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MEFWA

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PIMS 3629: Identification and Implementation of Adaptation Response Measures in the Drini-Mati River Deltas

Brief description

The Drini and Mati River Deltas (DMRD) are 2 of 3 deltas found on the northern Adriatic coast of Albania. River deltas are a distinct feature of the northern coastal region which extends from the Albania-Montenegro border in the north to the Rodoni Peninsula in the south. Of the three deltas, the Drini is the largest and most complex, consisting of a compound system of sandy belts, capes, bays, lagoons and island areas. The DMRD harbors significant biodiversity values, and this is recognized under the National Biodiversity Strategy and Action Plan (NBSAP, 1999). Three main types of habitat are found between the 2 deltas: (i) marine, (ii) wetlands including estuarine, riverine, lacustrine and palustrine, and (iii) non-wetland habitats including forests, shrubs and open fields where traditional agriculture is practiced. The DMRD provides wintering ground for the globally endangered pygmy cormorant (Phalacrocorax pygmaeus) and over 70 other species of waterfowl and waterbird with a total population of some 180,000 individuals. The Drini delta is an internationally recognized Important Bird Area (IBA). A recent study has revealed that the Patok lagoon, within the Mati Delta, serves as an important feeding area for globally endangered loggerhead turtles (Caretta caretta), with over 300 turtles tagged in this area over the last two years. Forests in the DMRD harbor several medicinal and aromatic herbs. Several areas within the DMRD (Lezha administrative region) have been identified as priorites in the NBSAP.

Based on assessments of impacts of climate change, including variability, the DMRD has been identified as a critically vulnerable region of the country. This conclusion comes from the first comprehensive vulnerability and adaptation assessment undertaken for Albania in the face of potential climate change under the aegis of its First National Communication (FNC) to the UNFCCC. For the coastal zone, the climate change scenarios for Albania developed as part of this exercise have predicted an increase in sea surface temperature and sea level rise of up to 61 cms. This is expected to place additional stress on marine and littoral biodiversity as well as livelihoods of local communities. Sea level rise, more frequent and intense floods, frequent inundation and longer submersion of low lying coastal areas could affect life cycles of species and pose risks of habitat loss and fragmentation of a unique compound ecosystem consisting of sandy dunes, lagoons and coastal wetlands. Climate change, including variability, could thus undermine biodiversity conservation efforts under the protected area regime in the DMRD.

Currently, there are no efforts underway to address climate change impacts on the DMRD ecosystem. However, due to the importance assigned to the target ecosystem the government plans to expand already existing network of protected areas to cover the entire region of Shengjin (from Kune-Vain to Tale to River Mati to Patok to Fushe Kuqe to River Ishmi). This calls for consideration of climate change impacts to these efforts. Whereby, a combination of technical and institutional capacity development, on-the ground adaptation measures, such as coastal dune habitat restoration, modification of DMRD protected area network planning and coverage, and other landscape-wide adaptation policy measures will be employed by the project. The overall development goal of this MSP is to assist Albania in establishing a mechanism by which strategies to moderate, cope with, and take advantage of the consequences of climate change are enhanced, developed, and implemented. The specific objective of the project is to build adaptive capacities in the DMRD to ensure resilience of the key ecosystems and local livelihoods to climate change. This objective will be achieved through 3 outcomes: (1) Capacities to monitor and respond to anticipated climate change impacts in the DMRD at the institutional and community levels developed, (2) DMRD region's conservation and development programmes, plans and policies integrate climate change risks and take local pilot actions for coastal adaptation, (3) Capacity for adaptive management, monitoring and evaluation, learning, and replication of project lessons developed.

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Acronyms and Abbreviations

APF	Adaptation Policy Framework
CCSA	Climate Change Scenarios for Albania
DMRD	Drini and Mati River Deltas
ELPA	Environmental Legislation and Planning in Albania
EU	European Union
FNC	First National Communication
GOA	Government of Albania
HDI	Human Development Index
IBA	Important Bird Area
IUCN	International Union for the Conservation of Nature
IWEMP	Integrated Water and Ecosystem Management Project
LEAP	Local Environmental Action Plan
MDG	Millennium Development Goals
MOEFWA	Ministry of Environment, Forests, and Water Administration
NBSAP	National Biodiversity Strategy and Action Plan
NEAP	National Environmental Action Plan
NES	National Environment Strategy
NPC	National Project Coordinator
NPD	National Project Director
NSSED	National Strategy for Socio Economic Development
REC	Regional Environmental Center
SNC	Second National Communication
SPA	Strategic Priority on Adaptation
TNA	Technology Needs Assessment
V&A	Vulnerability and Adaptation

SECTION I: Elaboration of the Narrative

PART I – SITUATION ANALYSIS

A – SUMMARY

1. The Drini and Mati River Deltas (DMRD) are 2 of 3 deltas found on the northern Adriatic coast of Albania, the third one being the delta of the Ishmi River. River deltas are a distinct feature of the northern coastal region which extends from the Albania-Montenegro border in the north to the Rodoni Peninsula in the south – a total length of 54 kilometers1. Of the three deltas, the Drini is the largest and most complex, consisting of a compound system of sandy belts, capes, bays, lagoons and island areas (see maps in Annex 1).

2. The DMRD harbors significant biodiversity values, and this is recognized under the National Biodiversity Strategy and Action Plan (NBSAP, 1999). Three main types of habitat are found between the 2 deltas: (i) marine, (ii) wetlands including estuarine, riverine, lacustrine and palustrine, and (iii) non-wetland habitats including forests, shrubs and open fields where traditional agriculture is practiced. The DMRD provides wintering ground for the globally endangered pygmy cormorant (*Phalacrocorax pygmaeus*) and over 70 other species of waterfowl and waterbird with a total population of some 180,000 individuals. The Drini delta is an internationally recognized Important Bird Area (IBA). A recent study has revealed that the Patok lagoon, within the Mati Delta, serves as an important feeding area for globally endangered loggerhead turtles (*Caretta caretta*), with over 300 turtles tagged in this area over the last two years. Forests in the DMRD harbor several medicinal and aromatic herbs. Several areas within the DMRD (Lezha administrative region) have been identified as priorites in the NBSAP. (See Annex 2 for NBSAP recommendations and more information on biodiversity of the DMRD.)

3. Based on assessments of impacts of climate change, including variability, the DMRD has been identified as a critically vulnerable region of the country. This conclusion comes from the first comprehensive vulnerability and adaptation assessment undertaken for Albania in the face of potential climate change under the aegis of its First National Communication (FNC) to the UNFCCC, an initiative supported by UNDP-GEF. The climate change scenarios for Albania developed as part of this exercise have predicted an annual increase in temperature of up to 3.6ºC, decrease in precipitation by 12.5%, and consequent reduction of water resources and arable land (due to soil erosion and alteration) by year 2100. In the coastal zone, an increase in sea surface temperature as well as sea level rise of up to 61 centimeters is expected to place additional stress on marine and littoral biodiversity as well as livelihoods of local communities. Sea level rise, more frequent and intense floods, frequent inundation and longer submersion of low lying coastal areas could affect life cycles of species and pose risks of habitat loss and fragmentation of a unique compound ecosystem consisting of sandy dunes, lagoons and coastal wetlands. Rising temperatures will affect the composition and distribution of species both in marine and terrestrial ecosystems of DMRD. Climate change, including variability, could thus undermine biodiversity conservation efforts under the protected area regime in the DMRD, unless the system fully accommodates mid to long term alterations in the protected area coverage and management strategies in response to climate-related stress. Currently, there are no efforts underway to address climate change impacts on the DMRD ecosystem.

4. The high vulnerability of the DMRD, combined with the likelihood of significant adverse impacts on the preservation of globally significant biodiversity, indicate an urgent need for government, non-government, private sector, community, and international donor representatives to take into account the impacts of climate change into all future actions aimed at promoting sustainable development of this area. The Ministry of

[1] The northern coastal region coincides with the administrative boundaries of the coastal regions of Shkodra and Lezha. The Drini delta and Mati deltas fall within the Lezha region.

