NON TECHNICAL SUMMARY

Strategic Environmental Assessment (SEA) of the :

IPA CBC PROGRAMME 'GREECE – THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA' 2014 - 2020

General Information

Having regard, the specifications of the signed contract "Expert - Consultant for the elaboration of the Ex Ante Evaluation and the Strategic Environmental Assessment (SEA) of the new IPA II Cross – Border Cooperation Program "Greece– The former Yugoslav Republic of Macedonia 2014 – 2020"" between the Managing Authority of European Territorial Cooperation Programs of the Ministry of Development and Competitiveness and the Expert – Consultant PLANET S.A., the Expert – Consultant has elaborated the **"SEA of the IPA II Cross-Border Cooperation Program "Greece – The former Yugoslav Republic of Macedonia 2014 – 2020""**.

The **IPA II Cross-Border Cooperation Program "Greece – The former Yugoslav Republic of Macedonia 2014 – 2020 follows the** follows the provisions set in the Legislative framework of IPA II, namely Regulation 231/2014 and its implementing Regulation 447/2014.

The overall strategy statement of the IPA CBC Program is:**" to enhance territorial cohesion by improving living standards and employment opportunities holding respect to the environment and by exploiting the natural resources for tourism"**.

The eligible area includes 9 NUTS III regions along the border of the two countries, Florina, Pella, Kilkis and Serres, Thessaloniki on the Greek side and Pelagonia, Vardar and Southeast and Southwest from the side of the former Yugoslav Republic of Macedonia.

The Program is in line with key environmental initiatives that characterize and determine its operational context and interconnected with the following policies / Programs:

Global Initiatives: Rio, +20, the Kyoto Protocol

EU Policies: Europe 2020, Seventh EU Environmental Action Program,

Thematic Programs: the Territorial Agenda of the European Union 2020, Horizon 2020, Roadmap for moving to a competitive low carbon economy in 2050, Life + etc

Cross Border Programs: Greece - Albania IPA II CBC Cross Border Program 2014-2020, FYROM – Albania IPA II CBC Program 2014 – 2020,

Transnational Programs: MED 2014-2020, South East Gateway 2014-2020 Balkan-Mediterranean 2014-2020, Adriatic-Ionian 2014-2020 Transnational Program)

Interregional & ENPI Cross Border Programs: Interreg Europe 2014-2020, ENPI CBC Programs 2014-2020,

Networking Programs: ESPON Program 2014-2020, URBACT Program 2014-2020, INTERACT Program 2014-2020

Greek Regional Operational Programs: Central Macedonia 2014-2020 Regional Operational Program, Western Macedonia 2014-2020 Regional Operational Program

Current Environmental State of the cross border Eligible Area

Atmospheric environment

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Data on air quality in Central Macedonia and Western Macedonia are only for Greater Thessaloniki Area (TGA) and Florina respectively. According to reports in Florina in the winter months were frequent reports of elevated levels of micro particles in the air, emanating mainly from the burning of unsuitable wood stoves and fireplaces. The levels of SO_2 and CO are low, while the level of ozone is high compared to the limit. Thessaloniki suffered severe air pollution problems during the last decades, mostly related to PM_{10} levels. The air quality, combined with the strong hot season of the Mediterranean climate, is known to be one of the worse in Europe, especially in summer, and leads to serious sanitary concerns.

FYROM

According to the collected data on air quality in urban centers on the fYROM's side of the eligible area of the program, it is concluded that the levels of air pollutant aren't so high. The main pollutant is the PM10 in urban areas exceeded the limit values for daily and annual mean concentration (40 μg/m^3) as a result of production processes, combustion processes in industry, production of electricity and heat, road transport and the building industry. With regard to NOx emissions, the highest contributors are electricity production, 35 %, and transport, 33 %, owing to poor quality of fuels and an obsolete vehicles fleet. For other pollutants, except PM10, no problematic measurements have been observed.

