has taken on, one of coordinator rather than implementer. Again, given the realities of the political situation in B&H, this solution, although not ideal, may more easily be accepted by the Entities. The strategy should ensure horizontal integration of the three pillars. The state-level strategy needs to be coordinated with the Entity sector strategies – specifically the strategies for health, environment, industry and education.

- **Horizontal integration:** Of all of the recommendations this could be the easiest one to address because there should be no political barriers. It requires putting into place procedures to make it mandatory for Ministries and departments at the State level to coordinate to develop strategies. The Entities should also implement similar procedures so that for example, the RS Ministry for Industry coordinates with the RS Ministry of Environment.

- **Country-wide implementation:** Once strategies are developed, implementation must be coordinated. In a government system this requires the development of processes and procedures which are sub-regulatory documents that states how coordination will happen. So each Entity and Cantonal sectorial strategies which will need to be reviewed to determine how they contribute to SD. Much like a checklist was developed in the Entities to determine

whether legislation is in accordance with the *acquis*, a checklist should be developed to ensure that strategies are in accordance with the state sustainable development strategy.

- **Committing resources:** All levels of government need to commit to sustainable development which means setting aside the financial and physical resources that are required to implement strategies. This may be difficult especially when high expenditures are required, therefore action plans need to identify priorities against available budgetary funds.

- **Improving human capability for sustainable development:** Poor skills and overall human capital was continually noted as a weak area. There are two facets to this problem: the first being that there is a lack of people who are involved in these areas – as stated above there are not enough doctors and people in Ministries for environment development. The other is that the current people employed are not skilled in the required areas. To overcome this, B&H needs to do three things: (i) encourage youth to complete their education in deficit professions; (ii) undertake training of current professionals to give them the skills they need to implement sustainable development; (iii) increase the number of professional staff and reduce the number of administrative workers in Ministries.

- **Evaluating and learning:** When there is a strategy in place there needs to be a mechanism in place to evaluate if the strategy is working, therefore indicators are needed. As discussed earlier, many of the indicators are being collected, and it should not be difficult to start collecting the remaining ones. Therefore, this area can probably be easily solved, once the SD priorities and goals are defined. B&H should adopt the Eurostat indicators as the country's framework to measure sustainable development and should build the required system of databases to ensure the proper collection of data. The data should continually feed into policy development which needs to remain flexible. Data indicator documents need to be completed for each indicator and given to all levels of government so there is a common definition of indicators and collection methods are defined. Procedures need to be completed (which should be enacted into law) to guarantee that information is provided to the State-level in a timely manner.

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APPENDIXES

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Appendix A: List of Abbreviations

BH	Bosnia and Herzegovina
BAM	Bosnian Convertible Mark
CSD	Commission on Sustainable Development
DAC	Development Assistance Committee
DEFRA	Department of Environment, Food and Rural Affairs UK
DEI	Directorate for European Integration
EKS	Environmental Kuznets Curve
EIA	Environmental Impact Assessment
EPI	Environmental Performance Index
ESI	Environmental Sustainability Index
ETF	European Training Fund
EU	European Union
FMEMI	Federal Ministry for Energy, Mining and Industry
FMES	Federal Ministry for Education and Science
FMET	Federal Ministry for Environment and Tourism
FMH	Federal Ministry of Health
FMPE	Federal Ministry for Physical Planning
GDP	Gross Domestic Product
GHG	Green House Gases
GNI	Gross National Index
GPI	Genuine Progress Index
HDI	Human Development Index
ITA	Indirect Taxation Agency

ISO	International Standards Organization
JICA	Japanese International Cooperation Agency
MDG	Millennium Development Goals
MOFTER	Ministry for Foreign Trade and Economic Relations
ODA	Office for Development Assistance
OECD	Organization for Economic Cooperation and Development
PPP	Purchasing Power Parity
R&D	Research and Development
RS	Republika of Srpska
RSMH	Republika Srpska Ministry for Health
RSMIEM	Republika Srpska Ministry for Industry, Energy and Mining
RSMUHCE	Republika of Srpska Ministry for Urban Planning, Construction and Ecology
SD	Sustainable Development
UN	United Nations
UNCED	United Nations Conference on Environment and Development
UNCSD	United Nations Council for Sustainable Development
UNDESA	United Nations Department for Economic and Social Affairs
UNDP	United National Development Programme
UNECE	United Nations Economic Commission for Europe
UNEP	United Nations Environmental Programme
UNICEF	United Nations International Children's Emergency Fund
WEF	World Economic Forum
WCED	World Commission on Environment and Development
WHO	World Health Organization
WTO	World Trade Organization

Appendix B: Human Development Index Summary Results for B&H and Regional Countries

Table 1. Main HDI Results for B&H and Regional Countries, 2014

Component	B&H	Serbia	Macedonia	Croatia	Montenegro	Slovenia
Overall rankings	81	64	78	47	52	21
Life expectancy at birth(years)	75.8	74.7	75.0	76.8	74.8	79.0
Mean Years of schooling(years)	8.3	10.2	8.2	9.8	10.5	11.7
Expected years of schooling(years)	13.4	13.6	13.4	14.1	15.0	16.9
Gross national income per capita(2005 PPP$)	7,713	9,533	9,377	15,419	10,471	23,999
Maternal mortality ratio(deaths per 100,000 live births)	8	12	10	17	8	12
Adolescent fertility(births per 1,000 women ages 15-19)	13.4	19.2	17.8	12.8	14.8	4.5
Seats in parliament(% female)	19.3	32.4	30.9	23.8	12.3	23.1
Labor force participation rate (% ages 15 and older female)	35.2	n/a	42.9	46.0	n/a	53.1
Labor force participation rate (% ages 15 and older male)	58.6	n/a	68.9	59.7	n/a	65.1
Population in multidimensional poverty: Headcount(%)	0.8	0.8	1.9	4.4	1.5	0.0
Population in multidimensional poverty: intensity of deprivation(%)	37.2	40.0	40.9	36.3	41.6	0.0
Population vulnerable to poverty(%)	7.0	3.6	6.7	6.3	1.9	0.4

(table continues)