Environment, Forests and Water Administration (MOEFWA) is therefore requesting UNDP-GEF support through the GEF's Strategic Priority on Adaptation (SPA) to address this issue. The various reporting requirements under the UNFCCC (FNC, Technology Needs Assessment, and the Second National Communication) have greatly enhanced Albania's capacity to comprehend and address issues related to climate change. This provides a fertile ground for specifically focusing on the issue of adaptation to climate change within a highly vulnerable ecological system. By developing adaptive capacities and piloting adaptation approaches in the DMRD, the project will lay the ground for extending this experience to other vulnerable areas and sectors of the country.

5. The overall development goal of this medium size project is to assist Albania in establishing a mechanism by which strategies to moderate, cope with, and take advantage of the consequences of climate change are enhanced, developed, and implemented. The specific objective of the project is to build adaptive capacities in the DMRD to ensure resilience of the key ecosystems and local livelihoods to climate change. This will be done by first identifying, and then integrating climate change response measures into development programming in the DMRD. This objective will be achieved through the following outcomes.

Outcome 1: Capacities to monitor and respond to anticipated climate change impacts in the DMRD at the institutional and community levels developed

Outcome 2: DMRD region's conservation and development programmes, plans and policies integrate climate change risks and take local pilot actions for coastal adaptation

Outcome 3: Capacity for adaptive management, monitoring and evaluation, learning, and replication of project lessons developed

B - COUNTRY OWNERSHIP

B1. Country Eligibility

6. Albania has ratified the UNFCCC (ratified on 3 October 1994 and entered into force on 1 January 1995) and Kyoto Protocol (ratified on 1 April 2005 and entered into force on 30 June 2005), making it eligible for receiving GEF support under the climate change focal area. It has also ratified the UNCBD (5 January 1994) and the Ramsar Convention (February 1996).

B2. Country Driven-ness

7. Since the ratification and entry into force of the UNFCCC and Kyoto Protocol, the Government of Albania (GOA) has effectively fulfilled various assessment and reporting requirements for developing a national strategy for addressing climate change mitigation and adaptation through a broad-based consultative process. The country has prepared its First National Communication, a Technology Needs Assessment, and is currently preparing its Second National Communication to the UNFCCC. Through this process, awareness of national decision makers regarding climate change mitigation and adaptation has progressively increased.

8. Albania is currently preparing (with UNDP-GEF support) its Second National Communication to UNFCCC, according to 17/CP8 and other guidance provided. It will include a follow up of previous studies already identified under a *stocktaking exercise*. The focus of the vulnerability and adaptation assessment of the SNC is on socio-economic and environmental sectors. The vulnerability and adaptation component of the project will focus on the Drini River Cascade. In prioritizing the Drini Cascade as its focus, the SNC took into consideration the following sectors (sub-sectors): climate, water, agriculture, energy, forestry, tourism, population and natural systems and rated them on their scale of vulnerability to climate change, relevance to national development priorities, development benefits, and data availability.

9. The FNC identified the north and south of the **Mati** delta as one of four vulnerable areas along Albania's coast. The vulnerability and adaptation section of the SNC has further narrowed its focus to an area where there is a likelihood of significant impacts of climate change, including variability. The chosen focus area is the **Drini** cascade, which was selected over two other areas based on a comprehensive multi-criteria analysis. The final evaluation matrix developed under the stocktaking exercise is attached as *Annex 6*.

10. Albania's **National Strategy for Socio-Economic Development**[2] (NSSED), which is the key policy document guiding development in Albania, considers the implementation of a set of actions for mitigating and adapting to the potential consequences of climate change as one of the priorities under its 2004-2007 mid-term plan. However, the significant gap in knowledge and understanding of potential impacts of climatic change remains an obstacle to systematically incorporating measures needed to facilitate adaptation into sectoral plans.

11. At the regional level, **Regional MDG Reports** for Shkodra (2004) and Lezha (2005) regions have highlighted the importance of adaptation issues in the Drini and Mati river deltas, and have also drawn attention to the poor awareness among civil society and local government of the exacerbating impacts of expected climate change on the ecology and socio-economic development of the region.

12. The Ministry of Environment, Forests and Water Administration (MOEFWA) of Albania is therefore proposing to undertake a pilot exercise in one of the most vulnerable regions of the country to identify and integrate adaptation to expected climate change in sectoral programming, with the goal of conserving the globally significant biodiversity of the region and sustaining local natural resource-dependent livelihoods.

C – PROGRAM AND POLICY CONFORMITY

C1. Program Designation and Conformity

13. This proposal conforms to the Operational Guidelines for the Strategic Priority "Piloting an Operational Approach to Adaptation" (SPA)[3]. As outlined in these operational guidelines, the project will contribute to the GEF's stated objective of reducing vulnerability and increasing adaptive capacity to the adverse effects of climate change in the biodiversity focal area by focusing on the unique ecosystem of the Drini and Mati River Deltas (DMRD). This pilot, demonstration project will address local adaptation needs in the DMRD to reduce risks of loss of biodiversity which is of global significance. It will reduce the vulnerability of the DMRD wetland ecosystem to the adverse impacts of expected climate change.

C2. Project Design

Geographical and political context

14. Albania is located in Southeastern Europe, bordering Serbia and Montenegro in the north, The Former Yugoslav Republic of Macedonia to the east, and Greece in the south. To its west lie the Adriatic Sea (sandy shore) and Ionian seas (rocky shore) with a coastline of 447 kilometers (Annex 1, Map 1). Albania is a small country (land area: 28,748 km²) with a mostly mountainous terrain (highest point is Maja e Korabit at 2,753 m), and small plains along the coast. The country has a strategic location along the Strait of Otranto, which links the Adriatic Sea to the Ionian Sea and the Mediterranean Sea. Following the fall of Communism in 1991, the country has been working to overcome its historical isolation, improve economic conditions, and introduced basic democratic reforms, including a multi-party system.

[2] The National Strategy for Socio-Economic Development is the Albanian version of PRSP. GOA has already taken initial steps for aligning NSSED with the MDGs and the Stabilization Association Agreement for EU integration.

[3] GEF/C.27/Inf.10, October 14, 2005

15. The Lezha region (see Map 2 in Annex 1) spans an area of 1,619 km^2 (or 5.6% of the national territory), divided in three districts: Kurbin, Lezhë and Mirditë, comprised of 5 municipalities and 16 communes. The region has a coast line of 38 kilometres and includes the Drini (Lezhë district) and Mati River (Kurbin district) deltas. Coastal communes surrounding the DMRD are Shengjin, Shenkoll and Fushe Kuqe.

Socio-economic context

16. The population of Albania is 3,127,263 inhabitants, with an estimated growth rate of 0.52%. The average life expectancy for males was estimated at 69.01 years and for females at 74.87 years, and the infant mortality rate is estimated at 39.99 deaths per 1,000 live births (estimates from 2001). 46.6% of the population lives below the poverty line of $2 per day. Real Gross Domestic Production (GDP) growth was estimated at 6% annually, the inflation rate at 2.9% and the unemployment rate at 14.4% (all estimates are for 2004 from INSTAT). Principal natural resources include oil, gas, coal, iron, copper, and chrome ores. In terms of human development, Albania is ranked 72nd in the 2005 Human Development Report, with an HDI value of 0.780.

17. The Lezha region, in which the DMRD lies, is one of the poorest regions in Albania. The population in 2005 was estimated at 95,260 inhabitants, 70% of which reside in rural areas. This region has seen an in flux of inhabitants from the mountainous areas of the country that seek to move to the coast. However, the region is also affected by emigration with 40.6% of families having at least one member abroad.

18. Lezha is among the regions with mid-level HDIs: Lezhë and Kurbin at 0.798, and Mirdita at a lower HDI of only 0.632. The unemployment rate of 28% is about 2 times as high as the national average (14.4%), which is an indication of the high level of poverty in the region. 51% of the labor force is engaged in the private agriculture sector (this includes fisheries), 35.3% in the private non-agriculture sector, and 13.7% in the state sector. Tourism and agriculture are two important sectors impacting economic growth of the region.

Biodiversity context

19. Considering the relatively small size of the country, Albania is rich in biodiversity residing in its numerous mountain, lake and coastal ecosystems. It still houses species that are endangered at the European level and worldwide. There are a number of globally threatened species in Albania, with at least 73 vertebrate and 18 invertebrate species of global importance having parts of their habitats and populations in Albania. For some of them (e.g. *Pelecanus crispus, Phalacrocorax pygmeus, Salmo letnica* and *Acipenser sturio*), Albania has a critical importance.