Climate conditions

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The area of Florina has a cold continental climate, with long, cold, humid winters and short warm and dry summers. The microclimate of the area is affected by the presence of large mountains volumes and is characterized by significant inter-seasonal and diurnal difference, due to the high latitude and the morphology of area. In the region of Central Macedonia there are three main climate types, which differ considerably. The *Mediterranean type (yellow areas)*is found in the coastal zone and the lowlands (Thessaloniki - Serres), the *Continental type (green areas)* is found in mountainous and semi-mountainous part of the region, as well as inland and the *Mountain type (blue areas) which* is the closer Medio-european retaining largely typical of the Mediterranean climate.

FYROM

Despite the relatively small surface of the fYROM, the climate varies significantly. There are five different types of climate: the Sub-Mediterranean area (50-500m), the Moderate continental sub-regions (up to 600m), the Warm continental forest continental mountain (600-900m), Subalpine area (1,650-2,250 m) and the Alpine area (>2,220m). According to the climate change scenarios developed under the National Communication on Climate Change, the Former Yugoslav Republic of Macedonia is in the group of vulnerable countries with significant mean temperature increases projected for the coming period.

Aquatic environment

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In Greece there are 14 River Basin Districts. In the eligible area belongs two of them (the Western Macedonia River Basin District and the Central Macedonia River Basin District). The water district of Western Macedonia (13,624 km^2) is characterized by intense ground relief and small plains and has asufficiency in water. A great part of the water demand is supplied by the transnational Small and Big Prespa Lake, while the River Aliakmonas is used for the water supply of the city of Thessaloniki. The river basin of Aliakmonas has the largest area in the district (8,847 km^2 or 65% of total) and the river is 93 km in length. Twenty-eight per cent of the total area consists of small watersheds. On the contrary, the water district of Central Macedonia (10,171 km^2) has a deficiency in water resources; it has the second poorest water resources. The demand for water in urban and agricultural usage is high because the city of Thessaloniki, the second most important center of industrial development after Athens, and the crop productivity of the district is high. The demand for water is mainly supplied by the adjacent Aliakmonas river basin, as well as from transnational water resources, the River Axios and Doirani Lake.

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The hydrographical territory of FYROM is a unique natural basin in the Balkan Peninsula and wider area, due to 84 % of the available water being internal waters and only 16 % external. The eligible area of the Program is covered by the three river basin districts Vardar, Crn Drim and Strumica. The river basin which is shared between former Yugoslav Republic of Macedonia and Greece covers almost the entire country of FYROM and outflows into the Aegean Sea (Mediterranean Sea) at Thermaikos Gulf (Greece). The main river of the area is the the cross-border Axios/Vardar River. There are three major natural lakes in the eligible area: Ohrid, Prespa, and Dojran, all three of which are shared with neighboring countries. They are also part of the eligible area. Water users are irrigation with 44%, then nature (minimum accepted flows) with 31%, followed by industry with 14% and drinking water supply for the population and tourists only 11%.

Natural – Geographical characteristics

The cross-border region combines favorable natural resources (mountains, forests, lakes, biodiversity, unique natural forms, geothermal and mineral waters, waterfalls) and favorable climate conditions.

The surface of cross-border region of collaboration between Greece - FYROM covers extent 20,839km².The department, which belongs in Greece constitutes the 8% of total surface of Greece, while the department that belongs in the former Yugoslavian Republic of Macedonia constitutes the 39,7% of its surface respectively. The eligible Program's area enjoys the benefits of having a vast, varied and mostly unspoilt natural environment. The region has a rich mixture of natural heritage in the form of flora and fauna, rivers, lakes, wetlands, grasslands, agro-ecosystems and forests. The main characteristics of the Program area along the borderline are the Prespa Lakes with the adjacent plains of Florina and Resen in the west, the mountain range of Voras/Nidze reaching up to 2.560m(constitutes a natural border between the two states) , the Axios/Vardar Valley, the Doirani/Dojran Lake and Beles/Belasica mountain range, reaching up to 2.029m in the East. In the south the Gulf of Thermaikos and the Axios/Vardar plain and Delta dominate.