Component	B&H	Serbia	Macedonia	Croatia	Montenegro	Slovenia
Population in severe poverty(%)	0.1	0.1	0.3	4.5	0.3	0.0
Contribution of deprivation to overall poverty: education (%)	29.2	30.5	59.9	64.8	37.5	0.0
Contribution of deprivation to overall poverty: health(%)	51.8	40.1	12.8	9.9	47.6	0.0
Contribution of deprivation to overall poverty: living standards(%)	19.0	29.4	27.3	25.2	14.9	0.0
Population below income poverty line(%): PPP$1.25 a day	0.0	0.3	0.0	13.1	0.1	0.1
Population below income poverty line(%): National poverty line	14.0	9.2	19.0	2.8	6.6	0.0
GDP per capita (2005 PPP$)	7,607	9,809	9,451	16,162	10,402	24,967
Gross fixed capital formation(% of GDP)	20.7	25.3	21.5	21.9	22.1	19.5
Consumer Price Index	118	153	115	117	122	115
General government final consumption expenditure 2011 (% of GDP)	22.1	18.2	18.0	21.2	18.2	20.6
Public spending: Health 2010 (% of GDP)	6.8	6.4	4.5	6.6	6.1	6.9
Public spending: Education 2005-2010 (% of GDP)	n/a	5.0	n/a	4.3	n/a	5.7
Public spending: Military 2010 (% of GDP)	1.2	2.2	1.4	1.7	1.9	1.6
Total debt service 2009 (% of GDP)	8.2	11.2	7.3	n/a	2.4	n/a

Component	B&H	Serbia	Macedonia	Croatia	Montenegro	Slovenia
Immunization coverage: DTP 2010 (% of one-year olds)	95	97	98	98	97	98
Immunization coverage: Measles 2010 (% of one-year olds)	93	95	98	95	90	95
Underweight children moderate and severe. (% of children under age 5) 2006-2010	1.4	1.4	1.5	n/a	1.7	n/a
Mortality rates: Infant (deaths per 1,000 live births) 2010	8	6	10	5	7	2
Mortality rates: Under-five (deaths per 1,000 births) 2010	8	7	12	6	8	3
Mortality rates: Adult female (per 1,000 adults)	67	90	79	60	85	54
Mortality rates: Adult male (per 1,000 adults)	145	184	144	153	161	131
Mortality rates: due to cardio-vascular diseases and diabetes (per 1,000 people) 2008	398	422	465	294	419	168
Physicians (per 1,000 people) 2005-2010	1.4	2.0	2.5	2.6	n/a	2.5
Adult literacy rate (% ages 15 and older) 2005-2010	97.9	99.3	97.3	98.8	98.4	99.7
Gross enrollment rate: primary (%) 2002-2011	88.0	96.0	89.0	93.0	107.0	98.0
Gross enrollment rate: secondary (%) 2002-2011	90.0	91.0	83.0	95.0	104.0	97.0

Component	B&H	Serbia	Macedonia	Croatia	Montenegro	Slovenia
Gross enrollment rate: tertiary (%) 2002-2011	35.9	49.1	40.4	49.2	47.6	86.9
Satisfaction with quality of education (% satisfied) 2011	67.9	58.0	61.6	63.7	62.1	72.6
Primary school dropout rate (% of primary school cohort) 2002-2011	26.8	1.4	2.5	1.0	n/a	0.5
Employment to population ratio (% ages 25 and older) 2011	37.2	n/a	43.4	49.1	n/a	57.2
Youth unemployment (% ages 15-24) 2005-2011	60.0	46.1	56.7	36.8	40.0	16.8
Child labor (% ages 5-14) 2001-2010	5.0	4.0	6.0	n/a	10.0	n/a
Overall life satisfaction (0 least satisfied, 10 most satisfied)	4.7	4.5	4.2	5.6	5.5	6.0
Satisfaction with freedom of choice (% satisfied)	33.0	41.0	56.0	46.0	50.0	90.0
Trust in people (% answering yes)	18.0	17.0	11.0	16.0	21.0	15.0
Satisfaction with community (% answering yes)	61.7	60.0	66.7	66.0	68.3	90.6
Perception of safety (% answering yes)	67.0	68.0	63.0	64.0	78.0	84.0
Homicide rate (per 100,000 people)	1.5	1.2	1.9	1.4	3.5	0.7
Exports of merchandise goods (% of GDP) 2010	28.5	n/a	29.2	19.0	n/a	50.9
Imports of merchandise goods (% of GDP) 2010	54.7	n/a	54.7	32.3	n/a	55.2

Component	B&H	Serbia	Macedonia	Croatia	Montenegro	Slovenia
Export of services (% of GDP) 2010	7.6	9.0	n/a	17.7	24.0	12.0
Import of services (% of GDP) 2010	3.5	9.0	n/a	5.6	9.7	9.1
Share of merchandise exports: agricultural exports (%) 2010	13.2	n/a	25.4	15.0	n/a	6.0
Share of merchandise exports: manufactured goods (%) 2010	54.7	n/a	69.0	68.0	n/a	84.8
Share of merchandise imports: agriculture (%) 2010	19.7	n/a	17.4	11.5	n/a	11.2
Share of merchandise imports: manufactured imports (%) 2010	57.8	n/a	74.8	67.2	n/a	69.1
Parts and components (% of manufactured exports) 2010	27.6	n/a	7.0	24.6	n/a	25.6
Parts and components (% of manufactured imports)	15.6	n/a	11.8	17.2	n/a	26.4
Foreign Direct Investments, net inflows (% of GDP) 2007-2011	2.4	6.0	4.0	2.3	18.5	2.2
Net official development assistance received (% of GNI) 2010	3.0	1.8	2.1	0.3	2.0	n/a
Private capital flows (% of GDP) 2007-2011	2.4	10.6	3.4	3.8	n/a	6.8
Remittances (% of GDP) Inflows: 2010	11.44	8.72	4.25	2.16	7.32	0.66

(table continues)