20. Biodiversity is one of the most important assets of the Lezha region. The loggerhead turtle has been found along the Ionian coasts where the narrow virgin beaches are suitable sites for laying eggs. Recent reports over the last 2 years provide evidence of loggerhead turtles feeding further north up the coastline in the lagoons of the Mati River delta. The Dalmatian Pelican is a threatened species which has its only nesting site in the Karavasta Lagoon. The population is actually estimated at 27 couples. The monk seal, which is practically extinct in the Mediterranean, except for the isolated parts of the Aegean and Adriatic, is found in Albania. 70 mammals, 323 birds, 36 reptiles and 15 amphibian species are reported. Many of them are endangered or threatened species.

21. The mountain alpine forest ecosystems are also rich in biodiversity. The higher areas are dominated by beech and pine forests and preserve a large number of endemic and sub-endemic plant species. A total of 27 plant species with 150 sub-species are endemic in Albania. Another 160 plant species are sub-endemic in Albania, Montenegro, and Greece.

22. The **Drini River delta** is a compound system consisting of sandy belts, capes, bays, lagoons and island areas. The Kune-Vain protected area (with a total surface of approximately 2,300 ha) and the Kannalla lagoon

lie within the Drini delta. The area has been recognized as an Important Bird Area (IBA) and is also recognized for its landscape values under the Ramsar Convention. It provides wintering and nesting grounds for a number of bird species, and also harbors endangered mammal, amphibian and reptile species. Important birds include *Phalacrocorax carbo, Anas penelope, Fulica atra, Rallus aquaticus, Gallinula chloropus, Nycticorax nycticora*, and *Ardeola ralloids*. Counts carried out during the last five years have stressed the ornithological importance of the area, especially in terms of wintering water birds. Regarding mammals the area registers as many as 40 species. The most common are *Pipistrellus pipistrellus, Mus musculus, Mustela nivalis, M putorius*, and *Vulpes vulpes*. Amphibians are represented mainly by *Rana lessonae, Hyla arborea, Rana dalmatina, Triturus cristatus, Triturus vulgaris*, and *Rana balcanica*. Different kinds of reptiles, many of which are threatened, are found in this area such as, Sea turtle *Caretta caretta* and Herman's tortoise *Testudo hermanni*, European Pond Terrapin *Emys orbicularis*, *Elaphe quatrolineata*, Viper *Viipera ammodytes*.

23. In the **Mati River delta** lies the Patok lagoon with a surface area (including the outer lagoon) of 480 hectares. Its catchment area is 800 hectares, of which 450 hectares constitute agriculture fields, 200 hectares is forested, and 150 hectares are pasture. In the wetland complex of Patok, a high number of endangered bird species have been recorded, such as *Pelecanus crispus, Phalacrocorax pygmaeus, Ciconia ciconia, Platalea leucorodia*, and *Numenius tenuirostris*. In the lagoon 166 plant species have been listed, the most abundant species belonging to the families such as *Graminaceae, Compositae, Leguminosae, Rosaceae, Cyperaceae, Chenopodiaceae, Plantaginaceae*. (See Annex 2 for further details on biodiversity harbored in the Drini and Mati deltas.)

24. The current conservation regime in the DMRD consists of 3 protected areas: Kune (800 hectares), Vain (1,500 ha), and Patok-Fushe Kuqe (2,200 ha). These are IUCN Category IV protected areas namely, managed nature reserves.

Climate change context

25. Under Albania's enabling activities portfolio responding to the UNFCCC, the DMRD ecosystem has been prioritized as an ecological system vulnerable to climate change, where adaptation response measures need to be implemented. The Drini Cascade (ranging from inland Kükes to the Drini delta on the Adriatic coast) is identified as an area of Albania where there is both high vulnerability and a high likelihood of significant potential impacts from climate change, including variability, given the globally significant biodiversity it harbors and the national economic importance. This was the result of a highly consultative and participatory process of needs assessment aimed at identifying and validating critical priorities for UNFCCC implementation in Albania[4].

26. Similarly, the Mati delta was identified under the FNC as particularly vulnerable to climate change due to reduction of surface of coastal dunes, saline marshlands and wetlands. These 2 deltas form a contiguous wetland area of global significance. Further, this area is a national development priority as articulated in the MDG Regional Report for Lezha offering an opportunity for considering the interaction of climate impacts with the development policies, projects and programmes envisioned for this administrative region. For these reasons, this area along the northern Adriatic coast of Albania has been selected by stakeholders during the PDF-A for piloting adaptation to climate change.

27. Consultations with national climate and biodiversity experts during the PDF-A has provided a more detailed picture of current climate variability in the target area and its impact on biodiversity, as well as the projected impact of future climate change.

[4] For more information see "Synthesis Report on stocktaking of climate change activities carried out in Albania up to 2004", Ministry of Environment of Albania and UNDP, November 2004

Current climate variability in the DMRD

28. The climate of Albania is typically Mediterranean. It is characterized by mild winters with abundant precipitation and hot, dry summers. The atmospheric conditions affecting the climate of Albania are mainly depressions coming from the North Atlantic, those developed in the Mediterranean Sea (especially that of the Golf of Genoa), as well as Siberian and Azorean anticyclones.

29. The frequency of occurrence of cyclonic and anticyclonic weather systems has a distinct annual pattern. Cyclonic weather, with a high frequency, belongs to the cold period. It is associated with clouds and frontal rain, whereas anticyclonic weather conditions are most frequently present during the warm season of the year. For this reason, during the summer, high-pressure fields, clear skies with occasional clouds and low precipitation dominate weather conditions. During this period, some years have been characterized by 2-3 months without rain. The observed temperature values are high, especially in the inner part of Albania where the cooling effect of the sea is weaker.

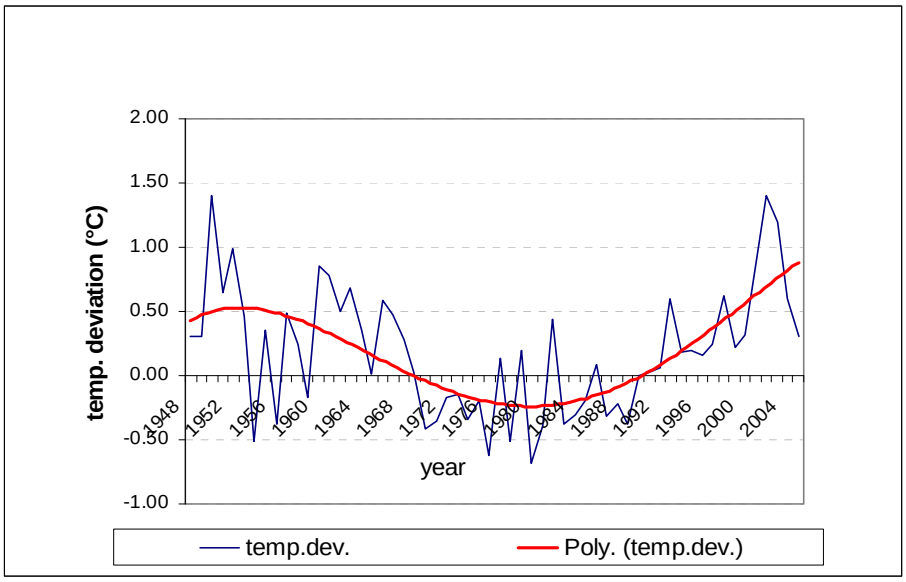
30. Based on data provided by the Hydrometeorological Institute of Albania for the DMRD area that was further processed and analyzed by climate change experts, the DMRD area, with its small and not complex topography, has shown climate variability[5]. There are 2 main factors that create this variability: altitude over sea level and distance from the sea.

31. The **temperature** has shown to vary from 6.8°C in the coldest month (January) up to 23.9°C in the July. The mean maximum varies from 10°C in January up to 29°C in August. The mean minimum temperature vary from 3.5°C (January) up to 19.0°C (July). The absolute minimum temperature of -10.0°C is registered in January and the absolute maximum of 40.0 °C in July. The analysis of the air temperature regime reveals that the annual average value varies around 15.0°C and 15.4°C over DMRD area. Its variation through the years does not present any statistically significant trend (slight decrease: 0.1°/10years, r^2= 0.14). It indicates only variability around the normal value with distinct periods of reverse trends.