In the eligible area there are numerous protected areas under International Conventions, European Directives and National legislative frameworks. The mountains of the area are rich in flora and fauna and there is a large number of protected areas.

Biodiversity – Flora – Fauna

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In terms of biodiversity the eligible area combines a great range of habitat niches and a spectacular flora and fauna. Apart from protected areas primarily related to wetlands, the forests and mountains, there are many valuable and sensitive ecosystems. These are located throughout the region and are critical water recipients and transitional waters. In Region of Central Macedonia there are the five main vegetation zones in which Greece is divided. This abundance is due to large fluctuations of factors that affect the configuration. The climate, the existence of the sea and along the strong orographic configuration, the effect of rivers and lakes in the microclimate, the geology and soil composition, and the effect of living of the large number of the species and humans. The Western Macedonia is recognized for its diversity and the complexity of the geological and geomorphological background. The wetlands of Central Macedonia are vital sites for breeding, wintering and migratory passage of many bird species, while the tops of the mountains and valleys are particularly important for the welfare of raptors. The water systems of the Western Macedonia Region are characterized by the diversity of the fish fauna and the specificity of amphibians. In Aliakmona, for example, is estimated to live 20 to 25 species of fish. In the eligible area on the geek side there are 33 sites of the NATURA 2000, five (5) National Woodland Parks and four (4) wetlands of international importance according to the Ramsar Convention.

FYROM

The abundance of ecosystems, habitats, communities and species places the former Yugoslav Republic of Macedonia at the very top of the list of countries with impressive biodiversity in Europe ('hot spot'). It has been established that several ecosystem types are present in the Republic: wetland, shore, grassland, highland, steppe-like, forest and mountain, of which wetland, dry land/grassland, forest and mountainous are the key ecosystems. More than 260 flora communities have been recorded with dominance of grass and forest communities. Species diversity is represented by more than 16 000 taxa of wild flora, fungi and fauna. The fact that more than 900 regionally endemic species, among which 850 are truly endemic, exist in the former Yugoslav Republic of Macedonia is of particular importance. Lake Prespa is a natural monument and Ramsar Site (18,920 ha), which includes Strict Nature Reserve Ezerani (2,080 ha). Additionally, large parts of Galicica National Park and Pelister National Park are found within the Prespa Basin. The area is protected as a National Park and as a Special Protection Area under EU Directive 79/409, and also as a RAMSAR wildlife habitat. Other important natural lakes are the Ohrid Lake which has been a UNESCO World Natural Heritage site since 1980 and Doirani/Dojran Lake.

Environmental Infrastructure

GREECE

Greece is one of the EU Member States that collect their waste water at very high level. The tertiary treatment in Greece has a rate around 80%. Greece Is ranked 4th among the EU countries. The overall rate of population connected to secondary wastewater treatment in Greece is 99%. Waste management has been recognized as one of the most pressing problems in Greece, suffering of a low level of organization and relying predominantly on semi-controlled landfills until the end of the previous century. Nevertheless, during the last two decades the solid waste management in Greece has been upgraded. As of 2011, still 109 illegal dumping sites all over Greece remain in operation despite the ruling of the European Court of Justice of 2005 (case c-502/03, which dictated that by the end of 2008 all illegal dumping sites should have been closed and rehabilitated.

FYROM

The country lags behind in sanitation and water-supply infrastructure. Taking into consideration all existing treatment plants, the total rate of population served by waste water treatment is estimated at approximately only 12,5%. The oldest waste water treatment plants in the country are precisely those at the lakes; their treatment processes are now clearly outdated and the infrastructure is insufficient for assuring sustainable utilisation of water resources. Most of the waste is disposed of in landfills, both legal and illegal. Waste recycling is very limited..Municipal solid waste is one of the main waste streams generated. The quantity of municipal waste was 349 kg/inhabitant or 0.9 kg/inhabitant per day in 2008. Around 77 % of the population is covered by the public municipal waste collection system operated by public enterprises.