Component	B&H	Serbia	Macedonia	Croatia	Montenegro	Slovenia
Remittances (% of GDP) Outflows: 2010	0.33	0.18	0.25	0.27	0.67	0.34
Total reserves minus gold (% of GDP) 2007-2011	22.9	33.0	22.9	22.7	8.6	1.7
Net migration rate (per 1,000 people) 2005/2010	-0.5	0.0	0.2	0.5	-0.8	2.2
International inbound tourism (thousands) 2010	365	683	262	9,111	1,088	1,869
Research and Development: expenditure (% of GDP) 2005-2010	0.0	0.9	0.2	0.8	1.1	1.9
Researchers (per million people) 2002-2010	197.2	1,060	471.6	1,571	n/a	3,679
Patents granted to residents and nonresidents (per million people) 2005-2010	46.0	43.3	163.7	18.6	418.1	123.2
Royalty and license fee receipts ($ per capita) 2005-2011	3.4	7.8	4.7	5.3	n/a	42.7
Personal computers (per 100 people) 2002-2009	6.4	17.6	36.6	18.0	n/a	42.5
Internet users (per 100 people) 2010	52.0	43.1	51.9	60.1	52.0	69.3
Fixed broadband internet subscription (per 100 people) 2010	8.2	11.2	12.5	18.3	8.3	24.2
Fixed and mobile telephone subscribers (per 100 people) 2010	109.3	178.7	124.6	186.2	211.9	148.0
Primary energy source: fossil fuels (% of total)	92.2	92.4	84.3	83.4	n/a	69.3

Component	B&H	Serbia	Macedonia	Croatia	Montenegro	Slovenia
Primary energy source: renewable (% of total)	12.1	8.1	11.3	10.9	n/a	12.7
Forest areas (% of land area) 2010	42.7	31.0	39.2	34.3	40.4	62.2
Forest areas (% change) 1990/2010	-1.1	17.3	9.4	3.8	0.0	5.5
Fresh water withdrawals (% of total renewable water resources) 2003-2012	0.9	n/a	16.1	0.6	n/a	3.0
Endangered species (% of all species) 2011	9.8	7.2	13.3	14.3	10.5	11.8
Agricultural land (% of land area) 2009	41.7	57.8	40.2	23.2	38.2	23.2
Number of deaths due to natural disasters (annual average per million people) 2005/2011	0	0	1	18	0	15
Population living in degraded land (%) 2010	6.0	19.0	7.0	18.0	8.0	8.0

Appendix C: Environmental Performance Index Summary Results for B&H and Regional Countries

Table 2: Results for main indicators for EPI

Indicator	B&H	Serbia	Macedonia	Croatia	Montenegro	Slovenia
Overall ranking	107	31	89	45	62	15
Health Impacts	48	61	1	33	26	1
Child mortality	48	61	1	33	26	1
Air Quality	136	157	163	101	107	96
Household air quality	113	101	103	80	99	35
Air pollution exposure to PM2.5	134	148	155	145	132	147
Air pollution exposure exceeding PM2.5	134	151	159	147	130	145
Water and Sanitation	52	42	56	43	68	27
Access to drinking water	51	47	43	55	59	42
Access to sanitation	54	49	74	44	81	1
Water resources	115	93	112	76	103	38
Wastewater treatment	115	93	112	76	103	38
Agriculture	126	1	10	112	54	104
Agricultural subsidies	1	1	1	134	1	126
Pesticides regulation	145	18	51	1	112	18
Forests	1	1	80	26	1	44
Change in forest cover	1	1	80	26	1	44
Biodiversity and habitat	170	10	141	67	107	1
Terrestrial protected areas (national biome weight)	170	27	135	81	70	1
Terrestrial protected areas (global biome weight)	172	28	112	99	67	1
Climate and energy	107	29	54	26	72	53
Trend in carbon intensity	102	27	1	30	85	65
Change of trend in carbon intensity	101	25	27	54	30	99
Access to electricity	1	1	66	1	1	1
Trend in CO_2 emission per KwH	49	20	59	32	89	47

Appendix D: B&H Sustainable Development Institutions Organizational Chart. *Figure 1: Current SD Institutional Status*
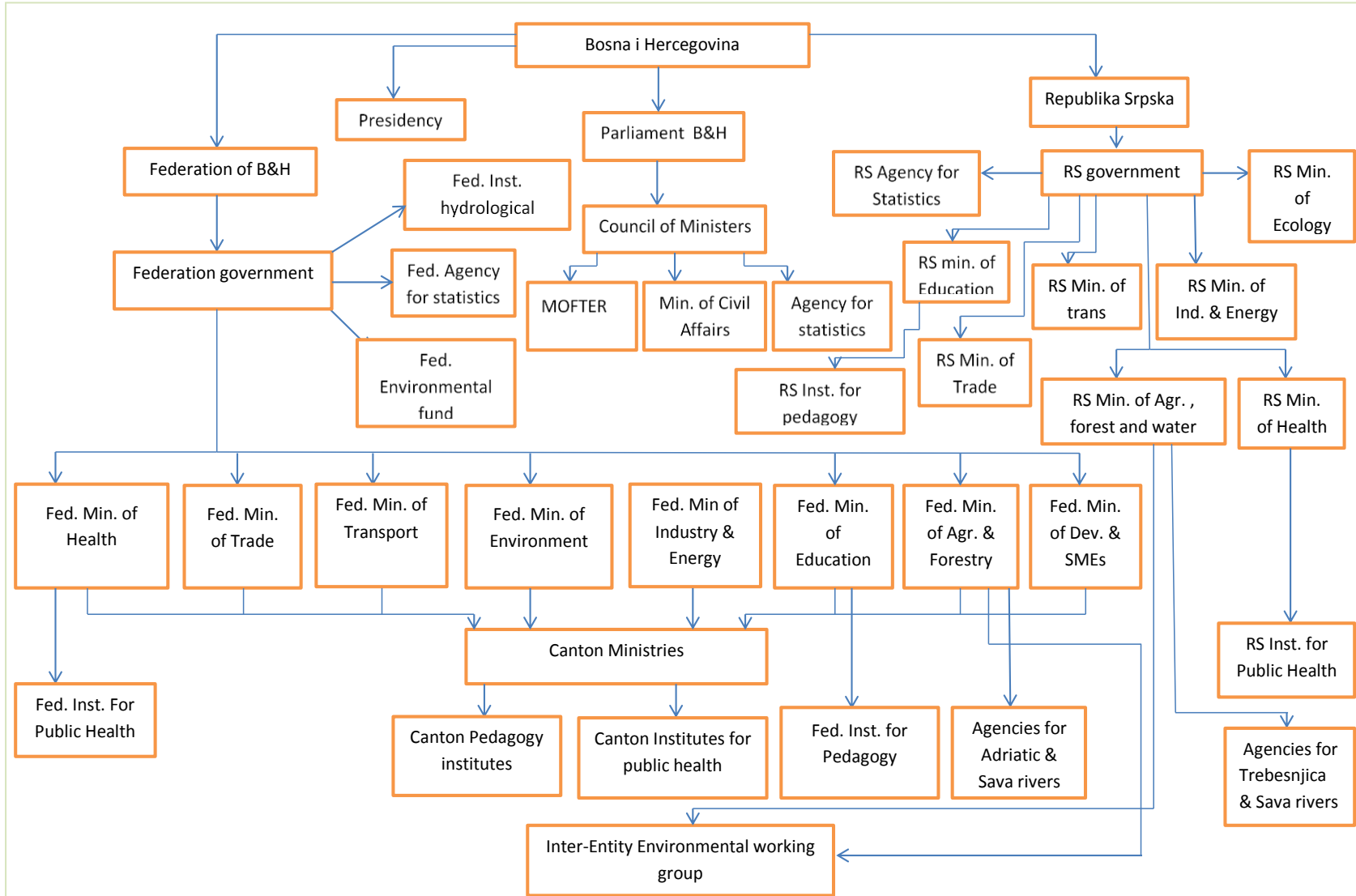
Appendix E: B&H Sustainable Development Indicator Analysis

