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MINISTRY OF SUSTAINABLE DEVELOPMENT
AND TOURISM

The Fifth National Report

to the United Nations Convention on Biological Diversity

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Basic information

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GEF Political Focal Point	**H. E. Branimir Gvozdenović,** Ministry of Sustainable Development and Tourism
CBD Focal Point	**Ana Pavićević,** PhD, Ministry of Sustainable Development and Tourism

Contributors:

Ms. Milena Bataković, Environmental Protection Agency

Ms. Ruža Ćirović, Environmental Protection Agency

Mr. Dragan Roganović, Environmental Protection Agency

Ms. Nela Vešović Dubak, Public Enterprise for National Parks

Mr. Miloš Janković, Ministry of Agriculture and Rural Development

Ms. Marija Vugdelić, Independent consultant

Mr. Borko Vulikić, Centre for Sustainable Development / UNDP

Ms. Jovana Jovović, Centre for Sustainable Development / UNDP

For the MSDT and UNDP, compilation of inputs, editing and report drafting performed by Marina Markovic, independent environmental consultant

Contents

List of boxes

List of figures

List of tables

1 Executive Summary

Importance of biodiversity; status, trends, and threats, and their implications for human wellbeing

The territory of Montenegro falls within two basic bio-geographical regions (Mediterranean and Alpine). In relation to a small surface of 13,812 km^2, it encompasses a wide range of ecosystems and habitat types. Numerous areas of international importance with rare, endemic and endangered species have been identified in the country, including 13 Important Bird Areas (plus 7 potential areas) and 22 Important Plant Areas. Specific agro-biodiversity of the country also represents an important quality.

On the global level, Montenegro is one of the biodiversity "hot spots" in the Mediterranean. Together with mountainous region of Bulgaria, Montenegrin territory is one of the 153 globally significant floristic biodiversity centres. Mountain areas of Lovćen and Prokletije stand out as herpetofauna "hot spots". Nationally protected areas (PAs) cover close to 125,000 ha or 9.05% of the entire territory.

Biodiversity and ecosystem services contribute to socio-economic development and human wellbeing in numerous ways. In Montenegro, they are important factors for preservation of water abundance and quality, protection from natural hazards such as flooding and erosion, and climate regulation. At the same time, they are contributing to food production (fishing, collection of edible wild species, soil fertility, agro-biodiversity) and play an important role in providing recreational services and in maintaining attractiveness of the country, both of which are significant for tourism development. Serving as a source of additional income and by supporting traditional economic activities of rural population, biodiversity is also important for livelihoods of a number of local communities in the country. Some examples and figures illustrating the importance of biodiversity include the following:

- Around 1.4 million tourists have visited Montenegro in 2012 when total tourism revenues reached € 700 million; it is estimated that tourism generated (directly or indirectly) between 17 and 23% of GDP that during the past few years.
- 60% of Montenegrin territory is covered with forests and there are plans to intensify their economic use in the future; fuel wood accounted for some 4.5% of the gross inland energy consumption in 2010.
- More than 98,000 persons work on agricultural holdings in the country; for these people, agriculture is either a basic or additional occupation/ source of income.
- Skadarsko Lake is one of the largest reserves of peat in Europe and represents an important carbon sink.
- Total country-wide damages and losses caused by December 2010 flooding (one of the most severe floods in recent years) exceeded € 41 million; the floods mainly impacted rural areas.

Valuation of ecosystem services and integration of real costs of using biodiversity in decision making (resource management, development plans) is rare. Value of services provided by protected areas in 2010 have been estimated at € 68 million (around 2.2% of GDP or € 106 *per capita*), which is not reciprocated in the financial allocations for protected areas management. The baseline value of selected biodiversity and ecosystem services to the Montenegrin economy is estimated at € 982 million (table 1). Provisioning services (wild foods and fodder, wood-based biomass and energy) contribute an estimated € 169 million or 17%, regulating and maintenance services (on-farm soil fertility and pollination, watershed

and coastal protection, carbon sequestration) € 276 million or 28%, and cultural services (landscape and nature-based recreation) € 537 million or 55%. The total value exceeded gross output of agriculture, forestry and fisheries sector (amounting to € 425 million in 2011) by 2.3 times.

Table 1: Baseline 2011 economic value of biodiversity and ecosystem services

Ecosystem service	Baseline value (€ mill)
Wild foods & fodder	114.42
Wood-based biomass & energy	54.39
Pollination & seed dispersal	28.69
Maintenance of on-farm soil structure & fertility	0.41
Watershed protection	47.81
Coastal protection	1.34
Carbon sequestration	197.50
Landscape & nature-based recreation	537.28
Total	**981.83**

Assessment of the state and biodiversity trends is not straight forward due to short time span of monitoring programmes and their limited (and diminishing) scope. The key problems in planning and executing annual monitoring programmes included lack of baseline data for certain areas, habitats and species, insufficient coverage due to financial restrictions, and insufficient human resources (limited number of experts for some species groups).

Overall, the state of biodiversity can be described as satisfactory, with some reasons for concern. There were no proclamation of new protected areas since 2010, even though there are on-going efforts to improve representativeness and extend coverage of the PA system. Trends in indicator species include both downward movements and some encouraging signs of populations' growth. Downward trend was recorded for certain plant species, a number of bird species, amphibians and a zooplankton community from Skadarsko Lake. There are also indications of a declining trend (and extinction of certain varieties) in endemic agro-biodiversity due to abandonment of traditional land use practices.

Variety and magnitude of pressures continued from the previous period leading to obvious habitat degradation and loss of species' abundance at certain locations, including some internationally important sites such as Bojana River Delta (including Long Beach), Skadar Lake, Ljubišnja Mountain and others. The main pressures include: a) accelerated urbanisation, primarily in the narrow costal belt, across the central plain area and around the system of natural lakes; b) increased illegal construction and development in and around protected areas, in a major part of the coastal region and around mountain resorts; c) pollution of watercourses from urban and industrial sources (e.g. untreated wastewater) and agricultural run-off; reduction of wetland areas and modifications of water bodies; d) examples of overexploitation of forests, materials from river courses, fisheries and other natural resources, including illegal logging, extraction, hunting and fishing: and e) land use changes (including conversion of agricultural land into built areas, abandonment of traditional land use practices – grazing and haying – leading to a loss of biodiversity rich upland pastures, and similar). The economic crisis and its consequences affected implementation of measures to reduce direct pressures on biodiversity in a negative way.

Coastal habitats, forest and freshwater ecosystems are exposed to the strongest pressures and most of the examples of biodiversity degradation are linked to those. Most pressures

are manifested in the form of habitat change and overexploitation. Different sources of pollution also generated strong pressures on the most affected biodiversity components, in particular on freshwater and marine ecosystems. Pressures from invasive species and climate change are still not playing an important role, however these are the areas where much more research is needed to understand better impacts and potential threats. It should be noted that incidence of forest fires correlates fully with peaks in mean monthly temperatures and dry periods. In 2011, close to 7% of the total area under forests was affected by fires.

Underlying causes (indirect drivers) of declining biodiversity are linked to various economic activities and management/ governance weaknesses. Tourism, construction and forestry are the main economic sectors affecting negative biodiversity changes recorded in Montenegro, followed by agriculture, transport and industry.

Control of urbanisation and related infrastructural development is a top priority for addressing root causes of biodiversity loss in Montenegro. Improvements in forest and water resources management are also necessary. Inadequate enforcement of hunting and fishing regulations is another significant source of pressures, and the same applies to weaknesses in the management of protected areas (including insufficient funding, technical and human capacities). Less than a fifth (18%) of collected urban wastewater is currently being treated before discharge into natural recipient, while just around 40% of generated municipal waste is disposed to regulated landfills.

On a more general level, one of the main underlying causes of direct pressures on biodiversity and one of the key reasons for insufficient progress in implementing measures to address them leis in a low awareness at all levels (from decision makers to citizens) and related low priority assigned to biodiversity protection. Lack of data and sound approaches to decision making and insufficient level of coordination and cooperation among various sectors/ parts of administration also fall in the category of deeper causes of negative biodiversity trends in Montenegro.

So far, there were no attempts to systematically assess impacts of declining biodiversity on ecosystem services and evaluate these in economic terms. However, some expert judgements and anecdotal evidence is available testifying that declining biodiversity has already had an impact on the provision of ecosystem services and related socio-economic and cultural benefits, and that potential losses in the future could be significant. Declining biodiversity and ecosystem services, should such trends prevail, are likely to seriously diminish prospects of achieving Montenegro's long-term goals of smart, sustainable and equitable development.

Implementation of the NBSAP and the mainstreaming of biodiversity

The NBSAP goals of expanding the PA system to 10% for terrestrial and protecting 10% of marine and coastal ecosystems will be updated with a view to international (such as the CBD goals for 2020) and EU obligations. The on-going process of updating the 2010 NBSAP (expected to be completed by the end of 2014) will enable full integration of the Aichi Biodiversity Targets into national strategic framework and alignment with the Strategic Plan for Biodiversity 2011-2020.

By adapting Aichi targets to the national context, a total of 17 national objectives have been proposed in the recent (December 2013) pre-consultation draft of the revised BSAP. Revised BSAP is strongly focused on the importance of ecosystems and services they provide for sustainable economic development, as well as on the use of adequate incentives for attainment of biodiversity goals

Mainstreaming of biodiversity, which was one of the central themes of 2010 BSAP, continues to have an important place in the revised document. The success in mainstreaming biodiversity since the adoption of the first BSAP has been moderate, and the revised BSAP relies on a range of measures to ensure mainstreaming. They include mapping and estimation of biodiversity/ ecosystems values on the national level and for priority sectors, adjustment of the system of national accounts to allow for integration of biodiversity values into measures of economic success (such as GDP), improvements in inter-sectoral coordination (through establishment of a multi-sectoral working group or committee to coordinate implementation of BSAP) and allocation of funds for biodiversity protection through sectoral budgets (budgets of ministries other than the environment one).

The actions taken during the past three years (2011 – 20013) to implement UNCBD on the national level can be roughly grouped into the following categories:

1. Improvements of the legal and institutional frameworks (development of capacities);
2. Identification and assessments of specific habitats to enable expansion of the protected areas system; and
3. Efforts to mainstream biodiversity and improve availability of baseline data to ensure adequate biodiversity protection measures are integrated in various sectoral plans and projects;

The least success with mainstreaming biodiversity was achieved in energy sector and spatial planning. Energy strategy (adopted document as well as the draft updated strategy) and spatial plans for development of large energy facilities have failed to provide for adequate assessment of important biodiversity in proposing specific energy development projects. This in particular refers to planned utilisation of hydropower. Similarly, detailed spatial plans in the coastal region have designated excessive construction areas without due considerations of the impacts future intense urbanisation could have on valuable coastal ecosystems.

Most progress with mainstreaming biodiversity has been made in tourism and forestry sectors, even though the progress is more visible on strategic than on the implementation level.

The main tools used for mainstreaming were strategic and project level impacts assessments (SEA and EIA). While an upward trend is evident in the quality of the assessments and related processes (including public participation), there is a number of weaknesses that reduce the potential these instruments have in providing for appropriate assessment of impacts and identification of adequate protection measures. The weaknesses are mainly related to the lack of data on biodiversity, low capacity of impact assessment practitioners and competent authorities, and failure to fully consider and integrate comments/ suggestions received from various stakeholders.

Linkages in the implementation of the three UN Conventions are evident and while there is certain level of exchange and cooperation, synergies between the three (and their potential to accelerate progress in implementation) are largely underutilised.

Action Plan of the National Biodiversity Strategy 2010 – 2015 contains 54 measures and activities grouped under seven themes corresponding with the key challenges identified in the process of BSAP drafting. Several BSAP measures are fully implemented after three years of implementation, while as for around one fifth of the total number of measures there was no progress whatsoever. Planned strengthening of biodiversity baselines and of the monitoring programme are some of the examples where there was either no progress or where achievements were rather modest.

For majority of measures, moderate progress was achieved. This includes progress with inventories of species (endemic, protected, invasive) and establishment of ecological network (Natura 2000), development of capacities for biodiversity protection and its sustainable

use, biodiversity action planning on local level, public participation in biodiversity related decision making, analysis and integration of climate change concerns etc. Implementation of several measures related to prevention and mitigation of pressures on ecosystems has also been assessed as moderately successful (including activities to combat illegal forestry activities, research of forest habitats, effectiveness of SEA and EIA etc.). The same applies to biodiversity mainstreaming where progress with implementation of close to 60% of planned activities was evaluated as moderate.

Satisfactory progress was achieved with development of the legal framework and alignment with the EU legislation (which is the country's top priority), as well as with some activities in forestry (e.g. protection of seed stands, GIS application etc.), identification of marine habitats significant for protection, efforts to develop eco-tourism and mainstream biodiversity in transport development plans (the latter more so in comparison with the previous period than in terms of overall success), preparations to proclaim new protected areas etc.

In relation to specific objectives formulated in the 2010 BSAP, substantial improvements have been achieved in the efforts to identify important biodiversity and protect all the biodiversity components (BSAP operational objective 1). Should the on-going activities be completed as planned, reaching (and exceeding) the target of 10% for terrestrial ecosystems is likely by 2015 (less so for 10% of coastal and marine ecosystems). Alignment with the EU legislation (operational objective 5) is another BSAP objective where significant progress was made, however implementation of new legislation remains weak.

Efforts to develop capacities have yielded some results regarding institutional arrangements and capabilities/ competences to implement policies (even though they are still on an insufficient level). Similarly, movements in the right direction were recorded in the areas of education and public participation. Nevertheless, much remains to be done to educate all the stakeholders and raise the level of awareness on the importance of biodiversity in Montenegro, as well as to create conditions for full and effective engagement of the public in decision making processes relevant for biodiversity management (objectives 6 and 7).

Limitations of biodiversity monitoring programmes (that is low availability of data series for given locations, habitats and species) make the assessment of progress with measures to eliminate/ mitigate pressures (objective 2) more difficult if not impossible. Nevertheless it can be said that governance weaknesses and strong pressures to accelerate economic growth (in the period after the 2009 recession and with growing poverty rates) hampered implementation of measures related to this objective and that pressures on biodiversity did not decrease significantly in recent years. Availability of indicators (objective 3) is also affected in a negative way by monitoring weaknesses. Funds for biodiversity protection have not risen during the past few years (as was envisaged under BSAP operational objective 4). This especially holds for allocation of revenues from public sources where biodiversity continues to receive low attention amidst tight budgetary restrictions and competing priorities.

Progress towards the 2015 and 2020 Biodiversity Targets

Implementation of the Strategic Plan for Biodiversity 2011-2020 is in an early stage in Montenegro. Aichi targets will only be integrated into the national policies once the revised BSAP is adopted. Due to weaknesses of the monitoring programme and low availability of data, quantified/ indicator based assessment of the progress made on Aichi targets is not possible at the moment. However, it is possible to say that substantial steps forward have been made in relation to Aichi targets 17 (participatory preparation and implementation of BSAPs), 11 (expansion of the PA system and its ecological representativeness) as well as

with targets 1 and 2 that refer, respectively, to raising awareness on biodiversity values and importance of its sustainable uses, and to integration of biodiversity into sectoral development plans on national and local levels.

National MDG7 objectives and targets are highly compatible with the UNCBD 2020 goals. Challenges the country will face in the efforts to maintain progress in implementing MDGs and especially in fulfilling the overall vision of the Strategic Plan 2011-2020 are substantial. Nevertheless, the attainment of both the MDG7 and the five biodiversity strategic goals is possible, especially in light of changes that will be brought due to EU accession. Identification and implementation of synergetic measures for the three UN Conventions can also contribute significantly to the overall progress. Ensuring that prerequisites for the full implementation of the revised BSAP are met (including increased funding, stronger capacities and higher political backing for the environment and nature protection agenda) is crucial.