32. However, the last 15 years reflect an increasing trend as a consequence of an increase in both maximum and minimum daily temperatures, especially in summer time (decrease of diurnal temperature in summer). Several years after 1990 are characterized by an increasing rate of minimum temperature, higher than that of the maximum temperature in the summer (as shown in Figure 1).

[5] An analysis of long-term time series data (approximately 50 years) for all the meteorological stations in Albania reveals no evidence of climate change, only variability. Extreme events, which are frequent phenomena, are part of this variability.

Figure 1: Inter-annual distribution of mean temperature anomaly for DMRD (1948-2005)
(Deviation from long term average 1961-90)

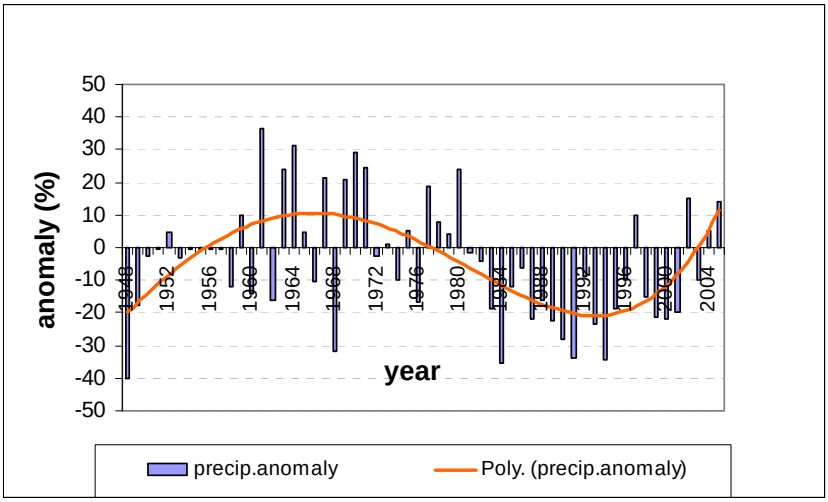


Source: Data from Hydrometeorological Institute

33. As far as the **precipitation** regime is concerned, the DMRD area is characterized by heavy rainfall. The precipitation total varies in wide range, from 1,363 mm recorded in Lezha up to 1,880 mm recorded in Dajc-Zadrime (located to the north of DMRD), while on the whole the average precipitation reaches up to 1,634 mm per year. The highest precipitation total is recorded during the cold months (October-March) about 66 % of the amount. The wettest month is November-December, while the driest are July-August. A key notable event is the heavy rain of 2 October 1946, when 170 mm of rain was recorded over 24 hours for Dajç-Zadrim region and 160 mm for Lezha region, leading to flooding of fields in these regions.

34. The inter-annual course of precipitation anomaly (Figure 2) shows that the variation around the normal value up to 1980 is followed by a continuous decrease (precipitation total less than long term normal value, statistically not significant, r2=0.14). However, since 2000, the precipitation trend has started to increase up to the normal value. There is thus clear evidence that the region is characterized by climate variability. Extreme events such as heavy rains, floods and drought are not rare phenomena for the area, and are part of this variability. The vulnerability of systems/ sectors to these extreme events is far greater than the vulnerability to gradual changes in climate (average changes in temperature and precipitation).The damage caused by climate extremes, even in the current climate, are very high. Taking into account the fact that the frequency of extreme events is likely to intensify, such damages are likely to be irreparable if no measures are taken.

Figure 2: Inter-annual distribution of precipitation total anomaly for DMRD (1948-2005)
(Referring to long term average 1961-90)



Source: Data from Hydrometeorological Institute

Impact of climate variability on biodiversity in the DMRD

35. While vulnerability assessment of ecosystems in Albania is hampered by a lack of detailed knowledge of the impact of current climate variability at the level of communities and individual species, during PDF-A consultations with national experts, the following impacts on biodiversity have been identified.

- Variations in rainfall and anomalously uneven distribution of the rainfall amounts result in exacerbated rates of **erosion** and intensified **flooding** of the lower part of Lezha and Kurbini. The field part of the Lezha Region has been flooded several times in the last years (2002-2005). In September 2002, a total of 26,000 hectares of arable land has been flooded and the overall loss for affected families and the country's infrastructure was estimated to be around USD 17 million. Flooding on 4 December 2004 destroyed in total, 1,500 hectares of arable land. Houses near the river banks of the Drini and Buna were damaged. Damage was also caused to bridges, national and rural roads. In terms of impact on biodiversity, a tendency of natural communities to move inland because of the frequent inundation of low-lying coastal areas has been observed. Also, certain communities, including existing coastal dunes, saline marshlands and wetlands have reduced their surfaces. Further, increased flooding can have an adverse impact on reproduction/ life cycles of species.

- DMRD is an area that offers the highest number of species of nesting and breeding birds in Albania but the numbers of breeding couples is found to be limited and is decreasing over time. Results from monitoring these species show that the breeding potential of the area has decreased over the last few years and the main causes are human induced activities and the increasing level of disturbances (part of which is caused by climate variability) in the area and its surroundings, particularly to the colony of breeding birds. Because of intensive flooding in salt marshes (*Kune-Vain, Patok lagoons*), vegetation is directly affected by more frequent and longer submersion. The majority of salt marsh birds nest on the ground and have shown to be vulnerable to disturbances caused by flooding. Many species feed on intertidal mudflats, where water levels affect the availability of food. The number of nesting bird species is low compared to the previous years and the potential estimated capacity: in 2005 only 11 species with 44-98 nesting pairs have been found in Kune-Vaini Lagoon; and 6 species with 13-34 nesting pairs have been found in Patok Lagoon. These figures are 20-30% lower

compared to those of 2002 (Museum of Natural Sciences of Albania monitoring for 2005). Experts from the Second National Communication team in Albania find a correlation between the reductions in the number of these species, frequent flooding and dry periods that result in habitat loss and fragmentation and experts also share the opinion that the decomposition of flooded vegetation releases significant quantities of methane and other greenhouse gases which might also affect increasing level of disturbances to the area. (Source: Report of Monitoring of the State of Environment prepared by MoEFWA)

- Yearly monitoring of faunal species, carried out by the Museum of Natural Sciences of Albania, shows a reduction in the number of wintering birds from 17,250 individuals in 1995 to 3,370 in 2001 and only 2,318 in 2002. A disturbance in the colony would bring the interruption of reproduction for all the individuals of that colony. For example, the sea eagle, *Haliaetus albicilla*, had previously been a permanent species with many nesting places in coastal areas such as *Velipoja, Lezhe*, and *Karavasta*. However, it is currently found only as a winter species in the area of *Karavasta* and disappeared from the rest. SNC experts believe that the disappearance of these species at other Albanian wetlands came as a result of disturbances and deterioration of parts of its nutritional habitat caused by climate variability of the area. A similar fate has befallen *Phalacrocorax pygmeus* (FNC, expert judgments). Similarly, for amphibians, the number of individuals of *Testudo hermani* is found to be 50% less than it used to be 10 years ago in Kune-Vaini.

- The negative impact of the disturbances to the DMRD area caused by climate variability is also observed in other species. The area of alluvium forests (typical for the region) is declining. Species of nesting birds (such as, *Egretta gazetta, Ardeola ralloides, Nucticorax nycticorax,* etc.) are not visiting/using the Kune Vain lagoons any more. Animals that feed on seeds and fruits are decreasing their populations. Less numbers of *Lepus europeas* are seen in the area, which use to be very populated. Several families of ducks are decreasing the number of species (such as, *Anas, Diving ducks*, etc.). Populations of amphibians (Rana sp. div) and reptiles (*Natrix natrix, Mauremus caspica, Emys arbieularis*) are decreasing or extinct (Source: REC additional report).