Table 3: Identification of B&H data against global SD indicators

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH1. Subjective well-being	Life satisfaction	Life Satisfaction		Some OECD countries: GBR, NL		No
TH2. Consump-tion and income	Consumption	Final consumption		Eurostat, OECD	Yes	B&H Statistics Agency
	Income	National income	Disposable income, Household income	Eurostat, OECD	Yes	B&H Statistics Agency
	Savings	Gross Savings	Net savings; Household saving rate	UNCSD, Eurostat	Yes	B&H Statistics Agency
	Gross domestic product	Gross domestic product		UNCSD, Eurostat	Yes	B&H Statistics Agency

(table continues)

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH2. Consump-tion and income	Productivity	Labor productivity	Output per worker	UNCSD, Eurostat, OECD	Yes	Not reported currently but can be determined from existing statistical reports from B&H Statistical Agency
	Competitive-ness	Unit labor costs	Real effective exchange rate; Diversity of exports	UNCSD, Eurostat, OECD	Yes	B&H Statistics Agency
	Official development assistance	Official development assistance	ODA to poor countries; ODA by income group; United ODA; bilateral ODA by category; total EU financing for developing countries; ODA per inhabitant	UNCSD, Eurostat, OECD	Yes	World Bank
	Remittances	Remittances as a percentage of GNI		UNCSD, OECD	Yes	Central Bank

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
	Imports from developing countries	Imports from LDCs/developing countries	Fair trade	UNCSD, Eurostat, OECD	Yes	B&H Foreign Trade Chamber and Indirect Taxation Agency
TH2. Consump-tion and income	Trade barriers	Average tariff barriers imposed on exports from developing countries and LDCs	Poverty rate; population living below national poverty line; persons at-risk-of-poverty after social transfers; persistent -at-risk-of-poverty rate; relative median at-risk-of-poverty gap;; poverty in living conditions; proportion of population below $1 a day; severely materially deprived persons; ratio of share in national income of highest to lowest quintile; number of households heavily in debt' population with low incomes	UNCSD, Eurostat, OECD	Yes	B&H Ministry for Foreign Trade and Economic Relations
	Distribution-income-labor status	Working poor	In work at-risk-of poverty rate	Eurostat, OECD	Yes	B&H Statisitics Agency
	Distribution-income-gender	Gender pay gap/gender income inequality	Persons at-risk-of-poverty after social transfers, by gender	Eurostat, OECD	Yes	B&H Statistics Agency

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH2. Consump-tion and income	Distribution-income-ethnicity	Pay equality by ethniticity		OECD	No	
	Distribution-income –age	Children in relatively low-income households	Pensioners in relative low-income households; at-risk-of-poverty rate; by age group; at-risk-of poverty rate of elderly people	Eurostat, OECD	Yes	B&H Statistics Agency
	Distribution-Income-Household type	At-risk-of-poverty rate by household type		Eurostat	Yes	B&H Statistics Agency
	Distribution-Income-Education	At-risk-of-poverty rate, by highest level of education attained		Eurostat	Yes	B&H Statistics Agency
	Distribution-Income-regional	Dispersion of regional GDP per inhabitant		Eurostat	No	
	Subjective	Satisfaction with material/financial situation	Satisfaction with income inequality; attitude towards development assistance	OECD	Yes	B&H Statistics Agency

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH3. Nutrition	Obesity	Proportion of obese people	Childhood obesity	Eurostat, UNECE, OECD	Yes	WHO through the B&H National Focal point in the Republika of Srpska Ministry of Health
	Malnutrition	Nutritional status of children	Consumption of certain foodstuffs per inhabitant; proportion of people consuming a healthy diet	UNECE	Yes	WHO through the B&H National Focal point in the Republika of Srpska Ministry of Health
TH4: Health	Life expectancy	Life expectancy at birth	Life expectancy at age 65	UNCSD, Eurostat, OECD	Yes	WHO and B&H Statistics Agency
	Healthy life expectancy	Healthy life expectancy at birth	Healthy life expectancy at age 65	UNCSD, Eurostat, OECD	Yes	WHO

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH4: Health	Mental Health	Suicide death rate	Prevalence of psychological distress, mental well-being	UNCSD, Eurostat, OECD	Yes	B&H Statistics Agency
	Health expenditures	Health expenditures	Expenditures on care for the elderly	Eurostat, OECD	Yes	WHO
	Health care facilities	Percent of population with access to primary health care facilities	Unmet healthcare needs; available hospital admissions	UNCSD, OECD	Yes	WHO
	Contraception	Contraceptive prevalence rate		UNCSD	Yes	World Bank
	Immunization	Immunization against infectious childhood disease		UNCSD	Yes	WHO
	Mortality	Under-five mortality rate		UNCSD, OECD	Yes	WHO
	Circulatory diseases	Death rates from circulatory disease		OECD	Yes	B&H Statistics Agency
	Cancer	Death rates from cancer		OECD	Yes	B&H Statistics Agency