Natural risks

GREECE

The Region of West Macedonia belongs entirely in Zone I (low seismic hazard) and the Region of Central Macedonia to Zone II. The Central Macedonia and the Western Macedonia eligible area is highly seismogenic. The areas that suffer from floods are closed hydrological basins in karst areas ,river floodplains, and urban areas. Summer drought episodes did not show any particular trend for the same period. Deforestation and urbanization significantly contribute to the genesis of floods. Deforestation, also related to soil erosion, is a major problem in Greece and in particular in the eligible area.

FYROM

The territory of FYROM, which is located in the Mediterranean and Balkan seismic region, is exposed to intensive neo-tectonic movements, causing relatively high and frequent seismic activity. According to World Bank estimates, the former Yugoslav Republic of Macedonia is among the ECIS countries that are most likely to experience dramatic increases in climate extremes (fifth among the twenty-eight countries analyzed). Climate change is responsible for the increased severity and frequency of natural disasters, which have a significant impact on the environment, the economy and the development of the area. The frequency and intensity of floods in the past several years in the former Yugoslav Republic of Macedonia are on the rise. Statistics show that floods are caused by overflow of the large rivers Vardar, Crna Reka, Strumica. 44% of all disasters in the 1989-2006 period were floods or flood related disasters.

Population

GREECE

The total population of the Program area is 1,399,597inhabitants (64.14%).In 2011, the legal population of the Region of Central Macedonia counted 1,726,430 residents registering a marginal increase over the previous census of 2001 of the Hellenic Statistical Authority. The Western Macedonia declining population compared to the previous census in percentage change -3.61 %. In 2001 the population of the region was 294,317 inhabitants and in 2011 fell to 283,689 inhabitants. The NUTSIII region of Kilkis presented the highest increase (9.9%) while Serres have a high population decrease of -12.8%. Pella and Florina presented population decreases by -4.2% and -4.98% respectively. Population density ranges from 29 persons/km^2 in Florina up to the tenfold figure of 238 persons/km^2 in Thessaloniki. The respective national averages are 82 for Greece and 80.1 for the former Yugoslav Republic of Macedonia.

FYROM

The total population of the Program area is 782,667 (35.86%). According to the latest population estimates (31.12.2012), the total population of the country is 2,062,294 inhabitants. and presents, in this decade, an increase of 1.9%. The average population density is 82.8 inhabitants per km² (estimated at 31.12.2012) but because of the intense migratory movements, there are huge disparities and differences in density. Skopje as the most densely populated (337 inhabitants per km²), almost ten times higher density of the

Vardar region (38 inhabitants per km²). The region of Pelagonia presented the highest increase (1.89%) while Southeast has a small population decrease of approximately -0.96%. On the contrary, the Vardar and Southwest regions presented population increases by 0.46% and 0.01% respectively.

Social – Economic environnemt

GREECE

The financial crisis in Greece leaded to the reduction of GDP by 11.87% in Thessaloniki, by 36.51% in Kilkis, by 3,77% in Pella, in Serres by 8.77% and in Florina by 0.75%. In the Greek area, mainly in Thessaloniki, Pella, Kilkis and Serres, per capita GDP remained lower than the corresponding per capita GDP. On the contrary, Florina has relatively high per capita GDP because of energy economic activities.The level of unemployment increased in the second quarter of 2012. In the region of Central Macedonia the rate has recorded the third highest rate in the country, 25.1%, following the regions of Western Macedonia (30%) and Central Greece (28.4%), compared with 23.6% of the country, 10 3% of the EU-15 and 10.2% of the EU-27. Health spending as a share of GDP is lower in Greece than in a number of European countries.