- Barriers to movement of species imposed by natural (topography) along with man made barriers (urban and agricultural lands) have contributed to the loss and fragmentation of habitats and loss of species richness, especially flora. So, *Quercus ilex* that 10-15 years ago was widely distributed is rarely seen nowadays in Velipoja and Kune-Vaini. Other species such as *Alnus glutinosa, Fraxinus angustifolia, Quercus ilex* and *Populus alba* can be found fragmentally. To summarize, the area of vegetation in Drini shores is limited, and on the two sides of the Drini River one can not see proper forest habitats, but only groups of trees, in very limited areas.

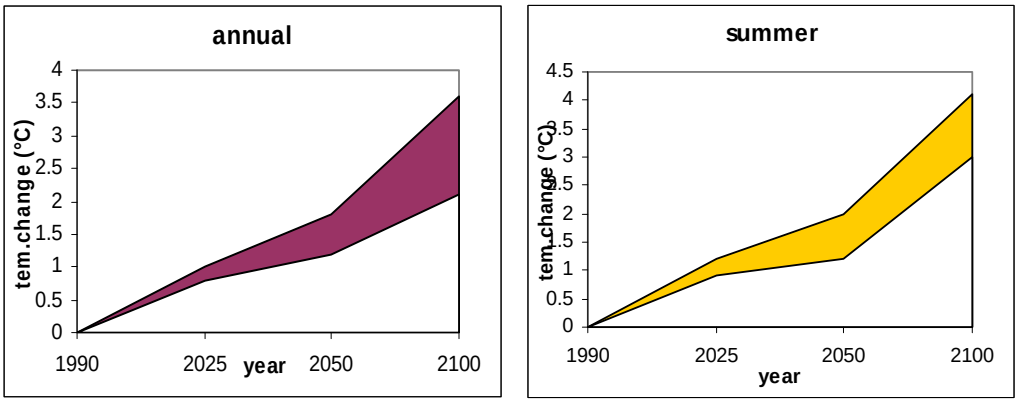
36. In summary, climate impacts on vegetation and coastal margins are a contributory factor to biodiversity loss. However, intensive human uses that cause coastal erosion, habitat loss and fragmentation, and impose barriers to movement are also leading to biodiversity loss. There are a number of programmes supported by the government and donor community to address other anthropogenic stressors. However, these efforts will be incomplete unless climate change related drivers have been considered as part of these activities. Therefore, the GEF project will catalyze the change needed to ensure that all development efforts integrate current and future vulnerability of the coastal ecosystem to climate change.

Projected climate change

37. Extrapolation under the temperature scenarios, run by MAGICC/ SCENGEN (downscaling of the models of global climate change used in Albania's FNC) shows that by 2025 the **annual temperature for the**

DMRD is likely to increase 1.0°C, up to 1.8°C by 2050, and up to 3.6°C by 2100. Mean summer temperature is expected to increase respectively by 1.2°C, 2°C, 4.1°C.

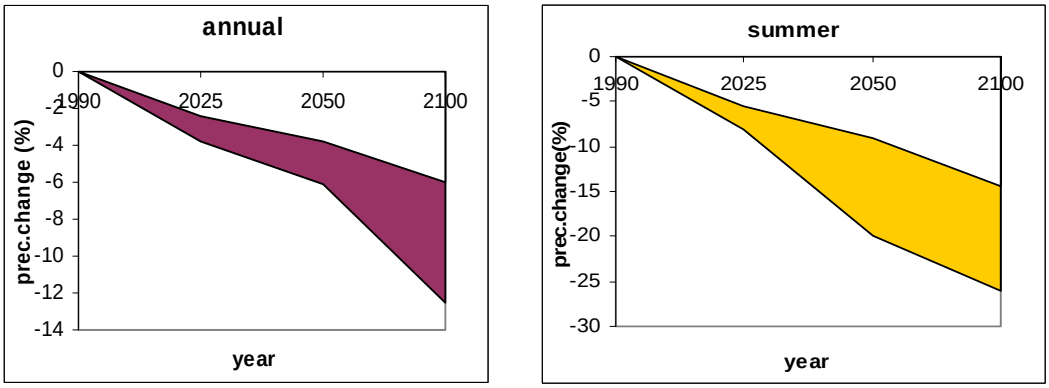
Figure 3: Expected temperature changes



(Source: CCSA, FNC)[6]

38. The extrapolation under the precipitation scenarios shows that **precipitation changes for the DMRD** are expected to continuously decrease especially in summer time (up to 24%). However, predicted changes in precipitation are far less certain, and in many areas, the size of predicted precipitation changes due to global warming are small compared to those due to natural multi-decadal variability.

Figure 4: Expected precipitation changes



(Source: CCSA, FNC)[6]

39. However, even slight changes in average precipitation could lead to substantial increases in the variability of precipitation events because the size of precipitation events is not normally distributed about the mean. A change in average precipitation will also cause a change in variability (Meehl et al., 2000). Climate change

[6] The graphs are taken from FNC. Statistical downscaling of the outputs of MAGICC has been used to interpolate the data within the territory. Downscaling is from 5*5° to 0.5*0.5°. Downscaling has not been done on a dynamic basis. It does not take into consideration topography, so that, there are not big differences within the areas of finer grid. The charts represent the averaged results over the territory.

models predict that global warming will generally lead to more extreme events, such as heavy 1-day and multi-day precipitation (Easterling et al., 2000), and an increase in the frequency of extreme rainfall[7].

40. Many models predict that extreme water flow events such as floods are likely to increase, due to heavier individual rainfall events (Reynard et al, 1998) or predict seasonal shifts in peak flooding seasons (Saelthun et al., 1998). Models of climate change suggest that hydrological droughts should increase in frequency. The effects of climate change on low flow conditions appear to be sensitive to the storage capacity of the water system; basins with little groundwater storage capacity may experience more frequent droughts because they do not benefit as much from winter groundwater recharge (Arnell et al., 2001).

41. In addition, the outputs of CCSA also suggest that **sea level** is likely to rise 20-24 cm by 2050 and 48-61 cm by 2100.

Impact of expected climate change on biodiversity in the DMRD

42. There is growing scientific consensus that climate change could present a major threat to biodiversity at both the species and the ecosystem levels (Jeftic et al., 1996). Many ecosystems are already threatened by human activities such as pollution, increasing resource demands, and non sustainable management practices. Climate change represents an important additional stress. Species will be more vulnerable, and even where they are able to tolerate climate change, they could face new competitors, predators, diseases, and alien species for which they have no natural defense.

43. In **marine and coastal ecosystems**, the increase in air temperature will cause an increase in the seawater temperature and will affect a variety of marine species including fish. Most marine species depend very much on the health of seagrass meadows (especially those of Posidonia oceanica and Cymodocea nodosa). Sea grasses are already under threat from various anthropogenic factors such as pollution and trawling. An increase in sea surface temperature is unlikely to have a direct, negative effect since most sea grasses, including Posidonia and Cymodocea, are somewhat thermophilic. However, thermophilic algae and perhaps other sea grasses may actively compete with native species.

44. The increase in temperature may favor the diffusion of warm water species migrating in from the Red Sea via the Suez Canal. One migrant sea grass (via the Suez Canal), Halophila stipulacea has already become established in some parts of the Albanian Ionian Coast. This, however, is unlikely to pose a threat to Posidonia meadows since it is established in a different niche, which is not sensitive from the fisheries point of view.

45. It is expected that salinity fluctuations in shallow areas as well as the introduction of greater sediment loads and enhanced turbidity may limit the range of sublittoral and benthic species in such environments.

46. The sea level rise of 24 cm by 2050 and of 61 cm by 2100 predicted by CCSA will result in the gradual inundation of low-lying coastal areas. The natural communities associated with such areas are expected to move inland. However, certain communities including existing coastal dunes, saline marshlands and wetlands are likely to reduce their surfaces and, although new dunes, marshlands and wetlands may gradually form elsewhere. Vulnerable areas include the north and south of Mati delta (Patok), the north of Erzeni delta, in the old of Semani delta, the area between Semani and Vjosa rivers and the south of Vjosa delta. An increase in sea level may also be expected in the Ceka lagoon and the formation of new lagoon is expected in the Mati delta.