The following can be singled out as the most important lessons learned in the process of implementing Convention on the national level so far:

- Improved knowledge and data on biodiversity and ecosystem services values can be a powerful argument for stepping up protection efforts and reaching set objectives; assessment of costs (actual and potential) resulting from biodiversity decline can be equally powerful.
- International cooperation and transfer of knowledge has played an important role in the progress made so far; their contribution in the future could and should be stronger.
- Much stronger coordination on the national level, mobilisation of all the stakeholders and utilisation of synergies is needed to achieve national and global strategic goals.
- New financing strategies and instruments are needed; by mainstreaming biodiversity into sectoral polices and plans, costs of biodiversity management can be spread more evenly and thus made more acceptable for decision makers.
- Stronger political support is necessary if more substantial progress is to be achieved in the coming period; linking biodiversity and EU accession objectives can be beneficial to that end.

2 Part I - An update on biodiversity status, trends, and threats, and their implications for human wellbeing

2.1 Importance of biodiversity in Montenegro

The territory of Montenegro falls within two basic bio-geographical regions (Mediterranean and Alpine). In relation to a small surface of 13,812 km^2, it encompasses a wide range of ecosystems and habitat types. According to the National Biodiversity Strategy and Action Plan (NBSAP, 2010), alpine, forest, dry grassland, freshwater and marine ecosystems are found in the country. Due to their specificity, habitat types and geological structures such as coastal habitats, karst, caves and canyons are also considered important for biodiversity protection in addition to the main ecosystems.

With some 3,250 plant species, floristic diversity of Montenegro is among the highest in the region. Country's S/A index[1] for vascular plants is 0.837 – the highest recorded value in all the European countries. A total of 223 endemic plant species and subspecies have been registered. Density index for the birds nesting in Montenegro is 0.557, which is well above the Balkans average of 0.435. Specific agro-biodiversity of the country also represents an important quality.

Numerous areas of international importance with rare, endemic and endangered species have been identified in the country (details in the box 2-1). Important Fungi Areas (IFA) have not been identified as research on identification of important fungi habitats has not been completed yet and information is missing.

Box 21: Overview of internationally important bird and plant areas

Important Bird Areas (IBA)

The basic list of identified and potential (marked with *) IBA include: Bojana River Delta, Rumija Mountain, Buljarica Bay, Skadarsko Lake, Plavsko Lake with flooding areas, Tivat Slatpans, Ćemovsko Filed, mountain range Prokletije, accumulation lakes Nikšić, Hajla Mountain, Biogradska gora, Durmitor, Cijevna canyon, Zeta river valley*, Kučke Mountains*, Visitor Mountains*, Komovi*, Golija*, Pivska Highland* and Ljubišnja Mountain*.

Important Plant Areas (IPA)

A total of 22 locations has been identified, including:

- Mountains and mountainous areas: Jerinja glava, Lukavica, Trebjesa, Starac, Bogićevica, Visitor, Hajla, Orjen, Lovćen, Rumija, Babji zub (Sinjajevina Mountain), Komovi, Durmitor and Biogradska gora
- Skadarsko Lake, Long Beach in Ulcinj, canyons of Piva, Tara, Komarnica, Mrtvica, Cijevna and Lim rivers

Source: National Biodiversity Strategy and Action Plan

On the global level, Montenegro is one of the biodiversity "hot spots" in the Mediterranean. Together with mountainous region of Bulgaria, Montenegrin territory is one of the 153 globally significant floristic biodiversity centres. Mountain areas of Lovćen and Prokletije stand out as herpetofauna "hot spots".

1 Logarithm of the number of species (log S) divided by the logarithm of surface (log A)

Nationally protected areas (PAs) cover close to 125,000 ha or 9.05% of the entire territory. According to the *Indicator Based Report* (Environmental Protection Agency, 2013), five national parks (NP) account for approximately 80% of the total PA system; the remaining 20% refers to more than 45 sites designated as monuments of nature, areas of special natural characteristics, and (general and specific) nature reserves[2]. Moreover, several sites hold important international designations. NP Durmitor is on the UNESCO's World Natural Heritage List since 1980 due to its exceptional universal values. Together with Tara River canyon (total surface of the NP and the canyon area is close to 183.000 ha) it is a part of UNESCO's network of Man & Biosphere (MAB) reserves since 1977. Kotorsko-Risanski Bay (15,000 ha) is also enlisted as the World's Natural and Cultural Heritage site. Ramsar sites include NP Skadarsko Lake[3] (20,000 ha) and Tivat Saltpans (150 ha).

A total of 307 plant, 111 fungi and 430 animal species is protected under national legislation. The number of protected species mainly reflects the level to which different groups have been researched and should not be necessarily interpreted as an indication of their diversity and significance. Numbers of protected species are provided in the table 2.1.

Table 2.1: Number of protected species per group

Group	Number of protected species	
Ferns and horsetails	2	species
Seed plants	272	species
Algae	6	species
Mosses	27	species
Fungi	111	Species
Corals	7	species
Sponges	9	species
Annelids	6	species
Echinoderms	6	species
Crustaceans	4	species
Arachnids	5	species
Insects	14	species
Molluscs	18	species
Fish	11	species
Amphibians	16	species
Reptiles	26	species
Birds	298	species
Mammals	10	species and all bats

Source: List of protected species, 2006

2 Comprehensive review of the protected areas system is needed as some of the sites, especially ones with designations other than national parks, may have lost (partly or entirely) specific characteristics that led to their protection in the first place.

3 As for future activities linked to Ramsar Convention, there are plans to expand the existing scope of the Ramsar site to the other part of Skadarsko Lake that was not covered at the time of original designation (in 1995). These plans are also part of the BIG WIN 2 initiative where an agreement between the governments of eight countries is expected on a large transboundary network of protected areas spreading throughout the important region of Dinaric Arc (countries including Albania, Bosnia and Herzegovina, Croatia, Kosovo (UNSCR 1244/99), Macedonia, Montenegro, Serbia and Slovenia).

Biodiversity and ecosystem services contribute to socio-economic development and human wellbeing in numerous ways. In Montenegro, they are important factors for preservation of water abundance and quality, protection from natural hazards such as flooding[4] and erosion, and climate regulation. At the same time, they are contributing to food production (fishing, collection of edible wild species, soil fertility, agro-biodiversity) and play an important role in providing recreational services and in maintaining attractiveness of the country, both of which are significant for tourism development. Serving as a source of additional income and by supporting traditional economic activities of rural population, biodiversity is also important for livelihoods of a number of local communities in the country. Moreover, ecosystems provide multiple benefits to human health and have important traditional and cultural values. The main direct and indirect benefits from biodiversity use in Montenegro are presented in the box 2-2.

Box 22: Some of the main uses of biodiversity in Montenegro

Direct uses/ benefits

- Food: wild plant and animal species are collected from their natural habitats for direct consumption, processing or sales. This primarily refers to fish, shellfish and other freshwater and marine organisms, as well as to wild fruits (berries and other forest fruits, chestnuts, wild pomegranate) and mushrooms. Many medicinal and aromatic herbs are used for food, traditional medicine and as a raw material for pharmaceutical industry. Especially important role is played by agro-biodiversity i.e. genetic resources of autochthonous plant and animal varieties as a source of food and a basis for traditional and organic agriculture. These species are particularly important in the context of climate change as autochthonous genotypes are expected to better adapt to changed climatic conditions.
- Energy source: forests represent one of the most important natural resources in Montenegro. Fuel wood is commonly used as energy source by numerous households and has accounted for some 4.5% of the gross inland energy consumption in 2010 (according to the data from the draft Strategy for Energy Sector Development by 2030).
- Timber: forest resources are commonly used in construction and related industries.

Indirect uses – ecosystem services

- Preserved ecosystems and species diversity offer aesthetic and cultural values that represent a basis for recreational activities and tourism. Coastal and marine ecosystems, as well as preserved mountain and freshwater ecosystems with related species diversity are a precondition for development of tourism as one of the key economic sectors in the country.
- Besides direct use of certain species, importance of biodiversity for production of food is manifested through provision of services such as pollination, primary production in grassland ecosystems (production of fodder) and provision of functionality of agricultural land.
- Biodiversity significantly contributes to quantity and quality of water resources. Wetland habitats along the northern shore of Skadarsko Lake, for example, perform filtration and prevent pollutants from reaching water ecosystems. Forest ecosystems perform similar functions in watershed areas. They also contribute to recharging of aquifers thus enabling water supply for population and economic activities.
- Healthy ecosystems, especially forest ones, prevent erosion.
- Forests, wetlands and marine ecosystems provide carbon sequestration services. Skadarsko Lake for example, is one of the largest reserves of peat in Europe and represents an important carbon sink (Schneider-Jacoby et al., 2010)

Source: Preparatory materials for the draft National Sustainable Development Strategy (revision process 2013 – 2014)

4 One of the most severe flooding in recent history took place in 2010. Total country-wide damages and losses caused by December 2010 flood exceeded € 41 million, impacting largely rural areas. Transport routes, electricity supply and communication lines between the northern region and the rest of the country were obstructed or interrupted for a certain period of time. In total, some 1.5% of the total population of Montenegro had to be evacuated.

Around 1.4 million tourists have visited Montenegro in 2012, generating € 700 million of revenues. The World Travel and Tourism Council (WTTC) estimated that during the past few years, tourism generated (directly or indirectly) between 17 and 23% of GDP. The main slogan under which Montenegrin tourist potentials are marketed internationally during the past years – Wild Beauty – is a direct tribute to the country's natural features and rich biodiversity.

According to the data of National Forest Inventory (completed in 2013), 60% of Montenegrin territory is covered with forests. Substantial increase in forest area during past years can be largely attributed to spontaneous expansion of forest vegetation at the expense of agricultural land. Annual logging volumes have recently ranged from around 450 to 600 thousands m^3, which is estimated to be within sustainability limits. Illegal logging represents a significant problem, especially in terms of biodiversity management and protection. Due to a low degree of timber processing, share of forestry in GDP is not substantial (combined contribution of agriculture and forestry to GDP has remained below 10% during past few years). Nevertheless, forests remain one of the main natural resources of the country and there are intentions to intensify their economic use in the future.

According to the data from agricultural census from 2010, agriculture and rural development accounted for 8% of GDP; there were around 49,000 agricultural holdings with more than 98,000 persons linked to these holdings and performing agricultural work either as a basic or additional occupation/ source of income[5].

The level of awareness on the values and significance of ecosystem services is still on a rather low level. Real costs related to the use of ecosystem products and services are often underestimated or not taken into account at all. Because of such weakness, cases of degradation and loss of ecosystem services have been recorded. In the coastal region, for example, urbanisation and tourism development have led to destruction of natural habitats and have diminished the level of services provided by these areas. Consequently, erosion, landslide and flooding processes and related risks have been exacerbated. In examining feasibility and acceptability of certain sectoral plans (e.g. energy sector and hydropower development), instruments such as cost-benefit analysis and strategic environmental assessments have repeatedly failed to take into account value of biodiversity and ecosystems affected by the plans adequately. The reasons include lack of biodiversity data, insufficient capacities for valuation methods and giving precedence to economic development over nature protection objectives.

Examples of economic valuation of ecosystem services are rare and include WWF study from 2005 on the value of Tara River (Mrdak, 2005), assessment conducted by Arcadis Ecolas and IEEP in 2007 on the benefits from harmonisation with the EU environemntal *acquis* (Ten Brin et al 2007), as well as UNDP/ ISSP Study from 2011[6] and recent (2013) valuation study prepared within GEF/ UNDP project[7].

The 2011 UNDP/ ISSP Study focused on PAs (specifically on national parks) and showed that they generated substantial economic gains for a range of sectors. In carrying out the assessment, products and services provided by PAs in tourism, fishing, recreation and water sports were primarily into taken into account, alongside with provision of drinking water, watershed protection and protection from flooding.

The value of tourism, recreational and other activities related to the use of PAs resources as well as services provided by these areas were assessed at € 68 million in 2010 (around 2.2%

5 Data from the national development plan – *Development Directions of Montenegro 2013-2016*

6 UNDP Montenegro and ISSP, *The Economic Value of Protected Areas in Montenegro*, Podgorica, 2011.

7 Emerton, L., *Montenegro: the economic value of biodiversity and ecosystem services*, 2013, technical report prepared under the GEF/ UNDP project National Biodiversity Planning to Support the Implementation of the CBD 2011-2020 Strategic Plan in Montenegro

of GDP or € 106 *per capita*). The Study also concluded that the existing level of protected areas financing (€ 2 million annually or € 1,800 per km^2) was insufficient for adequate management and that maintenance of such practice could, in a long run, generate substantial losses. Some of the other key findings of the Study are shown in the box 2-3.

Box 23: The economic value of PAs in Montenegro: the key findings

- **PA values accrue to multiple sectors, at many different levels of scale**

In 2010, just under a half of PA values accrued to the general public (worth more than € 32 million), more than a third generated earnings and cost savings to businesses and industries (€ 25 million), and around 15% earned revenues for the government (€ 11 million). PA goods and services supported the output of many different sectors of the economy, including tourism, energy, water, agriculture, infrastructure and disaster risk reduction.

- **Continuing to accord PAs a low policy and investment priority will incur economic losses**

Continuing to carry out "business as usual" may cost Montenegro's economy and population more than € 30 million over the next 25 years.

- **Investing adequately in PAs will generate value-added to the economy**

Choosing to "invest in natural capital" may create a steady, and increasing, value-added to Montenegro's economy and population over continuing "business as usual", generating incremental benefits worth more than € 1.5 billion over the next 25 years.

- **There is a high economic return to public investment in PAs**

Although choosing to "invest in natural capital" implies a considerably higher level of public investment than continuing "business as usual", these expenditures are far outweighed by the economic benefits generated. Net benefits will more than double over the next 25 years, and PAs will generate a total return of almost € 29 per € 1 of public funds invested.

Source: UNDP/ ISSP study 2011

A more comprehensive attempt to value ecosystem services in Montenegro is contained in the 2013 report *Economic Value of Biodiversity and Ecosystem Services* published in the framework of GEF/ UNDP project. The baseline value of selected biodiversity and ecosystem services to the Montenegrin economy is estimated at € 982 million (table 2.3). Provisioning services (wild foods and fodder, wood-based biomass and energy) contribute an estimated € 169 million or 17%, regulating and maintenance services (on-farm soil fertility and pollination, watershed and coastal protection, carbon sequestration) € 276 million or 28%, and cultural services (landscape and nature-based recreation) € 537 million or 55%.

Table 2.3: Baseline 2011 economic value of biodiversity and ecosystem services

Ecosystem service	Baseline value (€ mill)
Wild foods & fodder	114.42
Wood-based biomass & energy	54.39
Pollination & seed dispersal	28.69
Maintenance of on-farm soil structure & fertility	0.41
Watershed protection	47.81
Coastal protection	1.34
Carbon sequestration	197.50
Landscape & nature-based recreation	537.28
Total	**981.83**

Source: Emerton, L., 2013

The recorded gross output for the whole Montenegrin economy in 2011 was € 5.24 billion[8]: the calculated gross value of those ecosystem services which it has been possible to value is equivalent to almost a fifth of this value. At the same time, their value is around 2.3 times higher than recorded output of the agriculture, forestry and fisheries sector of € 425 million.

2.2 Biodiversity status and trends since 2010

Assessment of biodiversity status and trends as well as of the changes that have taken place since 2010 (since the submission of the Fourth National Report) is hampered by a limited (in its scope and time span) biodiversity monitoring and insufficient number of biodiversity research projects. Red lists and books of flora and fauna as an important tool for assessing the state and status of species have not been developed yet. Introduced in 2000 and often subjected to substantial financial restrictions, annual biodiversity monitoring programmes were conducted for a limited (and declining) number of locations/ species during the past few years. The key problems in planning and executing annual monitoring programmes included lack of baseline data for certain areas, habitats and species, insufficient coverage (reduced and changing scope from one year to another) due to financial restrictions, and insufficient human resources (limited number of experts for some species groups). All these make complete and reliable assessment of biodiversity status and trends more difficult, nevertheless some general trends have emerged from gathered data.