FYROM

The GDP in the former Yugoslav Republic of Macedonia regions, during the period 2007 – 2011, increased by 29.83% in Southeast, by 20% in Vardar, by 29.83% in Southwest and by 23,78% in Pelagonia. The social situation in the former Yugoslav Republic of Macedonia is characterized by a low employment rate of 38.5%, a high unemployment rate of 32% and a poverty estimated at 31% of the population. The employment rate in the Vardar, East, Southeast and the Pelagonia Region in 2013is above the total rate at the national level, with the Southeast Region having the highest employment rate of 56.8.The lowest employment rate in 2013 was observed in the Northeast Region. The lowest unemployment rate of 18.8 was recorded in the Southeast Region, which also had the highest employment rate. The FYROM health system is insurance-based. Compulsory health insurance is the main source of health care revenue undertaken through the publicly owned Health Insurance Fund (HIF). There are potential inequalities in health care delivery.

Cultural heritage

GREECE

In the eligible area there is a combination of significant areas of natural beauty, rich historical and cultural heritage. The cultural heritage in Central Macedonia is particularly rich and diverse and covers all stages of the Hellenic civilization from the Paleolithic era to the modern times. The diachronic presence of the humans in the Macedonian area is enriched with numerous monuments, residential complexes, artwork or other creations that cover all the historical range. Prehistory - Ancient - Classical - Hellenistic - Early Christian - Byzantine - Metabyzantine –recent periods. Florina, is characterized by diversity of ecological zones and rarely for the Greek area lake systems including impressive picturesque villages.

FYROM

The fYROM has a rich history with heritage especially from ancient, medieval and Ottoman period. In the illegible area of the fYROM there is the natural and cultural heritage of the Ohrid region, included in the World Heritage List of UNESCO, which is situated on the shores of Lake Ohrid. The town of Ohrid is one of the oldest human settlements in Europe.

The strategy of the Program

The overall strategy of the CBC Program Greece – the Former Yogoslay Republic of Macedonia" served by three (3) priority axes and four (4) selected thematic priorities listed below.

Priority Axes

- PRIORITY AXIS: 1. Development and Support of Local Economy
- PRIORITY AXIS: 2. Protection of Environment - Transportation
- PRIORITY AXIS: 3 Technical Assistance

Thematic priorities

- **Thematic priority a:** Promoting employment, labor mobility and social and cultural inclusion across borders through, inter alia: integrating cross-border labor markets, including cross-border mobility; joint local employment initiatives; information and advisory services and joint training; gender equality; equal opportunities; integration of immigrants' communities and vulnerable groups; investment in public employment services; and supporting investment in public health and social services;
- **Thematic priority b:** Protecting the environment and promoting climate change adaptation and mitigation, risk prevention and management through, inter alia: joint actions for environmental protection; promoting sustainable use of natural resources, resource efficiency, renewable energy sources and the shift towards a safe and sustainable low-carbon economy; promoting investment to address specific risks, ensuring disaster resilience and developing disaster management systems and emergency preparedness
- **Thematic priority c**: Promoting sustainable transport and improving public infrastructures by, inter alia, reducing isolation through improved access to transport, information and communication networks and services and investing in cross-border water, waste and energy systems and facilities
- **Thematic priority d**: Encouraging tourism and cultural and natural heritage

Alternative Solutions

Alternatives have been considered in four ways:

- A baseline scenario "zero-solution" considers an absence of the Program over the 2014-2020 period.
- Planning of the Cross Border Cooperation Program "Greece-The former Yugoslav Republic of Macedonia 2014-2020" based on the strategy of the current programming period (Current Situation).

- Development without a Core Strategic Planning (Unplanned Growth).
- Planned Growth based in a Core Strategic Planning (Planned Growth).

Regarding the Zero Solution, the non-implementation of the Program will impede the real convergence with the developed regions of each country and the EU, with a negative impact on the economy, on the improvement of the living standards in the eligible areas, on the protection and enhancement of the natural and cultural wealth and on the improvement and protection of natural resources. Regarding Alternatives 1 and 2 these are rejected , while the Alternative 3 is the best one for the needs and opportunities of the cross border area. The strategic approach and the determined actions to be supported are quite broadly formulated. Improvement in the consideration of environmental issues is a question of addressing environmental orientation by more focused formulations and guiding principles for the selection of projects and monitoring.