[7] Source: WWF, 2003, Buying Time: A User's Manual for Building Resistance and Resilience to Climate Change in Natural Systems

47. All these areas support a number of rare, threatened plants and animals and their loss will be highly significant to biodiversity as well as to the scientific and cultural heritage. One major impact of predicted climatic changes on the coastal environment will be the increased erosion and possible loss of coastal sandy dunes. Inland migration of sandy dunes will take place only in those cases where sedimentary flux and replenishment have not been reduced by inland construction (eg roads, buildings or pine forests in Divjaka, Pishe-Poro, Kune etc.). There are indications (total absence of such species as Ammophila arenaria, Elymus farctus etc.) that erosion processes (Kripore e Kavajes, Patok etc.) presently affect a number of sandy dunes. Taking all these points into consideration, it may be assumed that extreme climatic changes suggested by CCSA will negatively affect the sand dunes ecosystems, leading to a reduction in their surface by 2100.

48. While increased air temperatures may lead to increased plant productivity in sand dune and salt marsh communities, increased intrusion of seawater brought about by a rise in sea level may reduce the number of species that are less tolerant to elevated salinities (mostly, species of the class Ammophiletea).

49. Sea level rise 48-61 cm by 2100 will profoundly influence coastal natural wetland ecosystems leading to their disruption through inundation and saltwater intrusion. Typically a regionalization of different vegetation types occurs as one moves from greater to lesser tidal influence zones and from saline to freshwater situations. Karavasta and Narta Lagoons are expected to have better communications with the sea in the future. This will change the present ecosystems, gradually to a complete saline ecosystem. Changes in these wetland areas in favor of halophilic vegetation will also affect many bird species through loss of nesting, breeding, staging and wintering habitat (Demiraj et al., 1996).

50. Sea level rise of 61 cm would result in direct flooding of a large surface around Rrushkulli and a new salt marsh will be formed in this area not flooded previously. In salt marshes (Kune-Vain, Patok, Rrushkull, Karavasta, Narta and Butrinti), vegetation will be directly affected by more frequent and longer submersion. Most salt marsh birds nest on the ground and thus will be vulnerable to flooding. Many species feed on intertidal mudflats, where water levels affect the availability of food.

51. In **freshwater ecosystems**, sea level rise of 61 cm will presumably cause significant changes to river estuaries. A large part of the estuaries will be flooded. Seawater will penetrate deep into the rivers of Mati, Erzeni, Shkumbini, Semani, Vjosa etc. and the saltwater wedge can be expected to intrude along the riverbed to around 500-1000m further inland. Future trends would be towards the further restriction of hydrophilic species such as Salix sp., Phragmites australis and increase in favor of halophilic species such as Arthrocnemum sp.,Salicornia sp., Inula crithmoides etc.

52. Sea level rise will impair estuarine water quality in other subtle ways, contributing to the degradation of in situ conditions for aquatic biota (e.g. increased temperature results in lower dissolved oxygen) and increasing the health risks of the populations dependent on withdrawals of fresh water from the rivers.

Legislation and policy context

53. Albania has a strong body of **laws** aimed at environmental protection. According to the Constitution, every citizen in Albania is entitled to “an ecologically healthy environment for present and future generations” as well as “access to information on the state of the environment”. The Constitution also requires the “rational exploitation of forests, waters and pastures based on the principle of sustainable development”. The Law on Environmental Protection (1993, amended in 1998, 2002) forms the basis for environmental management. It addresses the prevention and reduction of pollution, sustainable management of natural resources, monitoring, how to define pollution levels. It provides binding provisions for environmental impact assessment and the implementation of the polluter pays principle.

54. A series of sectoral laws contain provisions for environmental protection, such as the law on water reserves, law on mining, and laws on regulatory entity of waste waters, hunting, forestry, soil, and urban planning. These are accompanied by a considerable number of normative acts.

55. Recently, several laws have been approved, such as the Law on protected areas (2002), environmental impact assessment (2002), protection of marine environment from pollution, air protection, as well as several decisions on environmental monitoring, procedures related to the designation of protected areas, administration of protected areas, and the designation of Nature Monuments. The challenge, however, has been in implementation and enforcement of environmental laws. GOA is working to strengthen this through the EU funded ELPA (Environmental Legislation and Planning in Albania) project.

56. Following the first National Environmental Strategy produced in 1993, with the assistance of the World Bank, and the National Environmental Action Plan finalized in 2002 and produced with the assistance of both PHARE and World Bank, the Ministry of Environment, Forestry and Water Management assisted by EU CARDS Programme has very recently produced the second National Environmental Strategy (NES). This is currently undergoing the procedures for getting approval from the Council of Ministers. The National Environmental Strategy (once approved) will be the basic document presenting the Government's **policy** and specific programs in the environmental sector. The NES is part of the National Strategy for Socio-Economic Development and it is based upon the National Plan for the Approximation of the Legislation, National Action Plan for the Implementation of the European Partnership Priorities and the existing sectoral strategies such as the ones on Transport, Agriculture, and Energy.

57. Other main environmental policy documents include the National Water Strategy (1996); the National Waste Management plan (1996); the National Biodiversity Strategy and Action Plan (2000); the 'Green Strategy' (1998) developed by the Ministry of Agriculture and Food; the National Strategy for the Development of Forestry and Pastures in Albania (2005); the National Strategy for Tourism Development (2003), and the National Energy Strategy. A draft law on biodiversity protection has also been prepared, and has been submitted to the Albanian Parliament for approval. This draft law defines the roles and responsibilities of the various Ministries involved in biodiversity conservation. Albania already has a red list of protected species, which protects all endemic and sub-endemic species. This list has to be updated every five years.

58. These national level policies are of relevance to the project inasmuch as they govern activities in sectors that have a direct impact on biodiversity. As the vulnerability assessment of the DMRD ecological system is elaborated and specific adaptation response measures are identified by the project, it will be important to ensure that these national level policies and plans, as well as future revisions to them, consider the sensitivity of the DMRD to climate change.

59. In terms of **policy making and implementation processes**, governance has been a particularly problematic issue in the transition period, as previous centralized institutions have broken down, and the poverty and instability in the early transition years led to delays in creating effective, responsive institutions adapted to new political realities. In the environment sector, illegal harvesting of natural resources has been a particular challenge requiring a multi-sectoral response. The Government of Albania has responded by passing the Law on Organization and Functioning of Local Government in 2000, which increased the responsibility of local government for delivery of a broad range of services, including local infrastructure, public order, natural resource and forest management and environmental protection. The decentralization strategy was to be supported by fiscal decentralization, both through transfers from central government to local bodies, and by enhanced capacity for local revenue generation. The second level of government are the regions (qarks) which according to the law are conceived as coordinating bodies with a few exclusive responsibilities for formulating and implementing regional policies in compliance with national policies (mainly for interurban and rural roads, regional transportation services, regional land use planning and

regional environmental measures). Implementation of the 2000 law is progressing slowly but is being supported by the World Bank and other donors, and is consistent with evolving government structures in many EU member and accession countries. In terms of mainstreaming adaptation in the DMRD then, both the central government and the regional administration of Lezha will be critical partners.

Project Baseline[8]

Anthropogenic threats to biodiversity

60. Albania's decade long transition to a market economy, while involving major political, social and economic changes, has generated many positive results. However, natural resource management has suffered. In terms of biological diversity, such phenomena as deforestation, soil erosion, uncontrolled land-use as well as lack of sewage treatment and coastal and surface water management have led to degradation and losses. Thus, climate change related impacts on biodiversity will occur against the backdrop of human induced threats to biodiversity, the existence of which further weakens the ecosystem's resilience to climate change and undermines the ability of the ecosystem to adapt.

61. Historically, the Drini River has been subject to changes stemming from the **natural process of river morphology**, which has impacted the biodiversity of the area. Originally the Drini and Buna Rivers were two separate rivers. Up to the middle of the nineteenth century, the entire flow of the Drini was discharged through a separate river channel that passed through Lezhe and into the Adriatic via a delta system that now comprises the Vaine and Kune lagoons, to the west of the town of Lezhe. A major flood event occurred in the mid 1800's that caused the Drini to burst its banks, and the resulting flood wave discharged into the Buna, at the same time eroding a new river channel permanently linking the Drini with the Buna. The Drini was split with approximately two thirds of the flow being discharged to the Buna and the remaining one third continuing to be discharged down the original river channel via Lezhe.