In the period 2010 – 2013[9], the monitoring programme covered vulnerable ecosystems and important species i.e. a number of representative locations. Compared to 2011, the number of monitored locations decreased significantly in 2012 and especially in 2013. The findings served to prepare biodiversity sections in the annual state of the environment reports. As of 2012, state of the environment reports and the key problems identified through the monitoring programmes were used to develop measures (action plans) to mitigate negative impacts on the environment. These action plans for 2012 and 2013 included, respectively, 22 and 41 biodiversity related measures. Available information indicates that success with

8 Monstat, Statistical Yearbook 2012
9 Results of the 2013 monitoring programme were not available at the time of drafting this Report.

implementation of these measures was diverse. Due to a changing scope of monitoring activities, it is not certain yet what specific biodiversity outcomes have they delivered.

In 2013, Environmental Protection Agency (EPA) prepared an indicator based report for all the environmental sectors and themes. Specific biodiversity indicators included in the report are: a) species diversity; b) distribution and state of selected species; c) deadwood in forests; d) abundance and dynamics of wildlife populations in hunting areas; e) non-native and/or invasive species; f) forest fires and g) protected areas. Marine trophic index was also covered. To analyse biodiversity status and trends for the Fifth National Report, information on the four indicators was used (protected areas, status of selected species, invasive species and marine trophic index), supplemented by information on specific ecosystems, locations and species from the earlier reports on the state of the environment.

There were no proclamation of new protected areas since 2010 (the last expansion took place in 2009 when Prokletije National Park was established). Montenegro is the only country in the Mediterranean that still has no marine protected areas (MPAs). Preparatory assessments and activities are underway for establishment of the two regional parks (Piva and Komovi). Feasibility study on revision of the National Park Durmitor borders was also initiated to take into account loss of some features of the protected natural area due to illegal construction in the town of Žabljak zone. Preparations for the proclamation of the first MPA (Katič island near Petrovac) are in progress; feasibility study for establishment of another MPA (at Platamuni location) is also underway.

Several preparatory activities for designation of new protected areas have been supported through the GEF/ UNDP project *Strengthening protected areas system in Montenegro* (PAS). Protection studies for Piva and Komovi regional parks have been prepared and necessary acts are currently under development to lead to a planned proclamation by the end of 2014. Establishment of the two regional parks will contribute to a substantial increase in the share of protected areas in the national territory.

Efforts to establish the first MPA were met with several challenges including the need to ensure sustainable MPA management structure and provide for adequate funding. Amendments to the Law on Nature Protection (Official Gazette of Montenegro 51/08 and 64/13) adopted in 2013 include provisions on PA managers in the public maritime domain – a question that was not regulated before and was causing practical problems in management of PAs in this area (primarily for the special nature reserve Tivat Saltpans).

Table 2.5: Expansion of the PA system over time

Period/ year	Total surface of protected areas (ha)	Share in the national territory (%)
Until 1980	68,588	4.97
2001	108,784	7.88
2008	108,934	7.89
2009	124,972	9.05
2010	124,972	9.05
2011	124,972	9.05
2012	124,972	9.05

Source: Indicator Based Report 2013, Environmental Protection Agency

- Available data allows for a conclusion that there have been mixed trends in the abundance and distribution of selected species. Plant indicator species – Pancic acer (*Acer intermedium) and* Balkan dioscorea *(Dioscorea balcanica)* are both

Balkan endemics and have had (respectively) mildly declining and stable trends. The main pressures on these species come from logging (usually for fuel wood) and forest fires. Fungi from *Hygrocybe* genus typical for dry grasslands have hade stable populations during the past few years; nevertheless, it is important to step up monitoring efforts due to pronounced pressures to which this habitat type is exposed (overgrowing or transition to intensive use).

The existing monitoring efforts for insects should be significantly extended to allow for conclusions on the state of selected entomofauna species. Substantial improvements are also needed for ornithofauna. Based on information collected from different sources, the EPA concluded that for most of the selected bird species, stable to mildly increasing trends were recorded between 2002 and 2012. Exceptions are populations of rock partridge (*Alectoris graeca*) and Baillon's crake (*Porzana pussila*) which have rapidly declined over the reference period. It should be also noted that the number of pairs and breeding success of the nesting birds such as pelicans (*Pelecanus crispus*) and collared partincole (*Glareola pratincola)* varies significantly from one year to another and is directly related to the levels of water in the main nesting habitats (Skadarsko Lake and Ulcinj Saltpans). Specific conservation measures undertaken in an effort to preserve nesting areas for Skadarsko Lake pelicans are described in the box 2-4. Measures were intended to mitigate pressures and address the issue of varying trend in the number of pelicans during past years, and are seen as an example of actions that have yielded positive results.

Box 24: Nesting platforms for Skadarsko Lake pilicans

Special reserve Pančevo oko is an area where pelicans traditionally nest on natural peat islets. Pelicans need large areas of water around the nesting ground in order to be able to land. Due to eutrophication, a trend of disappearance of these islets has been recorded. Another threat for the nests is fluctuation of water level that can go up to 6 m.

To address these threats, National Park administration has undertaken measures to conserve and improve nesting grounds by setting up artificial platforms and by preserving/ repairing natural islets. The interventions proved successful as pelicans accepted platforms and improved natural areas for nesting. It is for example indicative that a number of nesting pairs of *Pelecanus crispus* increased from 5 in 2002 to 16 in 2012.

- Zooplankton community *Caldocera* is a good indicator of water quality and plays a very important role in the food chain. Abundance of *Cladocera* (19 registered species) has been on a decline in Skadarsko Lake, which merits further motoring efforts and protection measures. Based on the identified species, saprobic index of the Lake has been calculated; the values ranged between 1.5 and 1.6 thus indicating moderate load of organic pollution in the Lake's water[10].

The most recent data from reptiles monitoring programme shows that selected species have a stable trend. As for amphibians, indicator species of the *Triturus spp.* genus showed a declining trend due to habitat disturbance and introduction of predators (fish). An alarming situation – no registered newts – was identified for waters where fish stocking was performed even in cases when data for preceding years showed sound newt populations. Cases of loss of species and destruction of habitats were recorded in the past years (details provided in the box 2-5).

10 EPA, Indicator based report 2013

Box 25: Decline in newt population: cases of specific karst and coastal habitats

Pronounced negative trends were recorded in Nikšić municipality due to fish stocking of several ponds (e.g. in Vilusi, Velika Osječenica, Petrovići, Velimlje and Banjani). Fish are the first order predators for both the adult newts and their larvae. During filed surveys performed in 2012, no newts were registered in these locations even though data for the previous years indicated presence of 'good' populations. In addition to fish stocking, development of a new road eased access to in particular Velika Osječenica pond – a specific freshwater body on holokarst. As a result of combined pressures, this sensitive habitat of neotenic small newt *Mesotriton vulgaris* was damaged. The 2013 monitoring programme did not cover Velika Osječenica and a number of other important ponds in the area, and the current state is not known.

Another negative example (of land use change) is Bregvija pond in Upper Štoj (Ulcinj municipality) previously known as a habitat of protected newt species T*riturus carnifex.* Field visits in 2013 showed that the pond was dried out and that the area was turned into construction and waste disposal site.

Systematic research of invasive plant species was not conducted so far. Information collected through individual research projects and initiatives enabled compilation of a list of introduced species, yet specific data on the degree of their invasiveness is missing (some introduced species might not be invasive and/ or damaging in a given habitat). Based on the current level of knowledge, status and threats from known invasive species were assessed in the EPA's Indicator based report 2013, and the key findings are presented below.

Black locust (*Robinia pseudacacia*) and tree of heaven (*Ailanthus altissima*) have been assessed to have potential to cause significant damages due to their extensive spread through southern and central part of the country and ability to disrupt structure of natural ecosystems. As for herbaceous plants, hollyhock (*Alcee rosea*) leads in terms of the frequency of occurrence and population abundance. Distribution of ice plant (*Carpobrotus edulis)* is limited, but potential negative impact is high as it grows on sensitive habitats (coastal rocks) and spreads quickly. Due to high degree of invasiveness, desert false indigo (*Amorpha fruticosa)* represents a serious problem in the areas around Skadarsko Lake.

When it comes to freshwater ecosystems, the invasive species of perch (*Perca fluviatilis*) and Chinese carp (*Carassius auratus gibelio)* were identified in Skadarsko Lake. For both populations, growing trends are recorded. A total of nine marine invasive species has been evidenced based on the literature data. According to the RAC SPA centre of the UNEP/ MAP, five species are considered as established (stable) in the Montenegrin territorial waters, three occur periodically while the status *Crassostrea gigas* (the species is introduced through mariculture activities) is unknown. During the field research conducted in 2008, *Caulerpa racemosa var. Cylindracea* was recorded and is considered to have potential to cause significant damages in the sea (expert opinion).

In the period since 2010, earlier trends in activities and processes affecting the state of biodiversity continued with a similar intensity. Urbanisation and tourism development remained a source of main pressures on the coastal biodiversity, affecting also zones with rare, endemic and protected habitats and species. The most endangered coastal habitats are sand dunes of Ulcinj's Long Beach (one of the last resorts of unique and rare halophyte vegetation) and remaining fragments of Skadar oak (*Quercus robur scutariensis*) in the hinterland of the Beach. Other locations where prolonged pressures from urbanisation have led to fragmentation and degradation of habitats and biodiversity loss include Spas Hill, Jaz Beach, and Kotorsko-Risanski Bay.

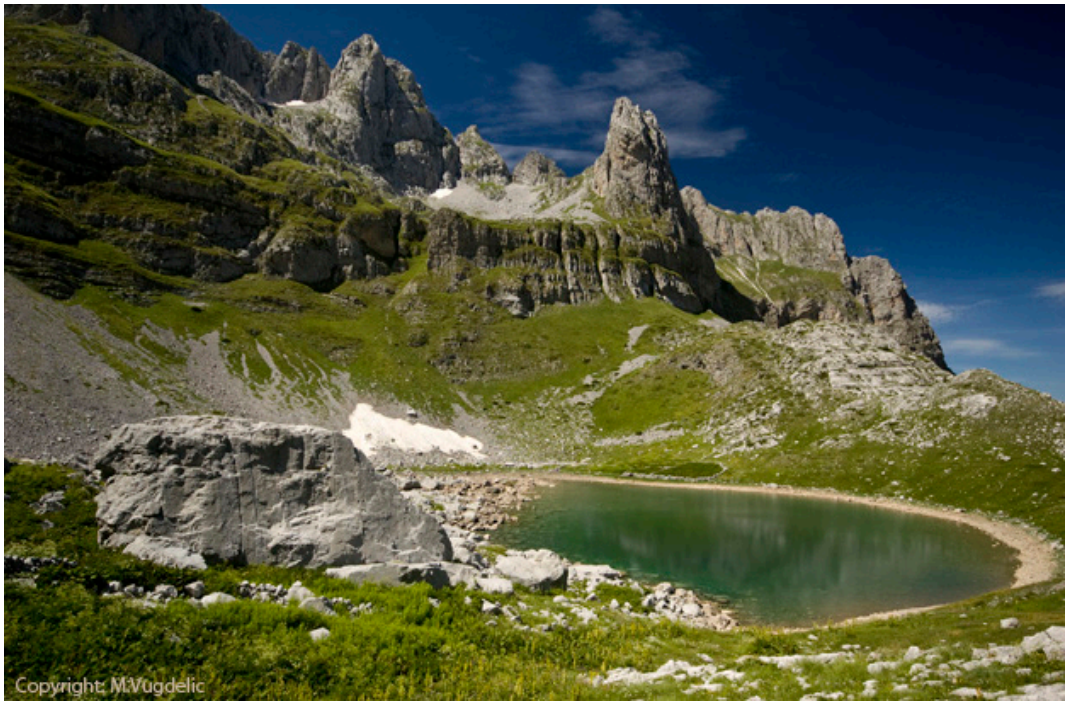
Significant changes have been recorded for the forest ecosystems, in particular due to severe forest fires that took place in 2011 and affected close to 7% of total area under forests. Degradation processes (due to intensive logging and pollution) were pronounced on specific locations such as Ljubišnja Mountain. In this area, significant numbers of dry spruce trees were also recorded (for unknown reasons). As shown by the data from Na-

tional Forest Inventory, the overall trend in coverage of forest areas is positive (forest area shave reached 60% of the national territory). As indicated in the new studies[11] on potential impacts of climate change, both positive and negative impacts could be expected under conditions of altered temperatures and precipitation patterns. As organisms dependent on temperature, insects are expected to have better conditions for development (through, for example, increased number of generations). Dying out of tree trunks (as a consequence of changes in distribution of species) will lead to an increase in populations of saprophytic fungi and insects that feed on decaying materials. On the other hand, quicker growth and longer vegetation will enable trees to fight illnesses and pests more effectively. Forest fires are expected to occur more frequently in the future and to cause more damages. It was also assessed that climate change would have a negative impact on distribution of the most important tree species in Montenegro – spruce, fir and white pine – while some of the other species (e.g. black pine and oak) would benefit.

Eutrophication trend as the main factor affecting freshwater and wetland habitats continued during the past few years as there were no major interventions to address pollution from human settlements. Moreover, exploitation of sand and gravel from watercourses has affected biodiversity on several specific locations in recent years, including, for example, habitat destruction and major hydrological changes of Grnčar River (as an example of extreme overexploitation).

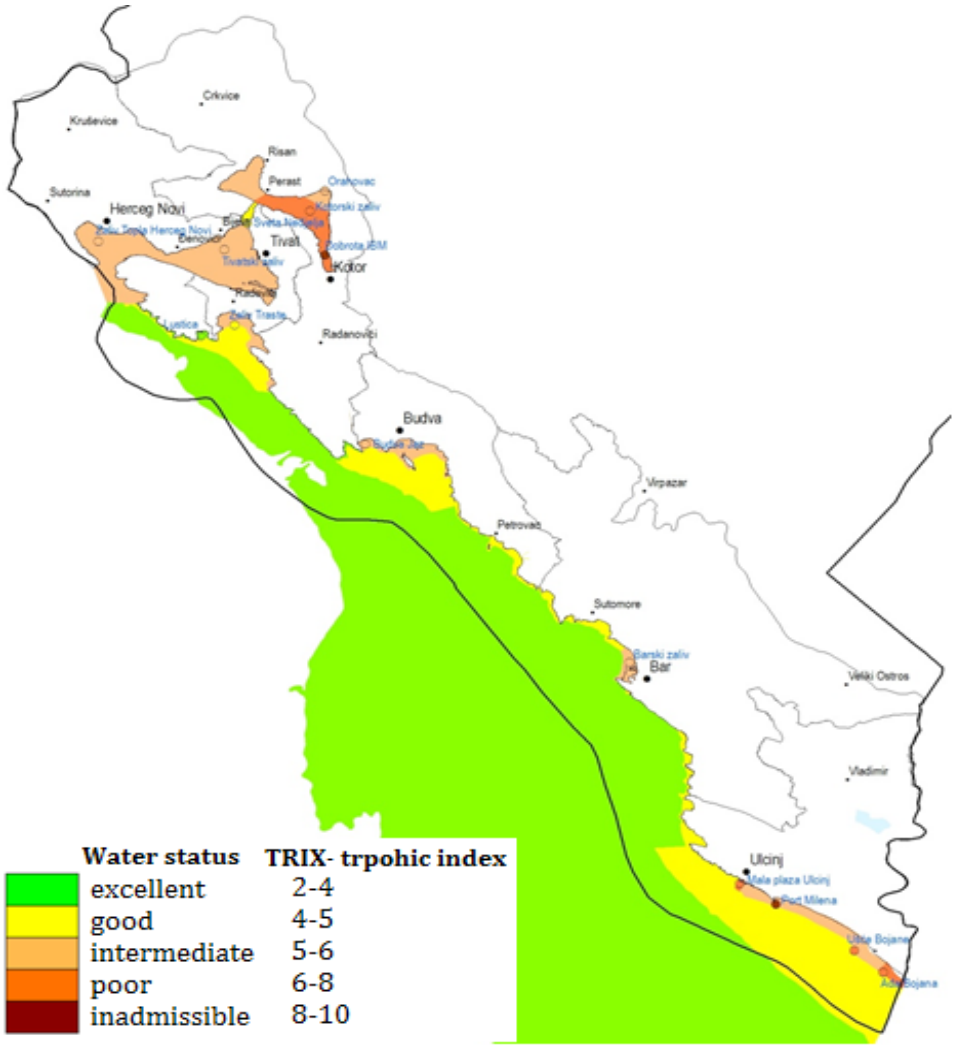
Even though it has not been covered by the monitoring programmes, different sources indicate there is a declining trend (and extinction of certain varieties) in endemic agrobiodiversity due to abandonment of traditional land use practices.