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH4: Health	Chronic diseases	Death rate due to chronic diseases, by gender		Eurostat	possibly	B&H Statistics Agency collects data on death types this could be extracted
	HIV/malaria	Morbidity of major diseases such as HIV/AIDs, malaria, tuberculosis		UNCSD	Yes	B&H Statistics Agency
	Road accidents	People killed in road accidents		EUROSTAT	Yes	BHAMK and Ministries and Directorates for Roadways
	Work related ailments	Serious accidents at work	Occupational diseases	Eurostat, OECD	No	
	Smoking	Smoking prevalence		UNCSD	Yes	WHO
	Drinking water	Population with drinking water supply meeting standards		UNCSD, Eurostat	Yes	World Bank
	Sanitation	Proportion of population using an improved sanitation facility	Population connected to urban waste water treatment with at least secondary treatment	UNCSD, Eurostat	Yes	World Bank

(table continues)

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH4: Health	Lifestyle/Exercise	Prevalence of healthy lifestyles	Health-relevant behavior; physical exercise	OSCE	No	
	Distribution – Health	Self-reported met need for medical examination or treatment, by income quintile	Suicide death rate, total by age group	Eurostat	Yes	B&H Statistics Agency
	Subjective	Perceived health	OECD		Yes	B&H Statistics Agency
TH5: Labor	Employment	Employment rate	Employment rate, participation rate, disability pensioners and persons receive work assessment allowance as a percentage of the population	UNCSD, Eurostat, OECD	Yes	B&H Statistics Agency
	Labor force	Labor force		OECD	Yes	B&H Statistics Agency
	Hours worked			OECD	Yes	B&H Statistics Agency
	Under employment	Unemployment rate	Long-term unemployment rate; under-employment rate; vulnerable employment	UNCSD, Eurostat, OECD	Yes	B&H Statistics Agency and Entity Employment Bureaus

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
	Retirement	Average exit age from the labor market	Dependency ration; aggregate replacement ratio	UNCSD, Eurostat, OECD	Yes	Entity Pension Funds
	Unpaid work	Formal paid work outside the home		OECD	Yes	B&H Statistics Agency asks the question in their Labor Force Survey instrument but do not report on it
TH5: Labor	Brain drain			OECD	No	
	Other	All-day care provision for children		OECD	No	
	Distribution-Labor-Gender	Employment rate, by gender	Share of women in wage employment in the non-agricultural sector; unemployment rate, by gender; professional position by gender	UNCS, Eurostat, OECD	Yes	B&H Statistics Agency
	Distribution-Labor-Age	Youth Employment rate	Employment rate of older workers. Unemployment rate by age group, Senior citizens' employment rate	EUROSTAT, OECD	Yes	B&H Statistics Agency

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH5: Labor	Distribution-education	Employment rate, by highest level of education attained		EUROSTAT	Yes	B&H Statistics Agency
	Distribution-region	Dispersion of regional employment rates, by gender		Eurostat	Yes	B&H Statistics Agency where regions are considered to be the Federation, RS and Brcko
	Distribution-overall	Population living in workless households; children	Population living in workless households: working age; Persons living in households with very low work intensity	UNCSD, Eurostat, OECD	Yes	Can be extracted from Labor Force Survey from B&H Statistics Agency
TH 6: Education	Education attainment	Educational attainment level of adults		UNCSD, OECD	Yes	B&H Statistics Agency
	Education expenditures	Education expenditures		Eurostat, OECD	Yes	World Bank & government budgets

(table continues)

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH 6: Education	Basic competencies	Maths skills	Adult literacy rate; reading skills of 15 year-olds	UNCSD, Eurostat, OECD	No	the TIMSS assessment was completed once and has not been repeated
	Participation in education	25 year-old university graduates	Gross intake ration to last grade of primary education, net enrolment rate in primary education; participation in tertiary education; early school-leavers; education level of young people; access to early childhood education	UNCSD, Eurostat, OECD	Yes	B&H Statisitics Agency
	Lifelong learning	Lifelong learning		UNCSD, Eurostat, OECD	Yes	B&H Statistics Agency
	Knowledge of SD	Barometer of knowledge by households of the notion of sustainable development		OECD	No	

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH 6: Education	Distribution-Education	Early school leavers by citizenship	Foreign school leavers with a school leaving certificate; reading skills of 15-year olds by socioeconomic background; persons with low educational attainment, by age group; proportion of higher diplomas among the 25-34 age group and comparison with the 25-64 age group	Eurostat, OECD	Yes	Can be extracted from Labor Force Survey from B&H Statistics Agency
	Subjective-educational attainment	Satisfaction with own education		OECD	No	
TH7: Housing	Housing stock	Housing/dwelling stock			No	
	Housing density	Average density of new housing			No	

(table continues)

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Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH7: Housing	Investments in housing	Increase in land use housing and transport		OECD	No	
	Quality of housing	Living without housing deprivation	Vulnerable households in private sector in homes below the decent homes standard, Social sector housing	OECD	No	
	Slums/rough sleepers	Number of rough sleepers	No. of households in temporary accommodation	OECD	No	
	Neighborhood	Problems in neighborhood		OECD	No	
	Housing affordability	Housing affordability		OECD	No	
	Housing costs	Housing costs	Total share of housing costs; average monthly rent	OECD	No	
	House price	Average house price		OECD	No	
	Distribution housing	Distribution-housing		OECD	No	
	Subjective-quality of housing	Satisfaction with housing	Not enough space	OECD	No	
	Subjective-affordability	Perceived housing costs		OECD	No	

(table continues)

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH7: Housing	Subjective-neighborhood	Satisfaction with residential environment		OECD	No	
TH8: Leisure	Time Use	Leisure Time		OECD	No	
	Subjective	Satisfaction with leisure time		OECD	No	
TH9: Physical safety	Crime	Deaths from assault/homicide rate	Violent crime, crime survey and record crime for vehicles, crime survey and record crime for domestic burglary; crime survey and record crime for robbery; reported crime, registered crime	UNCSD, OECD	Yes	B&H Statistic Agency
	Suspects/prisoners	Underage suspects	Number of prisoners	OECD	Yes	Entity Statistic Agencies
	Safety expenditures	Safety expenditures		OECD	Yes	Not reported anywhere specifically but can be extracted and calculated from the government budgets