62. As the region around Lezhe became progressively developed, a series of flood events caused serious flood damage in the region. It was thus decided, in the early 1950's, to construct two river diversion schemes for the purpose of diverting the remaining flow of the original Drini river channel (Lower Drini) and the neighboring Gjadri river, into the Buna river via the link channel eroded during major flood event of the previous century, thus effectively reducing the original Drini river channel into a minor drainage channel. This has resulted in a much reduced flood drainage capability of these two rivers, even to pass flood runoff from their local catchments. Against this historical backdrop of river morphology, current climate variability and extreme climate events such as floods have more devastating consequences on social, economic and ecological systems in the Drini watershed. Unlike the Drini, processes of river morphology have not affected the Mati River.

63. In terms of present day threats to biodiversity in the DMRD, key threats include **unplanned development of the territory** and **illegal construction** of buildings within sensitive areas, as well as **sewage and solid waste pollution**. As a result of the economic downturn of the early 1990s, people from the high mountains moved to the low land in large numbers leading to the construction of roads and infrastructure services without the guidance of a master plan. Sewage systems are overtaxing the amortized infrastructure. Wastewater is discharged without any treatment from towns directly into rivers or drainage channels, which carry the untreated sewage directly into the wetland habitats of Kune-Vain and Patok that harbor endangered and endemic species.

[8] i.e., who is vulnerable to what and what is currently being done to reduce that vulnerability

64. The Lezha Region is currently working with the EU to address these issues by strengthening environmental planning and zoning (ELPA project in Baseline Programming section) and with the World Bank on sewage and wastewater issues (IWEMP in Baseline Programming section).

65. The Kune-Vain reserves in particular suffer from several problems including: (i) there is no integrated sustainable management strategy based on multiple uses and conservation of the natural resources; (ii) progressive spreading and enlargement of building construction and illegal building; (iii) presence of uncontrolled tree cutting and illegal fishing; (iv) inappropriate hydraulic management of the lagoons; (v) inappropriate aquaculture techniques; (vi) deterioration and degradation of landscape; and (vii) limited financial means for effective management of the protected area. This is being addressed by the government, in collaboration with the World Bank, through improving the management effectiveness of the Kune and Vain managed nature reserves, as part of the protected area component of the above mentioned IWEMP. Thus, under the baseline there are several efforts underway to address these threats and limit human impact on biodiversity, and these are further described under the baseline programming section below.

Climate related threats to biodiversity

66. Further discussion with national climate and biodiversity experts during the PDF-A has provided a more detailed picture of current climate variability in the target area and its impact on biodiversity, as well as the projected impact of future climate change. This information is presented above under the Climate Change Context section.

Baseline programming

67. In the baseline scenario, the government of Albania has and will continue to undertake several initiatives to promote sustainable development of the administrative districts wherein the Drini and Mati River deltas are located. This includes reducing human induced threats to biodiversity such as unplanned development of the territory, illegal construction, sewage and wastewater pollution and destructive activities within the Kune-Vain reserve. The following discussion summarizes this baseline, inasmuch as it is relevant to the context of this MSP that proposes to mainstream adaptation to climate change into the sustainable development baseline.

68. **Environmental Legislation and Planning (US$ 352,386)**: The government of Albania, with support from the European Commission, is working to strengthen environmental legislation and planning in Albania (EU-ELPA project). There are four main components: (i) development of a National Environmental Strategy (NES); (ii) development of Regional Environmental Action Plan (REAP) for Shkodra and Lezha regions; (iii) development of Local Environmental Action Plans (LEAPs) for the communes of Golemi, Shengjin and Velipoja; (iv) a pilot project for the coastal zone from Buna river delta to Ishimi delta. The objective of the Regional Plan for Shkodra and Lezha is to establish appropriate land use zoning including urban and rural areas to achieve environmental, economic and social goals. Three broad types of zones are identified – environmental zones (core biodiversity and nature protection areas, traditional landscapes, transitional areas); urban zones; and tourism zones. The implementation of the recommended zoning regime in the environmental zone would greatly reduce pressures on the DMRD ecosystem through measures such as prohibitions on construction of permanent structures. However climate change impacts are not explicitly taken into account and adaptation response measures could be integrated in this zoning scheme. For instance the strip of wetland area between the Kune-Vaine protected area in the Drini delta and the Patok lagoon in the Mati delta could be zoned so as to form a migratory corridor between the 2 lagoons.

69. **Integrated Coastal Zone Management ($38.5 million in Phase I)**: This World Bank supported project focuses on the southern coast of Albania. It aims at setting-up an integrated coastal zone management approach to reducing coastal degradation through: (i) strengthening regulatory policy and governance of the coastal zone, land use and regional planning, and institutional capacity; (ii) initiating targeted municipal and

community investments in the southern coast to improve environmental conditions, enhance cultural resources and encourage community support for sustainable coastal zone management; and (iii) reducing soil and groundwater contamination in a former chemical plant at Porto Romano. While not operating within the DMRD, this project and its subsequent phases could constitute an important locus for replication of the experience in the northern coast (DMRD) with mainstreaming adaptation response measures. (However, note that since this project is not within the DMRD system boundary it is not being included under the baseline estimate of the incremental cost analysis.)

70. **Natural Resource Development Project (IDA credit of $7 million and GEF grant of $5 million)**: This World Bank supported project focuses on 3 watersheds – the Drini, Mati and Shkumbini – and aims to reverse severe degradation of upland and mountainous erosion prone lands, and sediment runoff to the Adriatic Sea through community-based rehabilitation and management of upland forests and pastures. While this project does not cover lowland, delta areas, many of the threats to biodiversity in the DMRD emanate in upland watersheds and this project will serve to mitigate those.

71. **Integrated Water and Ecosystems Management project -- IWEMP** (IDA credit of $12.5 million, GEF grant of $5 million, and Euro 2 million from Lux-Development; of this only the amount that is targeted for the Kune and Vaine protected areas i.e., US$ 700,000 is being included in the baseline estimate of the incremental cost analysis): The development objective of this GEF/ European Investment Bank project is to improve the municipal wastewater services in the coastal cities of Durres, Lezha and Saranda. By achieving this objective the project will also contribute to economic growth, because all three project cities are tourist areas whose continued prosperity depends heavily on a healthy coastal environment. The global environmental objective is to improve the health and habitat conditions of globally significant marine and coastal ecosystems along the coastline of Albania in an integrated manner. In Lezha (DMRD region), the objectives will be achieved through: (i) reduction of sewage pollution loads through the development and establishment of low cost water treatment technologies Constructed Treatment Wetlands (CTWs) producing environmental incremental benefits; (ii) promoting the establishment and improve the management of the Kune-Vaine protected wetland; and (iii) improvement of the dialogue between public institutions and citizens through a public communication program as well as a program of dissemination and replication of project achievements. These activities are focused on reducing human-induced threats to biodiversity, but climate change impacts are not being taken into account in the development and implementation of the Kune-Vaine protected area management plan. The project is in the initial stages of implementation, and will be beginning the process of preparing a management plan for the protected area. This would be an opportune time to engage the project team in discussions on mainstreaming adaptation response measures.

72. **Management of the cross-border Drini Watershed (potentially a GEF MSP)**: This is a proposed project (concept stage) of the WB/GEF aimed at integrated management of the entire Drini Watershed covering the territory of Albania, and Macedonia (also hoping to include Kosovo) which will aim to further global environmental objectives under the GEF's International Waters focal area.