Marine ecosystems (especially in the enclosed area of Bokokotorski Bay) have been continuously affected by different pollution sources. Due to a short period in which parameters necessary to calculate trophic index were monitored (full data series for 2010 and 2011, test measurements in 2009), it is not possible to assess trends. Overall situation i.e. values of the index are depicted on the map in figure 2-1.



11 Including reports prepared for the Ministry of Sustainable Development and Tourism and Ministry of Agriculture and Rural Development in 2013 (supported by UNDP) assessing sensitivity of forest sector to pests and forest illnesses and analysing impacts of climate change on future distribution and growth of the main tree species in Montenegro.

Figure 21: Trophic index values (with locations for the sea water quality monitoring)



Source: *Assessment of General Vulnerability*, Coastal Area Management Programme (CAMP), 2013

Based on limited information available, the overall state of biodiversity can be assessed as satisfactory, while as trends for a number of species and habitats on specific locations remain a reason for concern. In the absence of adequate protection measures, prolonged pressures affecting some biodiversity components threaten to undermine vitality and stability of respective ecosystems as well as their ability to continue provision of services based on which socio-economic development rests. Coastal, forest, and freshwater ecosystems are exposed to the strongest pressures and that is where most of the negative impacts on biodiversity are recorded. Decline in agro-biodiversity is also worrying. High level of correlation between economic development, strongest pressures and negative trends for some biodiversity components testify of the lack of effective instruments to plan and implement economic activities in a manner that is least damaging to habitats and species.

2.3 Main biodiversity threats

Economic expansion evidenced during mid-2000s[12] gave rise to a range of new and intensified some of the existing pressures on Montenegrin biodiversity. These included: a) accelerated urbanisation, primarily in the narrow costal belt, across the central plain area and around the system of natural lakes; b) increased illegal construction and development in and around protected areas, in a major part of the coastal region and around mountain resorts; c) pollution of watercourses from urban and industrial sources (e.g. untreated wastewater) and agricultural run-off; reduction of wetland areas and modifications of water bodies; d) examples of overexploitation of forests, materials from river courses, fisheries and other natural resources, including illegal logging, extraction, hunting and fishing: and e) land use changes (including conversion of agricultural land into built areas, abandonment of traditional land use practices – grazing and haying – leading to a loss of biodiversity rich highland pastures, and similar). The pressures did not decline at the same rate as economic activities following the downturn experienced since 2009 due to insufficient control mechanisms and efforts to, in some case, compensate the effects of crisis by capitalising on the country's natural assets. The crisis also affected (in a negative manner) financial capacity to improve protection and management of important biodiversity and to reduce pollution from different sources.

Based on the results of the monitoring programmes presented in the state of the environment reports 2010 – 2012 and other available sources[13], direct drivers of biodiversity loss for ecosystems/ key habitat types (as identified in the BSAP) have been categorised in the main groups of pressures and are shown in the table 2.6.

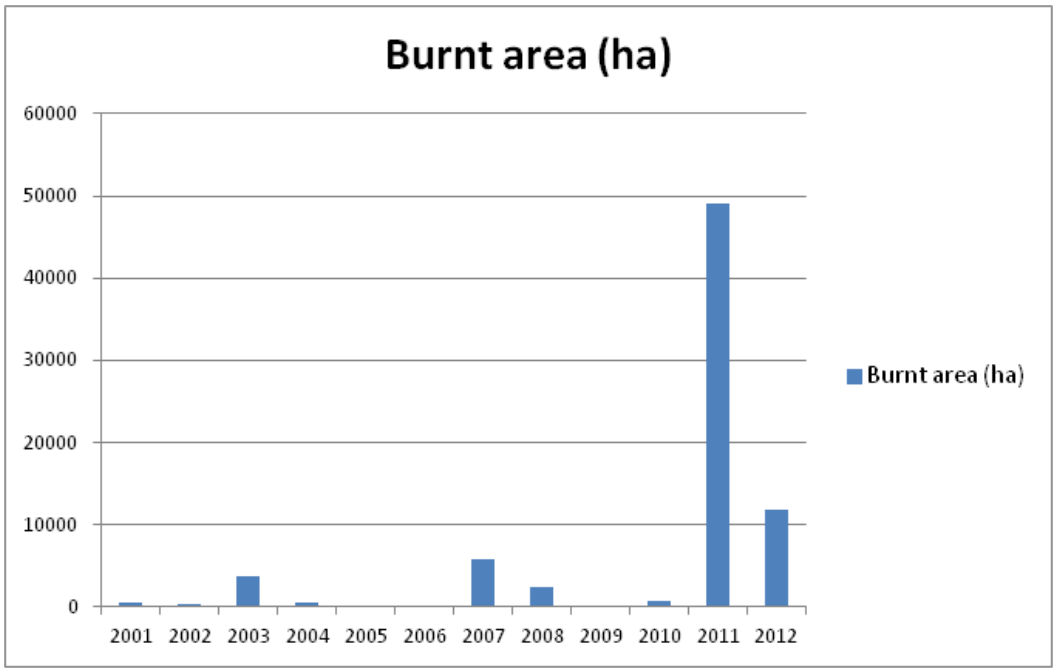
The overview shows that forest, freshwater and coastal habitats have been exposed to the strongest pressures during the past few years, and that the most significant pressures manifested in the form of habitat change and overexploitation. Different sources of pollution also generated strong pressures on the most affected biodiversity components, in particular on freshwater and marine ecosystems. Pressures from invasive species and climate change are still not playing an important role, however these are the areas where much more research is needed to understand better impacts and potential threats as the type and extent of these pressures is expected to grow in the future. Changing climate has already contributed to increased pressures on forest, freshwater and coastal habitats through increased incidence and intensity of forest fires, flooding and storms. Number of forest fires and the surface of burnt areas, for example, correlates fully with peaks in mean monthly temperatures and low precipitation recorded during summer months of 2003, 2007 – 2008, and 2011 – 2012 (areas affected by forest fires ranged from less than 100 ha in 2005 to 49.000 ha in 2011 and are shown in the figure 2-2 below).

Karst habitats are very important for Montenegrin biodiversity and are usually found on altitudes of 1.000 m (with some areas on higher altitudes – up to 1.900 m). They are characterised by specific vegetation and particularly by high endemism in reptile populations. A large number of caves is found in Montenegro due to specific geology. In many cases, the caves have exceptionally complex and rich fauna with many endemic and relict species (mainly in invertebrate groups).

12 For example, GDP growth rates in the period 2006 – 2008 ranged from around 7% to close to 11%.

13 Such as National Communications on Climate Change – Initial National Communication from 2010, and current (from February 2014) draft of the Second National Communication

Figure 22: Burnt forest areas 2001 – 2011



Source: Indicator based report, EPA 2013

Table 2.6: Main drivers of biodiversity loss in Montenegro

Ecosystems/ habitats	Direct drivers of biodiversity loss (by category)				
	Habitat change	Overexploitation	Pollution	Invasive species	Climate change
Alpine	Small scale conversion of pastures into arable land Overgrowing	Logging			
Forest	Clear-cutting at certain locations Forest fires Development of forest roads	Logging, including unpermitted cutting Uncontrolled hunting Uncontrolled collection of wild fruits and plants	Air pollution Deposition of pollution from nearby mining activities and industries	Certain tree species and insect/ fungus pests	Changes in precipitation patterns, droughts
Dry grassland	Urbanisation Expansion of agriculture		Unregulated waste disposal (scattered dumps)		
Freshwater	Drainage and/ or filling up of ponds and wetlands Excessive growth of submerged vegetation Destruction of spawning areas; changes of river beds and hydrology	Fishing, including illegal practices (fishing outside permitted seasons, use of electrical and other prohibited devices, use of spear guns etc.) Extraction of sand and gravel	Eutrophication Waste dumping into river courses Industrial pollution (of surface and groundwater)	Increase in populations of introduced fish species	Flooding (increased incidence)
Marine	Disturbances due to recreational use of marine waters Structural changes of the sea bottom (due to seine fishing, dynamite, solid waste deposits)	Overfishing, unpermitted fishing practices (including shellfish collection)	Wastewater discharges, eutrophication Pollution from maritime transport Mariculture	Ballast waters, introduction of invasive species	

Ecosystems/ habitats	Direct drivers of biodiversity loss (by category)				
	Habitat change	**Overexploitation**	**Pollution**	**Invasive species**	**Climate change**
Coastal	Construction (tourism and residential capacities, second homes) Infrastructure development Erosion (due to altered courses of natural dykes for draining torrents) Vegetation (trees, macchia) clearing Disturbances by visitors	Exploitation of sand Unregulated hunting Grazing (localised) Logging and	Unregulated waste disposal (scattered dumps) and wastewater (septic tanks, direct discharges, agricultural run-off)		Increased intensity of storms and sea level rise (leading to coastal erosion)
Karst	Disturbances by visitors Vegetation (trees, bushes) clearing Drying up of ponds	Unregulated collection of herbs Unregulated hunting			Droughts
Caves	Disturbances by visitors	Unauthorised research/ expeditions			

Underlying causes (indirect drivers) of declining biodiversity are linked to various economic activities and management/ governance weaknesses. Tourism, construction and forestry are the main economic sectors affecting negative changes recorded in Montenegro, followed by agriculture, transport and industry.

Construction of tourist capacities and residential/ holidaying buildings, especially in the coastal and valuable nature areas in the central and northern parts of the country, have been driven by high market demand for tourism and attractively located real estate. Both planned (i.e. regulated under relevant spatial plans) and illegal construction have had an impact on destruction and degradation of habitats, whereas unregulated construction was more damaging in a sense that it frequently took place in areas with significant biodiversity. The source of negative impacts of planned construction on biodiversity leis in the fact that in practice, spatial planning tends to respond to market demand rather than to act as a tool to safeguard ecosystems and services they provide. Land uses determined under the valid set of spatial plans in the coastal region, for example, include excessive surfaces intended for new construction. Recent analysis[14] showed that designated construction areas in the coastal municipalities would be sufficient to accommodate additional population of 600-800,000 people (compared to current 150,000) and to more than double tourist capacities, often at the expense of areas with valuable biodiversity. Control of urbanisation and related infrastructural development (through adequate land use policies, improvements in the spatial planning system, enforcement of relevant regulations and halting of illegal construction) remains a top priority for addressing root causes of biodiversity loss in Montenegro.

Similarly, improvements in the forest and water resources management are necessary to address causes of excessive and/ or uncontrolled exploitation, including drive to obtain quick private profits, insufficient enforcement capacities, lack of information and knowledge on sustainable use of natural resources etc.

Results of the last years' monitoring programmes showed that illegal fishing and hunting have continued to be a source of significant pressures on particular fish and bird populations, often in nationally protected and/or areas of international significance such as Tara River, Skadar Lake, Long Beach Ulcinj and others. Inadequate enforcement of hunting and fishing regulations thus remains one of the important underlying causes of biodiversity loss. Weaknesses in the management of protected areas (including insufficient funding, technical and human capacities) and low priority this area has in decision making also give rise to a range of pressures leading to negative trends in biodiversity.

Another set of indirect drivers of biodiversity loss is linked to pollution. Management of communal waste and wastewater, and control of pollution from industry and transport need to improve significantly in order to avoid future losses of biodiversity, in particular for freshwater, marine and forest ecosystems. Currently, less than a fifth (18%) of collected urban wastewater is being treated before discharge into natural recipient, while some 40% of generated municipal waste is disposed to regulated landfills[15]. Energy generation and mining activities are highly emission intensive and affect large areas of land, while wastes (slag and ash, mining tailings) from these activities are, as a rule, disposed in an improper manner. Maritime transport contributes significantly to pressures on marine ecosystems. Generally speaking, agriculture is not a significant polluter but in certain areas, agricultural run-off and pesticides use represent threats to biodiversity and need to be addressed in an adequate manner. According to the EPA Indicator based report 2013, a trend of increase in the use of pesticides has been recorded during the past decade. As for the use of mineral fertilizers, there are significant fluctuations between the years but also a growing trend overall.

14 *Assessment of General Vulnerability*, Coastal Area Management Programme (CAMP), 2013

15 Sources: Millennium Development Goals Report 2010 – 2013 and draft National Waste Management Strategy

On a more general level, one of the main underlying causes of direct pressures on biodiversity and one of the key reasons for insufficient progress in implementing measures to address them leis in a low awareness at all levels (from decision makers to citizens) and related low priority assigned to biodiversity protection. Lack of data and sound approaches to decision making and insufficient level of coordination and cooperation among various sectors/ parts of administration also fall in the category of deeper causes of negative trends in biodiversity in Montenegro.

2.4 Impacts of declining biodiversity and ecosystems on human well-being

So far, there were no attempts to systematically assess impacts of negative changes in biodiversity on ecosystem services and evaluate these in economic terms. However, some expert judgements and anecdotal evidence is available testifying that declining biodiversity has already had an impact on the provision of ecosystem services and related socio-economic and cultural benefits, and that potential losses in the future could be significant. Declining biodiversity and ecosystem services, should such trends prevail, are likely to seriously diminish prospects of achieving Montenegro's long-term goals of smart, sustainable ad equitable development[16].

Due to intensive logging and removal of lower vegetation in some areas of the country erosion processes have been exacerbated. Combined with overexploitation of materials from river courses (and climate change impacts), this has led to more frequent and severe flooding. Flash floods typical for the mountain rivers in the north of the country have caused significant damages to infrastructure, properties and agricultural land, causing hardship to many of the local communities. Floods are often affecting the most vulnerable segments of population. As mentioned before, damages from 2010 floods (one of the most severe flooding in recent years) has been estimated at more than € 40 million.

Another example are decreasing fish stocks (as a result of overfishing and/or illegal fishing practices, pollution, spawning grounds disturbances) that have a negative impact on the traditional activities and livelihood of local communities around Skadarsko Lake. In the coastal region, destruction of certain habitats and removal of vegetation for construction has intensified erosion processes which make the entire area more susceptible to natural hazards. Obstructed and/ or altered watercourses that used to channel torrents into the sea have a similar effect (intensification of erosion).

Degradation of forests happening now will, in a long run, diminish vitality of these ecosystems and in combination with climate change, it may significantly undermine potential for development of a viable forestry sector. If amenities and recreational services provided by a range of ecosystems are not preserved at current levels or improved, country's attractiveness for tourism (as one of the key economic sectors) will significantly diminish. As mentioned in the section 2.1, losses due to under-investing in protected areas management over the next 25 years could be significant (more than € 30 million per year).

16 As set out in some of the key national strategies and plans, including National Sustainable Development Strategy (2007), Development Directions of Montenegro 2013-2016 (national development plan) and others.

3 Part II – Implementation of the National Biodiversity Strategy and Action Plan and the mainstreaming of biodiversity

3.1 Montenegro biodiversity objectives and targets

During the past decade, national biodiversity targets have revolved around plans for an increase in surface and improvements in management of protected areas, including improved representativeness of the protected areas system. National Sustainable Development Strategy (NSDS, 2007), for example, has set the following objectives: a) protect 10% of the territory and at least 10% of the coastal zone by 2009; b) establish an efficient system for managing nature protected areas; and c) improve legal framework, strengthen human resources and develop an effective system for biodiversity monitoring. NSDS is currently being updated, which represents an opportunity to integrate adjusted biodiversity targets in this over-arching strategic document for a period of up to 2020.