(table continues)

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH9: Physical safety	Police	Number of police officers		OECD	Yes	Not reported anywhere specifically but can be extracted and calculated from the government budgets
	Natural hazards	Human and economic loss due to natural disasters	Flooding; percentage of population living in hazard prone areas	UNCSD, OECD	No	
	Subjective-trust	Trust in the police	Trust in the justice system	UNSCD, OSCE	No	
	Subjective-crime	Not feeling safe	Impact of fear of crime on quality of life, fear of crime, car theft, burglary, physical attach, fear of terrorist attacks	OSCE	No	
TH10: Land and ecosystem	Land	Population density		OSCE	No	Not reported on but will be available from census

(table continues)

	Land use	Land use change	Area of land used for farming; built-up areas; land use for settlement; area covered by agriculture, woodland, water or river, urban; livestock density index; new dwellings built on previously developed land; irreversible losses of biologically productive areas; arable and permanent cropland area	UNSCD, Eurostat, OECD	No	The B&H Statistic Agency plans to introduce a new survey instrument that may collect this data, the EU Land Survey
TH10: Land and ecosystem	Organic farming	Organic farming	Area for agri-envrionmental commitment	UNCSD, Eurostat, OECD	No	Could be obtained from Organska Kontrola and farmer registration system
	Protected areas	Proportion of terrestrial area protected, total and by ecological region	Nature resources, state of preservation; management effectiveness of protected areas; sufficiency of sites designated under the EU Habitats directive; Land covered by environmental schemes; area of native land cover	UNCSD, Eurostat, OECD	World Bank	
	Landscape quality	Landscape fragmentation	Landscape quality	OECD	No	

(table continues)

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH10: Land and ecosystem	Soil quality	Nitrogen surplus and phosphorous surplus	Contaminated soil sites; soil health; land degradation; land affected by desertification; changes in soil artificialisation; versatile soil extinction; area of sensitive habitats exceeding critical loads for acidification and eutrophication, hill country erosion	UNCSD, OECD	Yes	EU completes regular survey of soils and B&H is included
	Emission to soil	Use of pesticides	Fertilizer use efficiency	UNCSD, OECD	No	
	Terrestrial ecosystem	Bird index	Priority species status; priority habitat status; abundance of selected key species; species diversity; distribution of selected native species; area of selected key ecosystems; distribution of selected pest animal and weed species; abundance of invasive alien species; fragmentation of habitats	UNCSD, Eurostat, OECD	No	

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH10: Land and ecosystem	Threatened species	Number of threatened species	Change in threat status of species; population Red List species; population not Red List species	UNCSD, OECD	No	
	Forests	Proportion of land area covered by forests	Percent of forest trees damaged by foliation; area of forest under sustainable forest management; forest increment and felling; deadwood; ecological quality of forests	UNCSD, Eurostat, OECD	FAO	
	Aquatic /Marine Ecosystems	Proportion of fish stocks within safe biological limits	Fish catches taken on stocks outside safe biological limits, size of fishing fleet; area of coral reef ecosystems and percentage live cover; proportion of catches at EU level only based on the state of fishery stocks; proportion of assessed fish stocks below target levels; Nature index; ocean and coastal ecosystems; Natural Index. Inland waters and ecosystems	UNCSD; Eurostat; OECD	No	

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH10: Land and ecosystem	Footprint	ecological footprint	Land use as a result of consumption/land footprint	OECD	No	Could be calculated
	Subjective	Satisfaction with green areas		OECD	No	
TH11: Water	Resources	Water resources			Yes	FAO
	Abstraction	Surface-and groundwater abstraction		Eurostat, OECD	Yes	Acquastat and FAO
	Consumption	Proportion of total water resources used	Liters per person per day	UNCSD, OECD	Yes	UNDP: MDG indicators
	Allocation	Water allocation compared with total water resource		OECD: NZL	No	
	Intensity	Water use intensity		UNSCD	No	
	Wastewater treatment	Wastewater treatment		UNSCD	Yes	B&H Statistics Agency
	Water quality	Presence of faucal coliforms in freshwater	Biochemical oxygen demand in water bodies, ; bathing water quality ,marine trophic index; biochemical oxygen demand in rivers; nitrate content in groundwater, phosphorous content in selected lakes;	UNSCD, Eurostat, OECD	Yes	Government water agencies

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH11: Water	Water quality	Presence of faucal coliforms in freshwater	synthetic indicator of surface water quality;quality of surface water; nitrogen in rivers and stream' biological health of rivers and streams, lake water quality, groundwater quality, bacterial pollution at coastal swimming spots, rivers and lakes; rivers of good biological quality, rivers of good chemical quality	UNSCD, Eurostat, OECD	Yes	Government water agencies
	Emissions to water	Emissions to water			No	
	Water stress	Water stress		OECD: GBR	No	
	Footprint	Water footprint			No	Can be calculated
TH12: Air quality	General air pollution	Ambient concentration of air pollutants in urban areas	Index of production of toxic chemicals; air pollution; assessment of local environmental quality	UNCSD, Eurostat, OECD	Yes	Entity Meteorological Agencies
	PM concentration	Particulate matter concentration	Urban population exposure to air pollution by particulate matter	Eurostat, OECD	Yes	World Bank
	PM emissions	Emissions of particulate matter by source sector	Urban population exposure to air pollution by particulate matter	Eurostat, OECD	No	

(table continues)

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH12: Air quality	Ozone concentration	Urban population exposure to air pollution by ozone		Eurostat, OECD: GBR	Yes	Eurostat
	Emissions of ozone precursors	Emission of ozone precursors by source sector		Eurostat	Yes	European Environmental Agency
	Acidifying emissions	Emissions of acidifying substances by source sector	Emission of NOx, Emission of NH3, Emissions of SO2	Eurostat, OECD	Yes	European Environmental Agency
	Distribution	Environmental quality		OECD	No	
	Noise	Proportion of population living in household complaining that they suffer from noise	Persons affected by noise	Eurostat, OECD	No	
TH13: Climate	Stat of the climate	Global surface average temperature		Eurostat, OECD	No	Can be calculated
	Historical Co2 emissions	Historical Co2 emissions		OECD	Yes	World Bank
	CO2 emission	Carbon dioxide emissions		UNCSD, OECD	Yes	World Bank
	CO2 intensity	Co2 intensity		OECD	No	