Environmental Impacts

The expected environmental impact of the IPA II Cross Border Program Greece –The former Yugoslav Republic of Macedonia 2014-2020 on the basis of environmental objectives, ispresented on the following table:

A/A	ENVIRONMENTAL ASPECT	PROBABLE IMPACTS
1	**Biodiversity**	The overall impact of the IPACBC Program will be positive. This is due to the activities which are planned and expected to contribute directly or indirectly to the protection of the very important habitats that exist in the area, as well as of the rare flora and fauna species that live there. There will be a slight negative impact because of the establishment of new business actions. Due to the abundance of ecosystems in the border region is expected that there will be cases where such areas will be affected, either by the construction of infrastructure in or near such areas. The infrastructure projects are small scale and in all cases will be provided environmental protection measures to avoid negative consequences.
2	**Population – Human Health**	Activities that aim at the increase of the employment and the enhancement of the entrepreneurship of the area have the most important contribution to the population – human health. Human health will be improved due to actions of promotion the accessibility to health care services and due to improvement of the quality of environment.
3	**Soil**	The overall effect is positive in soil due to implementation of sustainable integrated management systems, treatment and recycling of waste. A slight negative impact is expected due to investment in development activities and infrastructure projects.
4	**Water**	The improvement of wastewater treatment and the reduction of pressures and impacts on environment through the effective treatment and reuse of liquid and solid wastes will support the improvement of water quality.
5	**Air**	The improvement and the extension of road networks will lead to an increase in road transportation and a further increase in air pollution. The improvement of waste management will have a positive impact to air quality.
6	**Climate conditions**	The joint and coordinated environmental actions in the border region contribute to the reduction of GHG emissions and carbon/water footprint and to the reduction of the impacts of climate change on ecosystems.

A/A	ENVIRONMENTAL ASPECT	PROBABLE IMPACTS
7	**Material Assets**	The expected improvement of economic indicators, the enhancement of natural environment, the improvement of employment rates and general the upgrade of the quality of life is expected to increase the value of assets. Undoubtedly, during the construction of infrastructure in some cases the value of neighboring to the works properties will be reduced temporarily. In any case this can be avoided if during the planning and implementation the works appropriate measures are taken.
8	**Cultural heritage**	The planned actions for the promotion and protection of cultural heritage will have strong positive impact. Support for the development of new and innovative touristic products and services to be delivered as well as supporting the protection and promotion of cultural heritage, will also have a positive impact on the protection and promotion thereof.
9	**Landscape**	Due to the abundance of wide areas of unique landscape, it is likely some of the infrastructure, and development activities, to adversely affect the landscape with land occupation, division and aesthetic degradation. The control of natural risks and hazards will have positive impact to landscape.
10	**Cumulative Impacts**	The interaction and relationship between the above factors, as estimated by the direction of the impact of each factor separately, will be positive.

Control/Prevention Measures

The proposed control/prevention measures to address the likely significant impacts of the of the IPA II Cross Border Program Greece –The former Yugoslav Republic of Macedonia 2014-2020 on and the total cumulative effects are:

<table>
<tr><th>A/A</th><th>ENVIRONMENTAL ASPECT</th><th>CONTROL/PREVENTION MEASURES</th></tr>
<tr><td>1</td><td>Biodiversity</td><td rowspan="10">The prevention, reduction and control of environmental impacts of the Programare achieved through two main mechanisms:

a) the environmental licensing of projects and activities as applicable and
b) specification for special conditions, provisions and / or conditions that will be applied in the implementation of program and will be incorporated into management processes (assessment instruments, integration projects).

Individual actions proposed within each mechanism are described below:

a) Environmental licensing projects and activities.

■ Compliance with the specific emission limit values of pollutant loads and concentrations for air, water and soil in accordance with the applicable provisions
■ Compliance with the specific limit values for noise.
■ Compliance with the provisions for the management of waste in each country.
■ Taking all necessary measures provided by the two countries legislation in relation to the prevention and reduction of pollution of protected areas, aquatic environment and forest in accordance with the relevant legislation.

b) Specific measures to protect the environment.