The objectives initially set under the NSDS were reaffirmed and further developed in the National Biodiversity Strategy Action Plan (NBSAP or BSAP) which was adopted in 2010 covering the period up until 2015. Besides addressing national priorities, NBSAP goals were developed in a way as to support implementation of the Convention (UNCBD) and Strategic Plan from 2002. Set of long term and operational goals formulated under BSAP were thus highly aligned with the CBD, its thematic programmes and cross cutting issues. Long term NBSAP goals refer to the following:

- protection and improvement of all the components of biological diversity, their sustainable use, and equitable sharing of benefits from utilisation of genetic resources (protection and sustainable use of biodiversity were singled out as priority goals until 2015);
- in relation to CBD Thematic Programmes, priorities identified in the BSAP included: a) forest biodiversity, b) freshwater biodiversity, c) marine and coastal biodiversity, and d) mountain biodiversity;
- as for the cross-cutting issues, BSAP long term goals were primarily linked to a) protected areas, b) sustainable use of biodiversity, c) ecosystem approach, d) tourism and protection of biological diversity, d) spatial planning and biodiversity, and e) impact assessments.

The following operational objectives were identified:

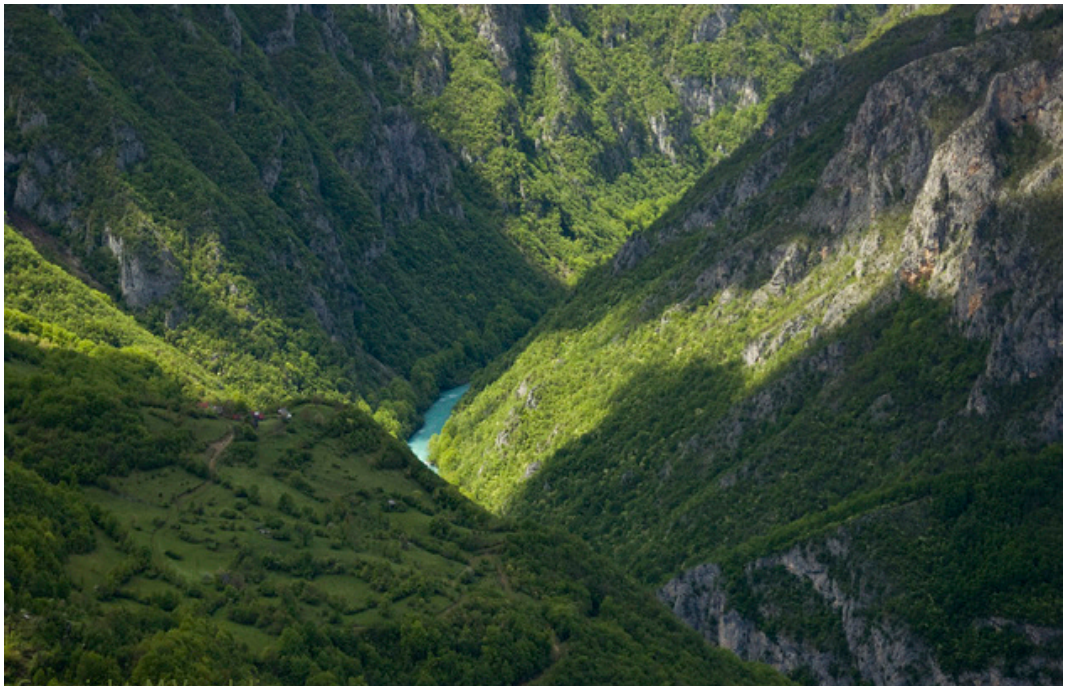
1. develop adequate activities and measures for identification, protection and improvement of all the components of biological diversity, both *in situ*, and *ex situ*;
2. develop adequate activities and measures for eliminating and/or mitigating negative impacts on biological diversity;
3. apply adequate indicators to monitor progress in the implementation of the BSAP objectives and measures;
4. ensure allocation of adequate funds for BSAP implementation;
5. ensure transposition and implementation of EU directives and regulations pertaining to natural habitats and wild species;

6. ensure organizational improvements and capacity development for institutions responsible for biodiversity/nature, in order to enable them to a) enforce relevant legislation, b) implement EU accession obligations, and c) implement obligations determined under BSAP;
7. stimulate improvements in formal and informal education on biological diversity and public participation in decision making processes.

The NSDS and NBSAP goals of expanding the PA system to 10% for terrestrial and protecting 10% of marine and coastal ecosystems will be updated with a view to international (such as the CBD goals for 2020) and EU obligations. The on-going process of updating the 2010 NBSAP (expected to be completed by the end of 2014) will enable full integration of the Aichi Biodiversity Targets into national strategic framework and alignment with the Strategic Plan for Biodiversity 2011-2020. Another important aspect of setting the national biodiversity objectives is the country's ambition to join the EU. As Montenegro obtained Candidate Country status and opening of negotiations on environment and nature protection is approaching, the EU accession emerges as the key driving force for (in particular) legal and institutional improvements for biodiversity protection, and for protection of certain habitats and species. The EU goal is to halt biodiversity loss and degradation of ecosystem services by 2020, and as far as feasible, to provide for their restoration.

3.2 Update of the NBSAP

Revision of the 2010 NBSAP has begun, and a pre-consultation draft of the updated BSAP has been released recently. Formulation of national goals in the draft updated BSAP was done in line with guidelines from the 10th COP (Conference of Parties to the UNCBD) and Aichi targets. The goals are also aligned with the EU Biodiversity Strategy. By adapting Aichi targets to the national context, a total of 17 national objectives have been proposed (structured around five strategic goals) together with indicators to monitor progress towards their achievement. Some of the proposed indicators are already available while as additional data collection will be needed to derive others. Revised BSAP is strongly focused on the importance of ecosystems and services they provide for sustainable economic development, as well as on the use of adequate incentives for attainment of biodiversity goals. An overview of the goals and objectives proposed under the revised BSAP (draft from December 2013) is presented in the box3-1.



Box 31: Objectives of the revised BSAP

Strategic goals	Objectives
Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society	1. Increase public awareness and understanding of biodiversity and ecosystem services values (education and information exchange) 2. Value of biodiversity and ecosystem services is integrated in national and local development strategies (including National Sustainable Development Strategy, forestry, rural development, energy and tourism strategies, and others) and, as appropriate, in the accounting and reporting systems 3. Avoid subsidies harmful for biodiversity and promote sustainable use of land and natural resources through application of positive incentives (such as environmental taxes and charges, payments for ecosystem services, tradable construction permits, certification and labelling, green financing and funds, etc.) 4. Ensure increase in the extent of sustainable production and consumption
Reduce the direct pressures on biodiversity and promote sustainable use	5. Decrease pressures from land uses (regulate potential industrial projects having an impact on ecosystems; promote sustainable use of agricultural land and forest management) 6. Decrease water pollution (including excess nutrients and eutrophication) and pollution of air; ensure safeguarding of biodiversity "hot spots" from pollution 7. Identify invasive species and pathways
To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity	8. Increase share of protected areas to 17% 9. Adopt necessary measures for endangered species 10. Ensure and maintain genetic diversity of cultivated plants and farmed animals 11. Protect and improve use of ecosystems services, in particular through integrated river basin management and integrated forest management
Enhance the benefits to all from biodiversity and ecosystem services	12. Protection and restoration of ecosystems and their services to contribute to climate change mitigation and adaptation 13. Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and implemented in line with national legislation
Enhance implementation through participatory planning, knowledge management and capacity building	14. Improve horizontal cooperation and coordination between sectors in relation to NBSAP; mainstream NBSAP targets and indicators into other relevant national strategies 15. Improve vertical coordination and exchange with local governments to ensure BSAP implementation at local level 16. Knowledge on biodiversity, its values, functioning, status and trends is widely shared and transferred 17. Mobilisation of funds for NBSAP implementation (different sources, including public funding through other sectoral strategies and action plans, as well as private sources)

Source: Revised BSAP 2014 – 2020 (draft from December 2013)

The new set of objectives to a large extent corresponds with prevailing pressures and underlying causes of biodiversity decline, and with some refinement, they represent a sound framework for delivering necessary improvements and fulfilling international obligations in biodiversity protection.

Mainstreaming of biodiversity, which was one of the central themes of 2010 BSAP, continues to have an important place in the revised document. The success in mainstreaming biodiversity since the adoption of first BSAP has been moderate (details in the sections 3.4 and 3.5), and the revised BSAP relies on a range of measures to ensure mainstreaming. They include mapping and estimation of biodiversity/ ecosystems values on the national level and for priority sectors, adjustment of the system of national accounts to allow for integration of biodiversity values into measures of economic success (such as GDP), improvements in inter-sectoral coordination (through establishment of a multi-sectoral working group or committee to coordinate implementation of BSAP) and allocation of funds for biodiversity protection through sectoral budgets (budgets of ministries other than the environment one). National Council for Sustainable Development served as a coordination mechanism for the implementation of 2010 BSAP and had a limited effectiveness.

Other improvements and new approaches introduced through the draft revised NBSAP include more attention paid to the potential of market based instruments in addressing underlying causes of biodiversity loss and a more comprehensive attempt to control pollution as a direct pressure on biodiversity. Increased attention is also paid to agro-biodiversity i.e. to maintaining genetic diversity of cultivated plants and farmed animals, as well as to implementation of instruments to ensure access to genetic resources and equitable sharing of benefits (ratification and implementation of Nagoya Protocol). In line with Aichi targets, national objective on the share of protected areas is set at 17% by 2020.

3.3 Actions taken to implement the Convention

In the period since 2010, a range of actions has been undertaken to implement BSAP and consequently the Convention. As specific evaluations[17] of impacts of implemented policies and measures are not available and biodiversity monitoring is flawed, it is not easy to link biodiversity outcomes to a given action. Links between negative trends and poor implementation of certain regulations, for example, appear more clearly and can be corroborated by the results of monitoring programmes, expert judgments and similar. These (and their implications for human well-being) were discussed in the sections 2.2 – 2.4.

The actions taken during the past three years (2011 – 20013) to implement the UNCBD on national level can be roughly grouped into the following categories:

1. Improvements of the legal and institutional frameworks (development of capacities);
2. Identification and assessments of specific habitats to enable expansion of the protected areas system; and
3. Efforts to mainstream biodiversity and improve availability of baseline data to ensure adequate biodiversity protection measures are integrated in various sectoral plans and projects;

1. Upgrading of the relevant legislation, including Amendments to the Law on Nature

17 E.g. studies looking into impacts of implementing certain legislation, policies or plans on biodiversity state and trends

Protection(Official Gazette of Montenegro 51/08 and 64/13), proposal of the new Law on National Parks and relevant bylaws (to implement framework legislation) has been mainly motivated by the alignment with the EU nature *acquis*. Legislation in the field of nature conservation, including recent changes, reaches high transposition score both for the Birds (83%) and the Habitat Directives (93%).[18] However, some key provisions as well as functional links are missing in the transposition and the full implementation of the requirements set by these Directives is not possible before comprehensive field assessment of habitats, flora and fauna. Amendments to the Law on Nature Protection will ensure legal basis for adoption of the secondary legislation that will transpose the remaining provisions of the Habitat Directive. As for the implementing measures, 13 IBA sites have been identified, draft catalogue of habitat types has been prepared and preparations for establishment of Natura 2000 are accelerating. The proposal of the new Law on National Parks introduced provisions regulating payments for ecosystem services. Legislative changes are supported by the initiative implemented under GEF/ UNDP project *Catalysing Financial Sustainability of the Protected Areas in Montenegro,* which will pilot a payment scheme for the National Park Durmitor (activities are underway, completion of the PES scheme is expected in 2014). Activities to ratify Nagoya Protocol are underway.

As regards institutional arrangements, the key competences have not changed in the recent period and the Ministry of Sustainable Development and Tourism (MSDT), Ministry of Agriculture and Rural Development, the Environmental Protection Agency (EPA) and Public Enterprise for National Parks (with organizational units responsible for the management of 5 national parks) are the main administration bodies tasked with biodiversity protection. Recent institutional changes that have happened include incorporation of the Nature Protection Institute into the EPA and a move to bring together all the inspections (that were previously operating within line ministries or appropriate administrative bodies) into a single institution - Inspection Directorate. The effectiveness of these changes remains to be tested in practice. Coordination and policy integration function is performed by the National Council of Sustainable Development which is currently being reformed. One of the working groups of the new Council deals specifically with sustainable management of resources.

Several educational, communication and awareness raising activities have been also implemented since 2010 to strengthen general framework for biodiversity protection (details in the section 3.5 and Appendix 3). Capacity building and efforts to improve stakeholder engagement were also undertaken, even though at an insufficient level. The weakest link in creating a favourable legal and institutional framework for the implementation of BSAP/ the Convention was mobilisation of necessary resources. Insufficient knowledge and public awareness, capacities and funding remained the key obstacles to the implementation.

2. In 2011, assessment of the importance of several marine sites for protection (designation of MPAs) was completed and different protection regimes were recommended for various locations (details in the box 3-2). As a part of the project aiming to establish MPA at Katič location near Petrovac (project supported by the Italian Ministry of Land, Sea and Environment), several activities were implemented in the period 2011 – 2013 including promotion, stakeholders involvement, surveys of the area's characteristics from protection perspective, monitoring, and capacity building for future management authorities. Feasibility study on potential MPA at Platamuni location is being prepared. As for terrestrial ecosystems, studies for designation of protected areas have been com-

18 ECRAN project implemented by the consortium led by Human Dynamics, *Monitoring transposition and implementation of the EU environmental and climate acquis: Montenegro Progress Report 8, April 2012 - March 2013*

pleted for Piva and Komovi (proposed regional parks). Feasibility study for the revision of boundaries of the National Park Durmitor was also completed. All of these activities have contributed to the implementation of the Convention Programmes of Work on forest, mountain, and marine and coastal ecosystems, as well as on protected areas.

Box 32: RAC SPA assessment of potential for proclamation of Marine Protected Areas in Montenegro

Through the Regional Activity Centre for the Specially Protected Areas (RAC SPA), UNEP/MAP supported implementation of field surveys on marine biodiversity (benthic and fish communities) in order to identify potential marine protected areas (MPAs) in Montenegro. Surveys were completed in 2011 and covered more than 20 locations along the entire coast. Based on detected habitats and benthic and fish communities of significance for protection, the following recommendations were made:

Protection from fisheries aspect: Platamuni (from Platamuni Cape to Žukovac Cape) and Seka Albaneze (in order to allow for regeneration of fish stocks it is recommended to establish two to three 'no take' zones);

- Prevention of disturbances from diving and tourism: area near Petrovac (Katič island and Dubovica);
- Protection of coral reefs and sponge communities in Bokokotorski Bay by establishing a micro-reserve to safeguard communities from mechanical damages;
- Protection of the area from Mendra (lighthouse) Cape to Old Ulcinj by establishing marine protected area;
- Additional surveys are necessary for Sveti Nikola Island and Mamula.

Source: Information on the State of the Environment 2011

In the coming period, intensive activities will have to be carried to improve the pace of PAs designation and to ensure their full adequacy in covering important habitats and species, including those that are of interest to the European Community (Natura 2000). This is especially important with a view to the new proposed target (under revised BSAP) for expansion in protected areas to 17% of the territory by 2020.

3. Mainstreaming actions implemented in the past three years were mainly linked to improvements in the impact assessment system (even through a number of weaknesses has remained), identification and development of options for eco-tourism development, completion of the National Forest Inventory (and other strategic documents in forestry sector), integration of biodiversity concerns into transport development plans and similar. Worth of mentioning is preparation of studies and baselines to ensure adequate protection of coastal biodiversity – example of vulnerability assessment prepared through the Coastal Area Management Programme to aid preparation of the coastal spatial plan is especially important. Similarly, actions were undertaken to improve availability of biodiversity baseline data in cases of planning large energy generation capacities (hydropower plants on Morača river). Biodiversity monitoring programme carried out in 2011 had the widest scope in recent years (it covered a total of 22 locations with significant habitats and species) and has also contributed to improvements in baseline data. In relation to the implementation of the Convention, undertaken actions were least successful with the implementation of ecosystem approach, which, with some exceptions, was not widely advocated or endorsed and incorporated in sectoral plans and programmes. The mechanisms to promote general information, education and to consult the public before approving projects that may affect protected areas are being strengthened.