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH13: Climate	GHG emissions	Greenhouse gas emissions	Energy-related greenhouse gas emissions	UNCSD, Eurostat, OECD	Yes	UNECE
	GHG intensity	Greenhouse gas emission intensity of energy consumption	Greenhouse gas intensity of the economy	Eurostat, OECD	No	
	State of the ozone layer	Ozone concentration		OECD	No	
	Ozone depleting emissions	Ozone depleting emission		UNCSD	No	
	Footprint	Carbon footprint of the final national demand		OECD	No	
	Carbon trade balance	Emission trade balance		OECD	No	
TH14: Energy resources	Resources	Energy resources		OECD	Yes	B&H Statistics Agency
	Production	Depletion of energy resources/production		OECD	Yes	US Energy Information Agency
	Supply	Primary energy supply		OECD	Yes	US Energy Information Agency

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH14: Energy resources	Consumption	Energy consumption	Electricity consumption of households; energy consumption in the residential-service sector	Eurostat, OECD	Yes	US Energy Information Agency
	Expenditures	Household expenditure n energy used in the home		OECD	Yes	B&H Statistics Agency
	Intensity/produ ctivity	Energy intensity	Energy productivity	UNCSD, Eurostat, OECD	Yes	US Energy Information Agency
	Renewable energy	Share of renewable energy	Share of renewable electricity	UNCSD, Eurostat, OECD	Yes	International Energy Agency
	Heat/Power	Combined heat and power generation		Eurostat	No	
	Tax	Implicit tax rate on energy		Eurostat	Yes	Noted in electricity bill
	Imports	Imports of energy	Imports of energy from LDCs	OECD	Yes	US Energy Information Agency
	Energy dependency	Energy dependency		UNCSD, Eurostat, OECD	No	Can be calculated

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH14: Energy resources	Distribution	Households living in fuel poverty containing pensioners	Households living in fuel poverty containing children, households living in fuel poverty containing disabled/long-term sick; share of households without electricity or other modern energy services, percentage of population using solid fuels for cooking	UNCSD, OECD	No	
TH15: Non-energy resources	Resources	Non-energy resources			No	Not reported on in a single place
	Extraction	Extraction			No	Not reported in a single place
	Consumption	Domestic material consumption	Total material requirement	UNCSD,Euro stat, OECD	No	
	Intensity/Produ ctivity	Material intensity of economy	Resources productivity	UNCSD,Euro stat, OECD	No	
	Waste	Generation of waste	Non-mineral waste generation, generation of waste, waste treatment and disposal, household waste	UNCSD,Euro stat, OECD	Yes	B&H Statistics Agency
	Hazardous waste	Generation of hazardous waste	Management of radioactive waste; nuclear waste	UNCSD,Euro stat, OECD	Partia lly	Limited data from UN statistics

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH15: Non-energy resources	Landfill		Solid waste disposal of to landfill	OECD	Yes	B&H Statistics Agency
	Recycling	Waster recycling rate	Proportion of population with access to curbside recycling, proportion of packing waste recycled; household waster recycled or composted	OECD	No	
	Imports	Material requirements aboard for imports to Switzerland	Imports of minerals, imports of biomass, imports of minerals from LDCS, imports of biomass from LDCs	OECD	No	
TH16: Trust	Generalized trust	Generalized trust		OECD	No	
	Bridging social capital	Feelings of discrimination	Opinions about immigrants	OECD	No	
	Family/Friends	Contact with family/friends	Satisfaction with family life	OECD	No	
	Voluntary work	Voluntary work	Participation in associative life	OECD	No	
	Culture	Own cultural activities	Participation in cultural activities	OECD	No	
	Language	Children attending Maori language immersion schools	Speakers of the reo Maori, Local content in New Zealand television; regular use of a second national language	OECD	No	

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH16: Trust	Monuments	Number of historic places	Trends in standard of maintenance of protected buildings	OECD	No	
TH17: Institution	Voter turnout	Voter turnout in election		Eurostat, OECD	Yes	B&H Election Supervision committee
	Trust in institutions	Trust in government institutions	Level of citizens confidence in EU institutions	Eurostat, OECD	Yes	Institution for Democracy and Electoral Assistance
	Corruption	Percentage of population having paid bribes		UNCSD	Yes	Transparency International
	International institutions	Multilateral treaties		OECD	No	
	Law	New infringement cases	Transposition of Community law, by policy area	Eurostat	No	
	E-government	E-government on-line availability	E-government usage by individuals	Eurostat	No	
	Social justice	Social justice		OECD	No	
	Distribution – services	Access to key services		OECD	No	
	Distribution-Institutions-Gender	Women in the national council		OECD	No	

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH17: Institution	Global social capital	International institutions			No	
TH18: Physical capital	Capital stock	Capital stock		OECD	No	
	Investment formation	Gross fixed capital	Social investments	UNCSD, Eurostat, OECD	Yes	B&H Statistics Agency
	ICT	ICT expenditures	Internet users, mobile cellular telephone users, fixed phone lines	UNCSD,OECD	No	
	Distribution-income	Internet use by income group		OECD	Yes	World Bank
	Infrastructure	Real net stock of infrastructure per person		OECD	No	
	Export	Exports of physical capital			Yes	B&H Foreign Trade Chamber and Indirect Taxation Agency
TH19: Know-ledge capital	Capital stock	R&D capital stock		OECD	No	
	Investment	Total R&D expenditures		UNCSD, OECD	Yes	World Bank
	Innovation	Turnover from innovation	Rate of innovation by type	Eurostat, OECD	No	
	Patents	Patent applications		OECD	Yes	B&H Intellectual Property Rights Agency

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH19: Know-ledge capital	Scientific articles	Scientific articles		OECD	No	
	R&D personnel	Personnel involved in research and development	Human resources in science and technology	OECD	No	
	Knowledge spillovers	Knowledge networks		OECD	No	
	Exports of knowledge capital	Exports of knowledge capital			No	
TH20: Financial capital	Net assets/liabilities	Net foreign assets/liabilities		OECD	Yes	Central Bank
	Debt	General government debt	Debt to GNI ration; Indebtedness of businesses and households; Generational accounts; Need to tighten pubic sector finance as a share of GDP; Ratio of debt services to export earnings	UNCSD, Eurostat, OECD	Yes	Central Bank
	Deficit/Surplus	Current account deficit as percentage of GDP		UNCSD, OECD	Yes	Central Bank