■ Indicate directions, preconditions, restrictions and recommendations beyond compliance with licensing procedures aimed at avoiding the cumulative impacts that may be caused by the implementation of various projects,
■ maximize the environmental outcome of the CBC Program.

As a main principle for determining the measures to be proposed is recognized the principle of prevention.</td></tr>
<tr><td>2</td><td>Population – Human Health</td></tr>
<tr><td>3</td><td>Soil</td></tr>
<tr><td>4</td><td>Water</td></tr>
<tr><td>5</td><td>Air</td></tr>
<tr><td>6</td><td>Climate conditions</td></tr>
<tr><td>7</td><td>Material Assets</td></tr>
<tr><td>8</td><td>Cultural heritage</td></tr>
<tr><td>9</td><td>Landscape</td></tr>
<tr><td>10</td><td>Cumulative Impacts</td></tr>
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Monitoring system of significant environmental impacts

The system provided for monitoring the significant environmental impacts of the implementation of the program by environmental aspect, is presented in the table below:

A/A	ENIRONMENTAL ASPECT	ENVIRONMENTAL INDICATOR	MONITORING AUTHORITY	ENVIRONMENTAL PARAMETERS	MONITORING FREQUENCY
1	Biodiversity	■ Habitat alteration and land conversion from natural state ■ Number and / or extent of protected areas ■ Number of endemic and protected species ■ Area of key ecosystems ■ Protected areas as % of national territory and by type of ecosystem	■ Management bodies of protected areas ■ Responsible Public Authorities	■ Habitat alteration and land conversion from natural state ■ Number and / or extent of protected areas ■ Number of endemic and protected species ■ Area of key ecosystems ■ Protected areas as % of national territory and by type of ecosystem	Annually
2	Population – Human Health	■ Life expectancy ■ Work accidents ■ Percentage of population living under the line of poverty	■ Responsible Public Authorities	■ Life expectancy ■ Work accidents ■ Percentage of population living under the line of poverty	Annually
3	Soil	■ Percentage of degraded land ■ Quantities of waste disposed in landfills ■ Production Waste % recycling (paper, glass, aluminum)	■ Responsible Public Authorities	■ Percentage of degraded land ■ Quantities of waste disposed in landfills ■ Production Waste ■ % recycling (paper, glass, aluminum)	Annually
4	Water	■ Population connected to secondary and/or tertiary sewage treatment plant ■ Quality of surface water ■ Quality of groundwater ■ Water use by sector ■ Percentage of recycling water ■ Quality of seas	■ Responsible Public Authorities ■ Ministries of Environment	■ BOD5/COD in inland waters ■ Concentration of N & P in inland waters ■ Heavy metals ■ Organic compounds ■ pH ■ Microbiolgical parameters	The frequency is defined according to the monitoring systems of the water in the countries
5	Air	■ Days exceeded air quality limits ■ Emissions by Source	■ Responsible Public Authorities ■ Responsible Regional Authorities	■ SOx, NOx, PM10, CO ■ GHG ■ Pb	The frequency is defined according to the monitoring systems of the air in the countries
6	Climate conditions	■ Greenhouse gas emissions by source (%) ■ Shift of energy demand	■ Ministries of Environment	■ CO2 emissions ■ CH4 emissions ■ N2O emissions ■ PFC, HFC, SF6 missions	Annually

A/A	ENIRONMENTAL ASPECT	ENVIRONMENTAL INDICATOR	MONITORING AUTHORITY	ENVIRONMENTAL PARAMETERS	MONITORING FREQUENCY
		▪ Energy production by source			
7	Material Assets / Cultural heritage/ Landscape	▪ Number of restored buildings ▪ Number of restored monuments ▪ Urban green space per capita	▪ Responsible Public Authorities	▪ Number of restored buildings ▪ Number of restored monuments ▪ Urban green space per capita	Annually