Actions were also undertaken to revise BSAP and align national targets with the Strategic Plan for Biodiversity 2011-2020 and Aicihi targets, and to prepare Fifth National Report (supported through GEF/ UNDP funds).

3.4 Effectiveness of mainstreaming biodiversity into relevant sectoral and cross-sectoral strategies, plans and programmes

Biodiversity was given a prominent place in the cross-cutting plans and strategies, including NSDS and a more recent national development plan – Development Directions of Montenegro 2013 – 2016 (DDM)[19]. DDM determined priorities and measures for 18 policy areas necessary to achieve smart, sustainable and inclusive growth (a reference to the EU strategy *Europe 2020*), paying particular attention to the development of green economy. The DDM policy areas and related objectives of interest for biodiversity include:

- Energy: Meet the needs for energy by minimizing costs and environmental impact; increased energy efficiency, increased security and quality of the electricity power supply.
- Agriculture and rural development: Sustainable resource management, stable and safe food supply, improved standard of living for the rural population.
- Forestry: More efficient use of forest resources, ensuring long-term resistance and productivity of forests.
- Environment: Nature and biodiversity protection, minimizing air pollution, protection of water quality.

When it comes to specific sectors, overview of the BSAP implementation (section 3.5) and other sources lead to a conclusion that least success with mainstreaming biodiversity was achieved in energy sector and spatial planning. Energy strategy (adopted document as well as the draft updated strategy) and spatial plans for development of large energy facilities have failed to provide for adequate assessment of important biodiversity in proposing specific energy development projects. This in particular refers to planned utilisation of hydropower. Similarly, detailed spatial plans in the coastal region have designated excessive construction areas without due considerations of impacts future urbanisation allowed through such planning could have on valuable coastal ecosystems. Mainstreaming of biodiversity in fishing and hunting strategies and plans is not satisfactory and is to a large degree impeded by lack of reliable baselines data. Water resources planning and management is also characterised by weak integration of requirements to protect biodiversity (an example is issuance of concessions for the extraction of materials from river courses).

In the transport sector, significant improvement compared to previous practices is observed (impact assessments for reconstruction or expansion of transport infrastructure), however much remains to be done to adequately address negative impacts of transport on biodiversity, in particular for marine ecosystems. Measures to protect autochthonous plant and animal varieties are integrated in relevant agricultural plans and programmes but their implementation needs to be improved, and the same applies for measures to control pollution from agriculture. Most progress with mainstreaming biodiversity has been made in tourism and forestry sectors, even though the progress is more visible on strategic than on operational level. There are still numerous examples of planned development of tourist capacities and expansion of forest exploitation areas at the expense of valuable biodiversity where efficient conflict resolution mechanisms are lacking.

19 Poverty reduction and equity issues are addressed through different overarching documents (such as the DDM), as there is no poverty reduction strategy *per se*. Poverty is also addressed through the implementation of Millennium Development Goals on the national level. According to the last MDG report (published in 2013), poverty rates increased significantly in 2010 and 2011 compared to the lowest levels recorded in 2008. With 9.3% of Montenegrin population living below the poverty line in 2011, the country was rather far from reaching the MDG target (poverty rate of 5.6%) in 2015.

As already mentioned, illegal/ unpermitted activities in construction, forestry, water management, hunting and fishing undermine some of the results reached due to mainstreaming of biodiversity into sectoral policies and management plans.

The main tools used for mainstreaming are impacts assessments – both at the level of strategies and plans (Strategic Environmental Assessments or SEA) and on project level (Environmental Impact Assessment or EIA). Even though an upward trend is evident in the quality of the assessments and related process (including public participation) there is a number of weaknesses that reduce the potential these instruments have in providing for appropriate assessment of impacts and identification of adequate protection measures. The weaknesses are mainly related to the lack of data on biodiversity, low capacity of impact assessment practitioners and competent authorities, and failure to fully consider and integrate comments/ suggestions received from various stakeholders. As a rule, spatial planning potential to serve as an instrument for mainstreaming biodiversity is not utilised. Ecosystem approach is rarely considered in development of sectoral policies and plans.

Preliminary identification of habitats and species likely to be exposed to the strongest pressures from climate change (e.g. karst habitats, reptiles and amphibians) has been done under the Initial National Communication (2010) to the UNFCCC. A range of potential impacts on different biodiversity components has also been identified. Second National Communication (draft from February 2014) did not include further analysis of biodiversity vulnerability to climate change, however it does contain highly relevant information (on potential changes in precipitation, temperatures etc.) for planning biodiversity protection measure in the context of climate change. As mentioned before, forests represent an important carbon sink and are therefore significant for climate change mitigation (as well as adaptation measures) too. Further efforts are needed to identify and utilise synergies to aid implementation of both biodiversity and climate change conventions on the national level. Implementation of the UNCCD (United Nations Convention to Combat Desertification) is in an early stage as the GEF/ UNEP project aiming to support preparation of the National Action Programme for the protection of land (in line with the 10-year strategy to enhance the implementation of the UNCCD) has been approved last year. The process will be an opportunity to identify and further develop synergetic measures between the three UN Conventions.

3.5 Progress with the implementation of 2010 NBSAP

Action Plan of the National Biodiversity Strategy 2010 – 2015 contains 54 measures and activities grouped under seven themes corresponding with the key challenges identified in the process of BSAP drafting. Based on the regular annual reports (in particular the Third Annual Report published by the Environmental Protection Agency in November 2013), other available sources and consultations, an assessment of the extent to which Action Plan has been implemented was made (detailed overview is presented in the table in Annex 3). In addition to providing a brief description of undertaken activities and achievements, an attempt was made to rate the overall progress in implementing each of the 54 measures by assigning appropriate grades ranging from:

- no progress (for measures and activities where implementation did not start);
- poor progress (where some efforts have been made but given the planned scope and timing for implementation, achieved results are far below intended level);
- moderate progress (in cases where provisions have been created and a certain level of activities completed, yet the overall intent of the measure is half way to being fully achieved);

- satisfactory (measures/ activities are close to being fully achieved); and
- good progress (for fully implemented measures/ activities).

Several BSAP measures are fully implemented after three years of implementation, while as for around one fifth of the total number of measures there was no progress whatsoever. Planned strengthening of biodiversity baselines data and of the monitoring programme are some of the examples where there was either no progress or where achievements were rather modest. For example, there were no activities on preparation of Red Books of species due to lack of funds. A long term programme for biodiversity research was not prepared and despite the BSAP measure calling for expanded scope and increased funding for biodiversity monitoring programmes, an opposite trend (decrease in funding and covered areas) was evidenced. Nevertheless, biodiversity monitoring programmes and data collection performed through them did contribute to the overall level of baseline information on biodiversity in Montenegro (this is particularly true for 2011 monitoring programme performed at 22 locations).

For majority of BSAP measures, moderate progress was achieved. This includes progress with inventories of species (endemic, protected, invasive) and establishment of ecological network (Natura 2000), development of capacities for biodiversity protection and its sustainable use (despite proliferation of post-graduate university courses in this area), biodiversity protection action planning on local level, public participation in biodiversity related decision making, analysis and integration of climate change concerns etc. Implementation of several measures related to prevention and mitigation of pressures on ecosystems – BSAP theme 4 – has also been assessed as moderately successful (including activities to combat illegal forestry activities, research of forest habitats, effectiveness of SEA and EIA and assessment of acceptability of forestry and water use interventions, preparation of the remaining fisheries assessments and others). In general, implementation of measures under theme 4 has been rather weak. Under the theme 5 – biodiversity mainstreaming – implementation of majority of activities (close to 60%) was also assessed as having moderate progress so far. As for the specific sectors, the least was achieved with mainstreaming biodiversity in energy and spatial planning. Efforts to mainstream biodiversity into sectoral policies and plans are

evident for tourism, forestry and transport, yet more remains to be done to ensure that strategic guidelines are adequately translated to the operational level and implemented. Inter-sectoral cooperation also needs to be improved.

Satisfactory progress was achieved with development of the legal framework and alignment with the EU legislation (which is the country's top priority), as well as with some activities in forestry (e.g. protection of seed stands, GIS application etc.), identification of marine habitats significant for protection, efforts to develop eco-tourism and mainstream biodiversity in transport development plans (the latter more so in comparison with the previous period than in terms of overall success), preparations to proclaim new protected areas etc. It is also worth of mentioning that substantial contribution to the implementation of BSAP measures and activities was provided through several important projects such as regional project dealing with Ohridsko, Prespansko and Skadarsko Lakes, Coastal Area Management Programme (CAMP), IPA projects, GEF/ UNDP biodiversity projects in Montenegro, projects aiming to improve forest management and planning, and others. More details on some of these projects and related initiatives are provided in the following paragraphs.

The CSBL (Conservation and sustainable use of biodiversity at Lakes Prespa, Ohrid and Shkoder) project, for example, provided technical assistance to administrative entities and public authorities responsible for environmental monitoring and management of protected areas, as well as to users of biological resources. Results of the CAMP project include detailed vulnerability assessment of the coastal zone including assessments of coastal and marine biodiversity and are meant to strengthen information basis for spatial planning.

The activities on establishing Natura 2000 network started in 2009 through the cooperation among WWF, Institute for Nature Protection of Montenegro (which became part of the Environmental Protection Agency in 2012) and Daphne - Institute of Applied Ecology. As a result of the project´s activities, the draft reference list of Natura 2000 habitats and species in Montenegro was prepared, using previous knowledge from EMERALD network project[20] and desktop data analysis. The draft version of the Catalogue of Natura 2000 Habitats for Montenegro was also prepared and used for the first field inventory training and subsequent mapping of previously identified Natura 2000 habitats. In spite of the undertaken activities, the results did not allow for full identification and mapping of Natura 2000 sites.

In the framework of IPA 2012 – 2013, project titled *Strengthening of the environmental protection system in Montenegro* was approved. The project contains two components: preparation of the national approximation strategy and establishment of Natura 200o network. Its overall objective is to provide support for the achievement of accession goals by assisting in the harmonization of Montenegrin legislation with the EU environmental *acquis*. In the field of nature protection, it will lay foundations for future establishment of the Natura 2000 network.

Other projects that have contributed to national biodiversity protection goals include IPA twinning project *Support to environmental management in Montenegro* (realized in cooperation with the Italian Ministry of the Environment, Land and Sea) and the EU funded RENA (Regional Environmental Network for Accession) project which assisted the beneficiary countries in exchange of information and experience related to accession process. In October 2013, a three-year long continuation of the RENA project called ECRAN (Environment and

20 Proposal of EMERALD sites (in line with Bern Convention on the Conservation of European Natural Habitats and Wildlife) for Montenegro consisted of 32 areas of special conservation interest (ASCI). Creation of the EMERALD Network in Montenegro started in 2005 within the project funded by Council of Europe and implemented by the previous Ministry of Environmental Protection and Physical Planning in cooperation with Montenegrin experts. In 2008, the project was finished and the standard forms completed for the most of the EMERALD network sites (central EMERALD database was located in the then Institute for Nature Protection). Meanwhile, EMERALD data base has been reviewed (quality control check) by the Council of Europe and then improved / updated.

Climate Regional Accession Network) was launched. One of its activities is establishment of the Nature Working Group.

UNDP office in Montenegro has been implementing (2009 – 2014) 2 GEF projects related to protected areas planning and management:

- *Strengthening the financial sustainability of protected areas in Montenegro* (PAF) aiming to enable legal framework for improving financial sustainability of PAs and ensure their revenues; and
- *Strengthening the sustainability of the protected area system of Montenegro* (PAS), the aim of which was to expand and rationalize the PA system to ensure better habitat representation and their more secure conservation status as well as to strengthen the capacity of PA institutions to effectively manage a more representative protected area system.

Based on the assessment of the level of implementation of the Action Plan, it can be said that mixed progress has been achieved with attainment of BSAP operational objectives. Valuable improvements have been recorded in the efforts to identify important biodiversity and protect all the biodiversity components (BSAP operational objective 1). Should the ongoing activities be completed as planned, reaching (and exceeding) the target of 10% for inland ecosystems is likely (less so for 10% of coastal and marine ecosystems). Alignment with the EU legislation (operational objective 5) is another BSAP objective where significant progress was made, but the implementation of new legislation remains weak.

Efforts to develop capacities have yielded some results regarding institutional arrangements and capabilities/ competences to implement policies (even though they are still on an insufficient level). Similarly, movements in the right direction were recorded in the areas of education and public participation. Nevertheless, much remains to be done to educate all the stakeholders and raise the level of awareness on the importance of biodiversity in Montenegro, as well as to create conditions for full and effective engagement of the public in decision making processes relevant for biodiversity management (objectives 6 and 7).

Limitations of biodiversity monitoring programmes (that is low availability of data series for given locations, habitats and species) make the assessment of progress with measures to eliminate/ mitigate pressures (objective 2) more difficult if not impossible. Nevertheless it can be said that governance weaknesses and strong pressures to accelerate economic growth (in the period after the 2009 recession and with growing poverty rates) hampered implementation of measures related to this objectives and that pressures on biodiversity did not decrease significantly in recent years. Availability of indicators (objective 3) is also affected in a negative way by monitoring weaknesses. Assessment of progress with implementation of the Action Plan measures and BSAP operational objectives is also hampered by the lack of specific process indicators and quantified targets that would allow for a more precise estimation of the progress made. Funds for biodiversity protection have not risen during the past few years (as was envisaged under BSAP operational objective 4). This especially holds for allocation of revenues from public sources where biodiversity continues to receive low attention amidst tight budgetary restrictions and competing priorities.

Reports on BSAP implementation during the past three years identified several barriers for successful implementation of the Strategy and its Action Plan, including: low level of priority assigned to environmental protection; low level of restrictions and incentives related to biodiversity protection; demographic, social and economic changes having an impact on biodiversity; weak alignment of legal and institutional responsibilities; lack of biodiversity awareness (on the policy and general public's levels); and low level of public involvement in biodiversity protection. Implementation was also hampered by inadequate information (research, monitoring) for decision making.

4 Part III - Progress towards the 2015 and 2020 Biodiversity Targets

4.1 National biodiversity objectives, Millennium Development Goals and Aichi targets

As shown in the previous section (3.5), progress with the implementation of BSAP and national biodiversity objectives and targets is moderate, and a significant share of measures included in the AP is not likely to be implemented by 2015. A possible exception are protected areas: if the on-going preparatory activities are completed as planned, 10% target for the terrestrial ecosystems could be achieved and substantially exceeded; protection of 10% of the coastal and marine ecosystems does not seem likely by 2015 (the on-going preparations can, however, get the country much closer to this target too).

Implementation of the Strategic Plan for Biodiversity 2011-2020 is in an early stage in Montenegro. Aichi targets will only be integrated into the national policies as a part of the current BSAP revision. Due to weaknesses of the monitoring programme and low availability of data, quantified/ indicator based assessment of the progress made on Aichi targets is not possible at the moment. However, as some of the important building blocks of the comprehensive biodiversity protection system have been laid down and as the country advanced with its EU accession agenda, it is possible to say that substantial steps forward have been made in relation to Aichi targets 17 (participatory preparation and implementation of BSAPs), 11 (expansion of the PA system and its ecological representativeness) as well as with targets 1 and 2 that refer, respectively to raising awareness on biodiversity values and importance of its sustainable use, and to integration of biodiversity into sectoral development plans on national and local levels.

In the process of adapting Millennium Development Goals (MDGs) to the national context, two national objectives (with several targets/ indicators) were formulated for MDG 7. Objectives and targets particularly relevant for biodiversity protection are:

- Objective 1: Integrate principles of sustainable development into country-level policies and reverse the loss of environmental resources (targets/ indicators: increase the share of protected terrestrial and marine ecosystems to 10% and 3% respectively; increase in areas under forest to 54% of the national territory);
- Objective 2: By 2015, reduce the proportion of people without access to drinking water and sanitation (target/ indicator: 85% connection to sewerage network and treatment of 60% of the total discharged wastewater).