(continued)

Theme	Sub-theme	Most common indicator	Other indicators used	Institution	Data in B&H	Comments
TH20: Financial capital	FDI	Foreign direct investment in developing countries, by income group		UNCSD, Eurostat, OECD	Yes	Cental Bank
	Taxes	Public sector fiscal revenue rate		OECD	Yes	State and Entity Tax authorities
	Pensions	Pension entitlements	Pension expenditure; Proportion of working age people contributing to a non-stat pension in at least three years out of the last four	Eurostat, OECD	Yes	Entity Pension Funds

Appendix F: Quantitative Assessment Survey Instrument

Questions for State level – Ministry of Foreign Trade and Economic Relations

1)   Are there plans to implement and adopt a State environmental law?

2)   Would this law include the requirement to establish an Environmental strategy at the State Level?

3)   Without a strategy how are you defining your goals and activities?

4)   How are NGOs and the public involved in policy implementation?

5)   Are there plans to establish a State Environmental Agency?

6)   If there is no Agency - will the inter-entity committee be formalized?

7)   Is data being collected on the environment? Specify are all of the Agencies for water, air, etc in place to collect data?

8)   Do you have a database?

9)   Are reports from the data collected made available regularly to management? How?

10)   Does the Ministry have enough staff and are staff skilled:

(i)   to monitor the implementation of international agreements? Is their capability within the Ministry to analyze and report on these results?

(ii)   to analyze the impact of energy and transport on the environment?

(iii)   to develop tools for sustainable production and to encourage technology transfer, to analyze relationships between trade and environment?

(iv)   to monitor the implementation of policies?

(v)   to monitor SO_2 emissions?

(vi)   to complete environmental assessments?

11)   Is the physical infrastructure in place for policy development, monitoring of environment?

12)   Are adequate funds allocated to allow for the policy implementation?

13)   Does the public have information about your reporting – like annual reports, reports on data collected? How is this information made available to the public?

14)   Are you undertaking any activities to increase awareness about the environment to the general public?: example in the areas of energy efficiency, energy consumption?

15) Integration of environment and coordination with other Ministries:

(i)   As trade is in MOFTER do you coordinate with this department to ensure that trade agreements do not negatively affect the environment? If so how is this formalized?

(ii)   How do you coordinate with other departments like the department responsible for SMEs, energy?

(iii)   How do you coordinate with the Entities? How is this formalized? In what areas do you coordinate: collection of indicators? Implementation of policy? Regulatory harmonization?

Entity Questions:

Policy formulation and development

16) Do you have a strategy for the environment in place? If yes, how would you evaluate the strategy?

17) Are NGOs and the general public involved in the development of the strategy? If yes how is this done?

18) Are there plans for NGOs and scientific stakeholders to be a part of the Entity Environmental Funds – to sit n the supervisory boards?

Legislation
19) Please state which national/entity legislation governs the work of your institution (please list all the relevant laws and regulations)?

20) Please state which national/entity legislation is not harmonized/partially harmonized with EU legislation (ex: environmental law, environmental regulatory acts/EU directives) ?

Title of the legislation in your country	EU regulation with which it has to be harmonized	Fully harmonized (X)	Not harmonized (X)	Partially harmonized and provide a reason why

21) Are there some missing regulatory documents in your national/entity legislation regulating environment in your country/entity which need to be developed in order to

facilitate sustainable resource use, waste management and other environmental concerns as stipulated by the EU regulation ? If yes, please list /name and provide explanation.

22) As legislation is being drafted is it aligned with the EU acquis?

23) Have representatives of your Ministry/Agency ever been involved in the development of laws and regulations and in the review of implementation mechanisms concerning environment in your country/entity?

24) Are there plans to develop and strengthen legislation for water, air, nature protection and waste management?

Institutional capacity

25) Is the Ministry capable of developing legislation for environmental assessments?

26) Please list institutions/bodies/agencies under the competence line to this Ministry/your institutions; what are their main roles and responsibilities?

27) If regulations are in place please explain what is preventing implementation? Human skills, physical resources, financial resources?

28) Are there sufficient physical and technical resources in place to allow for implementation of policies?

29) Are there sufficient funds allocated from the budget to allow for implementation of policies?

30) When it comes to policy are there plans to develop new economic instruments. If yes what is holding this back? Human skills to develop them, lack of financial resources?

31) Is the RS planning to introduce environmental assessment – what is holding you back: (i) lack of staff (ii) staff that do not has these skills and require further training?

32) Data management system:

   a. Do you have a database?

   b. Is data collected from different agencies – ie agency for water?

   c. Is data analyzed and reported to management for policy development

33) Human Resources – do have staff have the skills to:

   a. Analyze the impact of energy and transport on the environment?

   b. Develop tools for sustainable production?

    c.   Develop tools to encourage technology transfer, to analyze relationships between trade and environment?

    d.   Develop strategies?

    e.   Does your Ministry staff have adequate skills to monitor implementation of policies?

    f.   Draft legislation aligned to the EQ acquis?

34) How do you share information with the general public about your sustainable development activities and what information is shared?

35) Are you undertaking public awareness and training activities to improve public knowledge about energy efficiency and energy consumption?

36) Coordination and integration:

    i.   Do other Ministries have departments for environment to integrate environment elements into their sectors? How do you coordinate with these Ministries especially Ministry for Industry, Tourism, Energy and SMEs? What formal mechanisms are in place to ensure coordination is in place in policy implementation and ensuring that their policies do not negatively impact the environment?

    ii.   In the Federation how do you coordinate with the cantonal ministries for environment to ensure there is no duplication of efforts? Do they share their policies with you? Do you know what all of their subsidy programs are about? Are there regular coordination meetings? If there is any coordination how is this formalized

    iii.   How is coordination with the State undertaken in what areas and how is this formalized?

    iv.   Have representatives from your ministry/agency ever been invited to participate in negotiations on environmental concerns regarding energy consumption, transport and industry issues?

    v.   Have you actively contributed to the assessment/incorporation of environmental issues in the process of policy/strategy development by other Ministries (energy, transport, industry)?