The latest MDG report[21] concluded the country was on track to meet biodiversity target for terrestrial protected areas by 2015. As there was no actual progress with proclamation of MPAs during the past few years, the MDG report assessed that probability of reaching the 3% target for marine ecosystems was low. The already quoted (in the Fifth National Report) results of the National Forest Inventory show that MDG target for forested areas has already been exceeded (60% actual forest area compared to 54% target). This success cannot, however, be attributed to targeted policies and good forest management practices alone. Factors that have likely contributed to substantial increase in forested area also include poor evidence and underestimated forest areas in the plans and documents that served as a basis for forest management prior to completion of forest inventory in 2013.

21 Millennium Development Goals Report 2010 – 2013

After several wastewater treatment plants start working, which is expected to happen by 2015[22], a significant increase in the percentage of treated wastewater will be achieved (from the current 18%). Therefore, the MDG report concluded that the achievement of or getting near to the target value of 60% was possible.

The MDG report also analysed the main constraints preventing faster progress towards the achievement of all the MDG 7 targets and identified the following factors: insufficient support to environmental protection plans and programmes; ineffective implementation of regulations (in almost all the environmental sectors, including the impact assessments), and inadequate application of mechanisms for the involvement of stakeholders in policy development. Pressures to generate quick economic benefits, inadequate capacities for in-depth assessments and balancing of environmental and social against economic impacts were singled out as other important factors, together with prolonged support for environmentally unsustainable projects and activities.

Specific constraints for expansion of the protected areas system include insufficient capacities for resolving potential conflicts in the process of designation and placing certain territory under protection through consultations with all the stakeholders, as well as inabilities to secure necessary resources for adequate management. The main challenges in maintaining current situation, where a significant part (almost 70%) of the national territory is covered with forests and forest land, are: development of capacity for sustainable planning and forest management (including improvement in the coordination between the parts of administration responsible for forest management and biodiversity protection) and consistent implementation of plans and regulations.

Preparation of high-quality environmental infrastructure project documentation and its review, setting up spatial planning prerequisites for implementation of projects and resolving ownership issues, as well as designing the most favourable project financing models were identified as some of the key constraints for the second MDG 7 objective. Improvements in this area will require large investments: necessary investments for wastewater projects are, for example, assessed at about €560 million by 2028.

National MDG7 objectives and targets are highly compatible with the UNCBD 2020 goals. Challenges the country will face in the efforts to maintain progress in implementing MDGs and especially in fulfilling the overall mission of the Strategic Plan 2011-2020 are very high. Nevertheless, the attainment of the five biodiversity strategic goals is possible, especially in light of changes that will be brought due to EU accession. Identification and implementation of synergetic measures for the three UN Conventions can also contribute significantly to the overall progress. Ensuring that prerequisites for the full implementation of the revised BSAP are met (including increased funding, stronger capacities and higher political backing for the environment and nature protection agenda) is crucial.

4.2 Lessons learned from the implementation of the Convention

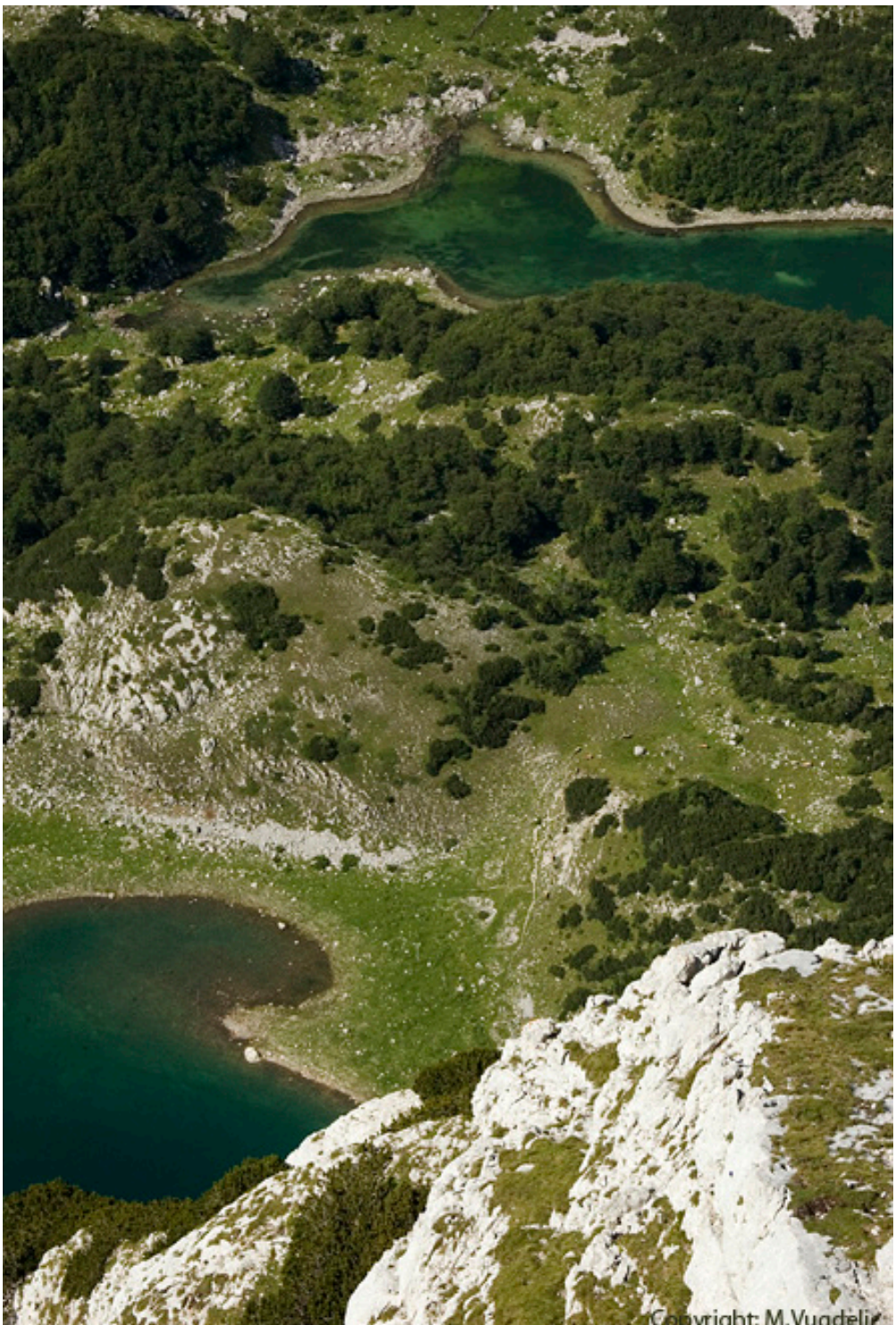
The following can be singled out as the most important lessons learned in the process of implementing Convention on the national level:

- Improved knowledge and data on biodiversity and ecosystem services values can be a powerful argument for stepping up protection efforts and reaching set objec-

22 It is realistic to expect that by that time, wastewater treatment plants in Žabljak, Nikšić, Budva and Herceg Novi will start operating.

tives; assessment of costs (actual and potential) resulting from biodiversity decline can be equally powerful.

- International cooperation and transfer of knowledge has played an important role in the progress made so far; their contribution in the future could and should be stronger.
- Much stronger coordination on the national level, mobilisation of all the stakeholders and utilisation of synergies is needed to achieve national and global strategic goals.
- New financing strategies and instruments are needed; by mainstreaming biodiversity into sectoral polices and plans, costs of biodiversity management can be spread more evenly and thus made more acceptable for decision makers.
- Stronger political support is necessary if more substantial progress is to be achieved in the coming period; linking biodiversity and EU accession objectives can be beneficial to that end.



Appendix 1 – Information on the process of preparing the Report

The first step in the process of preparing the Fifth National Report of Montenegro to the United Nations Convention on Biological Diversity (UNCBD) (hereinafter referred to as the Report) were consultations between the Ministry of Sustainable Development (represented by UNCBD and UNCCD focal point and other staff), Environmental Protection Agency (EPA), Centre for Sustainable Development / UNDP Montenegro and the consultant engaged to compile necessary information and draft the report. A work plan was agreed to and main information sources and questions to be discussed identified. The UNCBD Focal Point and EPA representative played an important role in the drafting process by providing continuous advice and information sources to the consultant. Logistic aspects (e.g. communication, exchange of information, organization of the consultative meeting, etc.) were covered by the Centre for Sustainable Development / UNDP Montenegro.

The consultant used guidance issued by the UNCBD, including Guidelines for the Fifth National Report and presentations from the Regional Workshop for Central Asia and Central and Eastern Europe on the Preparation of the Fifth National Report held in Belarus in January 2014 for methodological approaches and in deciding what questions are possible to cover given the availability of national data. National sources listed in Appendix 2 were used for the Report's substance.

An early draft of the Report was consulted with part of the team working on the revision of the National Biodiversity Strategy with Action Plan.

Consultative meeting involving a wider group of stakeholders was held in March 2014. The representative of the following institutions took part at the meeting:

- Ministry of Sustainable Development and Tourism,
- Ministry of Agriculture and Rural Development,
- Environmental Protection Agency,
- Public Enterprise for National Parks, and
- Centre for Sustainable Development / UNDP Montenegro

The draft was also shared with University and academic institutions (such as Biotechnical Institute) and NGOs.

The main topics discussed and recommendations heard during the consultative meetings are summarised below for each of the three main chapters of the Report.

<u>Part I - An update on biodiversity status, trends, and threats, and their implications for human wellbeing</u>

- Data on certain species/ groups is limited; the number of species under monitoring is being significantly reduced from one year to another.
- A substantial number of groups has not been researched sufficiently, which has an impact on the number of protected species within these groups.
- The list of protected species is based on the currently available data. For these reasons, number of protected species for some groups is very small in comparison to the estimated total number of species within the group. The list of protected species needs to be revised and upgraded.
- Red lists and books have not been developed due to lack of funds.
- Inconsistencies in the data citied in different documents have been noticed. In this

regard, it was suggested that institutions (whose representatives were present at the meeting as well as the University) continue working on consolidation of data.
- Reaching an agreement on the question at which taxonomic rank should protected species be summed up/counted was emphasised as an important issue in order to avoid inconsistencies regarding the number of protected species.
- The participants agreed that the information on valuation of biodiversity and ecosystem services was very highly relevant and that it needed to be emphasized in biodiversity protection discussions in the country as well as in the Report.
- Methodology used for monitoring is consistent and mainly aligned with international requirements and practices, however, due to budget restrictions the number of locations covered by monitoring was reduced and this is the key reason why the monitoring is inadequate. Progressive alignment with EU standards is evident.
- There is a lack of financial and administrative capacities to cover all groups and components of biodiversity.
- Monitoring should be conducted for a period of at least 3 years to allow for some conclusions. Current monitoring is not adequate because there is no continuity and it is often limited to observing the existing state; as such, it is insufficient for assessing the state of species.
- The lack of historical data on biodiversity is one of the reasons why the monitoring is more concentrated on species inventories than on monitoring the state.
- The selection of monitored species is done based on the available funds, knowledge on the existing pressures on the species, as well as based on expert judgements (taking into account international practices and legal framework).
- To determine whether the correct species are being monitored, monitoring needs to be conducted for several years.
- It is very important to translate findings of the monitoring programmes into adequate conservation measures; currently, this is a weak point in biodiversity protection in Montenegro.
- There is insufficient information on the pressures/ threats from invasive species and climate change.
- Karst and caves are specific and important habitats and the types of threats they are exposed to should be listed.
- Economic crisis has put additional pressures on resources.
- Cave ecosystems have not been sufficiently researched due to limited financial resources; various unauthorised/ uncontrolled researches activities add pressures on the underground ecosystems (caves).
- Examples of positive and negative changes in the status of certain species were provided.

<u>Part II – Implementation of the National Biodiversity Strategy and Action Plan and the mainstreaming of biodiversity</u>

- Various institutions have not been actively involved in reporting on the level of progress reached with implementation of BSAP measures. It was therefore difficult to assess the level of Strategy implementation within regular progress monitoring and reporting activities. This is one of the topics that will be addressed while reviewing the strategy.
- Colliding legal and institutional mandates are also a problem for tracking progress with BSAP implementation.
- Participants agreed to check grades indicating the level of progress of implementation assigned to each of the BSAP measures and goals and inform the consultant of any changes that should be made.

Part III - Progress towards the 2015 and 2020 Aichi Biodiversity Targets and contributions to the relevant 2015 Targets of the Millennium Development Goals

- Participants endorsed content of this section of the report.

Comments received during the meeting and through other ways of stakeholder consultations were integrated in the final version of the Report.

Appendix 2 – References

Agencija za zaštitu životne sredine, Informacija o stanju životne sredine u Crnoj Gori za 2010. godinu, 2011 [Environmental Protection Agency, Information on the State of the Environment in Montenegro for 2010, 2011]

Agencija za zaštitu životne sredine, Informacija o stanju životne sredine u Crnoj Gori za 2011. godinu, 2012 [Environmental Protection Agency, Information on the State of the Environment in Montenegro for 2011, 2012]

Agencija za zaštitu životne sredine, Informacija o stanju životne sredine u Crnoj Gori za 2012. godinu sa predlogom mjera, 2013 [Environmental Protection Agency, Information on the State of the Environment in Montenegro for 2012 with Proposal of Measures, 2013]; sve Informacije o stanju životne sredine dostupne na http://epa.org.me/index.php/dokumenti/izvjestaji [all State of the Environment Reports available from http://epa.org.me/index.php/dokumenti/izvjestaji]

Agencija za zaštitu životne sredine, Treći izvještaj o implementaciji Nacionalne strategije biodiverziteta sa akcionim planom, 2013 [Environmental Protection Agency, Third Report on Implementation of the National Biodiversity Strategy with Action Plan, 2013]

EC, Screening Report Montenegro: Chapter 27 – Environment and Climate Change, 2013

Emerton, L., Montenegro: the Economic Value of Biodiversity and Ecosystem Services, 2013

Enfral Consulting, Post-disaster Needs Assessment (PDNA) following the November – December 2010 Flooding in Montenegro, report prepared for the Government of Montenegro and the European Investment Bank, 2011

Environmental Protection Agency, Indicator-based State of the Environment Report of Montenegro, 2013; available from http://epa.org.me/index.php/component/content/article/87-azzs/388-izvjestaj-o-stanju-zivotne-sredine-na-bazi-indikatora

Human Dynamics (consortium leader), Monitoring transposition and implementation of the EU environmental and climate acquis: Montenegro Progress Report 8, April 2012 - March 2013, report prepared under ECRAN project, 2013

Keča, N., Osjetljivost šumarskog sektora Crne Gore na štetočine i biljne bolesti, izvještaj pripremljen za Ministarstvo održivog razvoja i turizma i UNDP, 2013 [Keča, N., Sensitivity of Forestry Sector in Montenegro to Pests and Forest Illnesses, report prepared for the Ministry of Sustainable Development and Tourism and UNDP, 2013]

Matović, B., Analize i projekcije uticaja klimatskih promjena korišćenjem regionalnog klimatskog modela na buduće rasprostranjenje i rast glavnih vrsta drveća u Crnoj Gori, izvještaj pripremljen za Ministarstvo održivog razvoja i turizma, Ministarstvo poljoprivrede i ruralnog razvoja i UNDP, 2013 [Matović, B., Analysis and Projections of Climate Change Impacts by Using the Regional Climate Model on Future Distribution and Growth of the Main Tree Species in Montenegro, report prepared for the Ministry of Sustainable Development and Tourism, Ministry of Agriculture and Rural Development and UNDP, 2013]

Ministarstvo ekonomije, (nacrt) Strategija razvoja energetike Crne Gore do 2030. godine (Zelena knjiga i nacrt Bijele knjige), 2012 [Ministry of Economy, (draft) Strategy for Energy Sector Development in Montenegro until 2030 (Green Book and draft White Book), 2012]

Ministarstvo održivog razvoja i turizma, (nacrt) Drugi nacionalni izvještaj Crne Gore o klimatskim promjenama ka Okvirnoj Konvenciji o klimatskim promjenama Ujedinjenih Nacija (UNFCCC), 2013 [Ministry of Sustainable Development and Tourism, (draft) Second National

Communication of Montenegro on Climate Change to the United Nations Framework Convention on Climate Change (UNFCCC), 2013]

Ministarstvo održivog razvoja i turizma, (nacrt) Nacionalna Strategija upravljanja otpadom, 2013 [Ministry of Sustainable Development and Tourism, (draft) National Waste Management Strategy, 2013]

Ministarstvo održivog razvoja i turizma, (nacrt) Revidirana nacionalna strategija biodiverziteta sa Akcionim planom za Crnu Goru za period 2014 – 2020, 2013 [Ministry of Sustainable Development and Tourism, (draft) Revised National Biodiversity Strategy with Action Plan 2014 – 2020, 2013]

Ministry for Spatial Planning and Environment, Fourth National Report of Montenegro to the Convention on Biological Diversity, 2010

Ministry for Spatial Planning and Environment, Initial National Communication on Climate Change of Montenegro to the United Nations Framework Convention on Climate Change (UNFCCC), 2010

Ministry for Spatial Planning and Environment, National Biodiversity Strategy with Action Plan 2010 – 2015, 2010

Ministry of Sustainable Development and Tourism and UNEP/ MAP, Coastal Area Management Programme: Assessment of General Vulnerability, 2013

Ministry of Sustainable Development and Tourism, Report on Millennium Development Goals in Montenegro 2010 – 2013, 2013

Ministry of Tourism and Environmental Protection, National Strategy of Sustainable Development of Montenegro, 2007

Monstat, Statistički godišnjak 2013 [Monstat, Statistical Yearbook 2013]

Pripremni materijali za Nacionalnu strategiju održivog razvoja (proces revizije 2013 – 2014) [Preparatory materials for the National Sustainable Development Strategy (revision process 2013 – 2014)]

Rješenje o stavljanju pod zaštitu pojedinih biljnih i životinjskih vrsta (Službeni list RCG 76/06 od 12. decembra 2006. godine) [Resolution on placing under protection certain plant and animal species (Official Gazette of the Republic Montenegro 76/06 from 12 December 2006)]

UNDP Montenegro and ISSP, The Economic Value of Protected Areas in Montenegro, Podgorica, 2011.

Vlada Crne Gore, Nacionalni savjet za održivi razvoj, Analiza o ostvarenjima i izazovima ekološke države: 20 godina ekološke Crne Gore, 2011 [Government of Montenegro, National Council on Sustainable Development, Analysis of Achievements and Challenges of Ecological State: 20 Years of Ecological Montenegro]

Vlada Crne Gore, Pravci razvoja Crne Gore 2013 – 2016. godine, 2013 [Government of Montenegro, Development Directions of Montenegro 2013 – 2016, 2013]

World Travel and Tourism Council (WTTC), Travel and Tourism Impact 2011: Montenegro, 2011

Appendix 3 – Implementation of the NBSAP

Assessment of the National Biodiversity Action Plan's implementation in the period 2010 – 2013

No	Measures/ activities	Implementation	
		Description	Progress
BSAP theme 1: Strengthening documentation baselines on biodiversity protection			
1	Intensification of research to complete scientific inventories, in particular prepare: a) book of Montenegrin flora; b) vegetation map; c) book of bird fauna.	There were no activities on preparation of Red Books of species due to lack of funds. Similarly, due to limited capacities (human and financial), there were no activities on the preparation of vegetation map. Some progress was made with identification of species listed in the Annex of the EU Habitats Directive in the field	Poor
2	Development of a long term programme for biodiversity research	Such programme was not developed. Annual monitoring programmes were executed by different institutions based on tendering. Since 2012, Nature Protection Institute has been incorporated into Environmental Protection Agency (EPA) which was responsible for conducting 2013 monitoring	No progress
3	Revision of the scope and increased funding for biodiversity monitoring programmes	Opposite developments (downscaling of the programme) were observed. In 2013, biodiversity monitoring was performed for selected locations (4 of them), which was not sufficient to fulfil national and international monitoring and reporting obligations	No progress
4	Inventories and mapping of endemic and protected plant and (optional) animal species	Inventories were completed for sites that were part of monitoring the state of endemic and protected species.	Moderate
5	Identification and development of the national Natura 2000 network	Some activities implemented; preparations to implement a new IPA (Instrument for Pre-Accession Assistance) project that will cover remaining (bulk of) activities is under way.	Moderate

No	Measures/ activities	Implementation	
		Description	Progress
6	Collection and analysis of data on equitable distribution of benefits from genetic diversity	No activities; activities on ratification of Nagoya Protocol have been initiated.	Poor
7	Planning and implementing measures for the protection of seed stands	Collection of seeds for different species performed during 2012, in line with relevant plans	Satisfactory
8	Preparation of national habitats classification (catalogue)	Draft habitats catalogue prepared in line with the provisions of EU Habitats Directive (will be further revised based on field data to be collected through the forthcoming IPA project)	Moderate
9	Inventory of invasive (primarily plant) species	Inventories were done for locations covered by the biodiversity monitoring programme; further efforts are needed.	Moderate
BSAP theme 2: Development and strengthening of institutional and human capacities for biodiversity protection			
10	Educational and training programmes on protection and sustainable use of biodiversity	Several post-graduate study programmes exist at different universities	Moderate
BSAP theme 3: Improving efficiency of the legal and institutional framework for biodiversity protection/ protected areas (PAs)			
11	Development of Biodiversity Action Plans in all the municipalities	Seven municipalities (one third of the total number) have either adopted LBAPs by 2013 or have started the process.	Moderate
12	Adoption of bylaws under the Law on Nature Protection, alignment of sectoral regulations, regulations on GMOs	Regulations on GMOs have been adopted. Progress with alignment of sectoral regulations is somewhat slower.	Satisfactory
13	Awareness raising campaign for compliance with nature legislation	Several awareness raising campaigns and promotional activities organised by the Ministry of Sustainable Development and Tourism (MSDT), Environmental Protection Agency and NGOs	Satisfactory

No	Measures/ activities	Implementation	
		Description	Progress
14	Implementation of the nature segment of the National Programme for Integration into the EU	Capacity building project on implementation of the EU nature protection legislation completed; initial phase of IPA project on establishment of Natura 2000 is underway. First steps in the negotiation process with the EU undertaken.	Moderate
15	Development of mechanisms for public participation in biodiversity related decision making	Mechanism strengthened through Amendments to the Law on Nature Protection (Official Gazette of Montenegro 51/08 and 64/13). Public participation is enabled in the adoption of regulations, strategies and plans as well as in SEA and EIA processes. The effectiveness of public involvement in decision making needs to be improved.	Moderate
16	Communication strategy to promote BSAP and awareness raising campaigns	Some activities implemented through various projects (e.g. *Sustainable Use of Biodiversity of Ohridsko, Prespansko and Skadarsko Lakes; Coastal Area Management Programme*)	Poor
17	Preparation of National Action Plan for Climate Change	Activities towards preparation of the National Climate Change Strategy are under way; draft Second National Communication to the UNFCCC has been released in February 2014.	Moderate
BSAP theme 4: Prevention and mitigation of pressures on ecosystems			
18	Preparation of the Programme for Protection of Forest Ecosystems in existing and planned PAs	Capacity building activities (training) on methodologies for integration of Natura 2000 requirements into forest management planning were organised.	Poor
19	Combating illegal activities in forestry	National Action Plan to combat illegal logging was adopted; implementation is underway	Moderate
20	Conducting research for forest habitats	Desk studies and part of field preparatory activities completed.	Moderate
21	Taking part in the activities under the National Forest Inventory	Inventory completed in September 2013, led by the Ministry of Agriculture and Rural Development (MARD). The MSDT was involved in providing information and as an observer.	Moderate
22	Establishment of forest information system and further development of GIS in forestry	GIS implemented in the MARD, Forest Administration headquarters and two branches. Priorities for development of specialised forestry applications have been identified, while existing applications have been improved.	Satisfactory

No	Measures/ activities	Implementation	
		Description	Progress
23	Conducting monitoring and research for water and wetland habitats	Limited monitoring and research is being implemented.	Poor
24	Increased funding to monitor forest ecosystems (including forest health)	Funding has not increased; monitoring continued to be carried out on a limited scale as a part of biodiversity monitoring.	No progress
25	Integration of measures and requirements for biodiversity protection in regulations and plans for economic sectors	Addressed through bylaws and plans	Moderate
26	Identification of marine habitats significant for biodiversity protection	Several activities implemented, including support for the establishment of Katič MPA (Marine Protected Area). MedMPAnet project enabled field research of marine biodiversity, mapping of important habitats and species, and identification of potential zones for protection (7 locations were identified). GEF/ UNDP supported feasibility study for Platamuni MPA is underway.	Satisfactory
27	Development of methodology for determining abundance of game population in all the hunting areas	Without activities	No progress
28	Preparation of action plans for certain game species	Has not started	No progress
29	Identification of wild plant and animal species necessitating action plans and/ or protection programmes; adoption and implementation of action plans for critically endangered domestic breeds and varieties	Without activities	No progress
30	Implementation of SEAs and EIAs and assessment of acceptability of interventions, concession and works in forestry and water management	SEAs and EIAs are implemented for the plans, programmes and projects requiring these assessments (recent example is SEA for the Strategy with Development Plan for Forests and Forestry). The effectiveness of these instruments in determining acceptability from nature protection perspective needs to be improved.	Moderate

No	Measures/ activities	Implementation	
		Description	Progress
31	Preparation of the remaining fisheries baselines, Skadarsko Lake as a priority	Report on the state of fish stocks (composition of communities, abundance of species and fluctuation during the year) will be completed through the project *Sustainable Use of Biodiversity of Ohridsko, Prespansko and Skadarsko Lakes.* This is a significant contribution, however much remains to be done for the full assessment of fish stocks and setting up of fishing quotas.	Poor
BSAP theme 5: Mainstreaming biodiversity into sectors: a) tourism; b) spatial planning, and c) construction of large infrastructure			
32	Ensure functioning of the SEA and EIA system and mainstreaming of biodiversity protection	SEAs and EIAs regularly carried out, however there is a large room for improvements in assessment of impacts on biodiversity. Lack of adequate information on biodiversity and its value as well as insufficient inter-sectoral cooperation are the main factors contributing to the observed weaknesses.	Moderate
33	Regulate issuance of licences for SEA and EIA and compile a list of authorised persons and companies	Regulations and procedures are in place.	Good
34	Integration of measures and guidelines for biodiversity protection into strategies, regulations, plans and programmes for tourism, spatial planning and development of large infrastructure	Provisions are in place, measures and guidelines for biodiversity protection are identified and integrated (e.g. through the SEA processes). It is necessary to strengthen further the SEA and planning systems and improve inter-sectoral cooperation.	Moderate
35	Identification of potential areas for ecotourism development	Continuous efforts on development of ecotourism are present.	Satisfactory
36	Prescribe standards and criteria for development of eco-tourism in PAs	The Law on Tourism (Official Gazette of Montenegro 61/10) sets a basis for development of environmentally friendly tourism facilities (eco-lodge) in PAs or in their vicinity; guidelines for development of such objects are also available.	Moderate

No	Measures/ activities	Implementation	
		Description	Progress
37	Integration of measures and guidelines for biodiversity protection into tourism strategies and plans	Overall, tourism development strategy endorses high level of nature protection by calling for establishment of ecological network in line with international and EU regulations, development and implementation of PA management plans, and establishment of green corridors to connect PAs. The Law on Tourism (Official Gazette of Montenegro 61/10) includes principles of sustainable tourism development (including for example optimal use of natural resources, maintenance of important ecological processes etc.). Operationalization of these guidelines and principles needs to be improved.	Moderate
38	Establishment of a system to monitor number of visitors and their impacts in PAs (national parks as a priority)	Numbers of visitors to the national parks are monitored, yet there is no system to quantify/ assess their impacts.	Moderate
39	Protection of biological and landscape diversity from negative impacts of tourism in the coastal region (preparation of a study)	Outputs of the Coastal Area Management Programme (CAMP) implemented by the MSDT and UNEP/ MAP make a significant contribution towards implementation of this measure. Detailed biodiversity study with GIS mapping of habitats and species and assessment of vulnerability was produced to support spatial planning.	Good
40	Within PAs management plans (primarily national parks), prepare plans for: management of tourist activities; guide services; interpretation of biodiversity; and education of visitors	Measures to manage tourist activities are integrated in the national parks' five years management plans, and are implemented through annual management programmes. Good progress has been also achieved with educational programmes for visitors (e.g. visitor centres). More remains to be done with interpretation of parks' values and development of guide services.	Moderate
41	Preparation of a Plan for protection of biological diversity from negative impacts of tourism in protected areas	Without activities	No progress
42	Prescribe an obligation to prepare biodiversity and nature protection baselines in developing spatial plans	Biodiversity baselines have been prepared for the development of Spatial Plan of Montenegro. Results of CAMP project will be used in preparation of the coastal area spatial plan. However, this is not prescribed as an obligation for all spatial plans.	Moderate

No	Measures/ activities	Implementation	
		Description	Progress
43	Make evaluation of space from biodiversity/ nature protection aspect a mandatory part of Terms of Reference for spatial plans preparation	Implemented	Good
44	Provide for integration of nature/ biodiversity protection measures in the main sectors covered in the spatial plans	The activity is being continuously implemented, with various levels of success for various spatial plans.	Moderate
45	Integration of requirements to protect biodiversity/ nature in the plans for transport infrastructure development	Biodiversity protection requirements are increasingly taken into account in planning transport infrastructure development (recent examples include feasibility study and SEA for Bar – Boljare highway, reconstruction of regional roads, rehabilitation of parts of the railroad network, preparation of studies to assess risk from marine pollution form vessels and sensitivity mapping of the sea, etc.).	Satisfactory
46	Analysis of impacts of transport infrastructure on endangered species of birds from wetland and water habitats	No significant activities	No progress
47	Cooperation between environmental protection and transport sectors on establishment of biodiversity monitoring	Without activities	No progress
48	Integration of measures to protect species, habitats and landscapes in planning energy facilities	Addressed through SEA and EIA process; as mentioned before (measure 32) improvements are needed to ensure safeguarding of biodiversity, including in the area of inter-sectoral cooperation	Moderate
49	Strengthening principles of biodiversity protection in preparing EIA studies for Morača hydropower plants	Additional biodiversity surveys were initiated after the release of draft Detailed Spatial Plan and related SEA for Morača hydropower system. EPA (as the competent authority) has not received request to evaluate final SEA yet.	Moderate

No	Measures/ activities	Implementation	
		Description	Progress
BSAP theme 6: Placing new areas under protection			
50	Protection of new areas to reach National Sustainable Development Strategy's objective of 10% of territory under protection (reaffirmed in the Spatial Plan of Montenegro)	A range of activities implemented, including preparatory studies for regional parks Piva and Komovi. Feasibility study for Platamuni MPA is underway.	Satisfactory
51	Revision of status, category, protection regime and boundaries of the existing protected areas	Activities are on-going, including local level initiatives and GEF/ UNDP supported initiative to re-evaluate status of the existing PAs. Stepping up of efforts is needed (including the local level) to implement this activity by the end of 2015.	Moderate
BSAP theme 7: Improved efficiency in managing PAs			
52	Determination of managers for all the protected areas	Amendments to the Law on Nature Protection (Official Gazette of Montenegro 51/08 and 64/13) contain provisions on setting up of PA managers. At the moment, PA managers are operational just for the national parks and few areas protected under local level decisions.	Poor
53	Participation of local population in protected areas management structures, primarily for national parks	Legal provisions are in place, practical implementation needs to be improved.	Moderate
54	Assessment of carrying capacity of the national parks	Without activities	No progress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