73. **On going efforts to strengthen the National Protected Area System**: As stated in Albania's 3rd National Report to the CBD[9], the Law on Protected Areas (2004), and the new Law on Biodiversity (2006) stipulate the purpose, regime of protection and use of protected areas, the procedures for their designation and changes within them. The law sanctions plural property of forests, lands and aquatic areas within protected areas, as well as those that are exclusive state property. Through the Protected Areas law, the MOE assumes responsibility for the management, the commissioning of maintenance activities and the guarding of protected areas that are exclusive property of the state; and responsibility for the management and control of activities in other protected areas under different ownership. The law introduces management plans for protected areas. Albania has established some time-bound and measurable national-level protected areas targets and indicators

[9] Submitted to the CBD on 25.01.2007.

under the NBSAP. Increasing the surface of protected areas is one of the main objectives on biodiversity protection of the MOE and over the period 2000-2005 the surface has been doubled. However, the management of these areas is still weak. Albania is assessing protected area capacity needs under the GEF/ WB Biodiversity Enabling Activity II project (Assessment of Capacity Building needs to address the Priorities of Albania's Biodiversity Strategy and Action Plan). The objective is to prepare a national working plan (including the institutional framework) and a strategy for increasing protected areas. More specifically, it will: assist in the planning of protected areas and their integration into all sectors by providing strategic advice to policy makers; develop tools for strengthening the capacities and effectiveness of protected area managers through the provision of guidance, working plans and information; and give guidelines for increasing the surface of the protected areas. Ongoing efforts to strengthen the national PA system in Albania include the elaboration and implementation of management plans, law enforcement, and establishment of a management board for each protected area with the participation of local authorities and other stakeholders. Training and application of economic instruments are other important element for the strengthening the protected area system of Albania. With support from GEF, Albania is preparing several GEF full sized projects, including the Conservation of Wetland and Coastal Ecosystem in Mediterranean Region (MedWet Coast), Integrated Ecosystem Management in the Transboundary Prespa Park region (UNDP), Lake Skadar Integrated Ecosystem Management (WB), and Integrated Water and Ecosystems Management Project (WB).

74. **Protected Areas planning and management in DMRD**: The current conservation regime in the Drini and Mati river deltas consists of 3 protected areas: Kune (800 hectares), Vain (1,500 ha), and Patok-Fushe Kuqe (2,200 ha). These are IUCN Category IV protected areas namely, managed nature reserves. These 3 protected areas fall under the jurisdiction of the Directorates of Forestry Service of Lezhe and Lac districts. There are, however, weaknesses in the existing conservation regime mainly relating to a lack of management plans for the PAs, and inadequate institutional and human capacity to administer them. Through World Bank support under the IWEMP project described above, the Directorate of Nature Protection Policy under the Ministry of Environment, Forest and Water Administration (MOEFWA) is improving the management effectiveness of the Kune-Vain protected area and this will generate valuable lessons for improving management effectiveness in Patok-Fushe Kuqe. By addressing non-climate stresses, the work of the Directorate will be enhancing the inherent capacity of the DMRD to adapt to climate change. There is, however, scope to integrate additional adaptation response measures and the GEF Adaptation Alternative will identify these. The government plans to expand the territorial extent of protected areas in the DMRD to cover the entire region of Shengjin (from Kune-Vain to Tale to River Mati to Patok to Fushe Kuqe to River Ishmi), offering an entry-point for integrating climate change considerations into these efforts.

75. **Community-level activities**: REC Albania through its grant facility is supporting projects in the Shengjini and Velipoja communes for improving both environment and quality of life. The budget is US$ 56,633. In addition, the GEF/SGP is supporting communities in Albania on in-situ conservation activities. Activities in the DMRD are however limited to the monitoring of sea turtle populations in the Patok lagoon and Mediterranean endemic sea grass (Posedonia oceanica). The budget is US$ 27,950. At present, the issue of adaptation to climate change is not included in the SGP strategy

76. **Study on flood issues and hydrology of Lezha Region (US$ 100,000)**: The Institute of Hydrology of the Academy of Sciences has carried out a detailed study on flood issues for the region and the hydrology. This report was required by the government of Albania, and the recommendations of it have been submitted to the government, and the Regional Council of Lezha.

77. **Nation-wide monitoring system (US$ 2.2 million)**: The Hydrometeorological Institute is working on the establishment of an integrated monitoring system for all of Albania that comprises meteorological, hydrological and environmental (air and water quality) monitoring, including establishment of an early warning system. This early warning system will generate information/ data that will be useful for the

Directorate of Nature Protection in adapting/ modifying their ongoing conservation regime/ activities in protected areas in the DMRD to respond to climate change, including variability.

Baseline gaps and barrier analysis

78. In the absence of a GEF-supported adaptation intervention, the above mentioned sustainable development planning and programming activities for the DMRD will not take into account the impact of climate change, despite the scientific consensus on vulnerability of this area and the potential adverse impacts in terms of biodiversity loss.

79. As noted in the FNC, species and ecosystems will adapt autonomously as a response to climate change, provided their limited inherent adaptive capabilities are not undermined by severe human-induced threats. The primary influence of anthropogenic climate change on ecosystems is expected to be through the rate and magnitude of change in climate means and extremes. **Climate change is expected to occur at a rapid rate relative to the speed at which ecosystems can adapt and reestablish themselves and through the direct effects of increased atmospheric CO_2 concentrations.**

80. The primary goal of adaptation in the biodiversity sector therefore should be to ensure that natural ecosystems are able to respond to climate change to the limits of their capabilities, by reducing or removing existing pressures. It is also possible to adopt policies and practices which directly assist species in adjusting to climate change, for example by designating and protecting migration corridors, strengthening existing management regimes within and outside protected areas to enhance resilience of the ecosystem by focusing on species that are more vulnerable and sensitive to climate change, and monitoring of biodiversity, particularly since plant and animal populations serve as barometers of ecosystem integrity. It is in this sense that existing baseline programming can be enhanced to ensure that pressures are minimized more than they would be in the baseline scenario through additional adaptation response measures.

81. In the absence of this MSP, such options will not be explored, let alone be integrated and implemented, in the DMRD because of the prevalence of barriers to mainstreaming adaptation. The main barrier preventing the consideration and integration of adaptation to climate change in the sustainable development programming for the region is the absence of institutional and individual capacities to undertake a rigorous assessment of climate change impact on biodiversity, and then to apply this technical information to raise awareness and mobilize programmatic choices regarding sustainable development of the DMRD that take into account consequences of climate change on coastal ecosystem. More specifically, the following are the key barriers to be addressed by the project:

- There is no observation and forecasting capacity in the coastal region;
- Adaptation needs are not considered into the coastal area planning;
- Programmes and projects directed towards protection of the unique coastal compound ecosystem of DMRD do not accommodate climate change concerns;
- There is limited understanding of the coastal habitat change instigated by climate change that could lead to the combined efforts for autonomous and planned adaptation

82. This is true at the level of the central government, the regional administration, communities residing in the area, and the NGO sector. What is particularly significant in the Albanian context is the process of **decentralization** that began in 2000 under which increasing responsibilities are being devolved to the Quarks, including environmental protection and management of natural resources. At present, at the local and regional level, knowledge on environmental issues is confined to immediate local environmental problems, while there are no capacities in terms of global environmental issues. The decentralization process provides an opportunity for building local and regional capacity in the DMRD so that the climate change imposed

threat to the target area is minimized and managed by adequate response policies and measures on a sustainable basis.

83. The FNC and TNA (both completed) and SNC (currently under implementation) are the first exercises in Albania that have considered this issue in a serious and rigorous manner based on UNFCCC guidelines. Thus far the analysis has been at a national scale (FNC), regional scale covering the covering the coastal zone (TNA) and at the level of the entire Drini cascade extending from inland Kukes to the Drini delta (SNC). These exercises have however been instrumental in prioritizing, through broad-based stakeholder consultation, the DMRD as an area where adaptation to climate change should be taken into account following a rigorous methodology and process.

84. Discussions during the PDF-A stage with central and regional government representatives, donors, NGOs and research institutes have shown that the interest and commitment to the concept of addressing adaptation issues in the DMRD is present. However, in order to move from concept to practice, a detailed and quantified impact assessment at the regional level needs to take place in the focused geographic boundaries of the DMRD, and feasible response measures need to be identified and implementation piloted. The key bottleneck has been the lack of capacities (human, financial, technical) to assess such impact at a smaller resolution. Such type of assessment will help to identify how plant and animal communities will be affected by climate change i.e., what physical and biological changes could take place as a result of changes in temperature, precipitation, or sea level. This, in turn, will make it possible to identify appropriate response measures and integrate them into ongoing conservation efforts as well as the development agenda so that the DMRD ecosystem does not face additional pressures.

PART II: STRATEGY

Alternative GEF Scenario

85. Based on the above situation analysis, the proposed project strategy is to take an "adaptive capacity approach". As outlined in UNDP's Adaptation Policy Framework (APF), under this approach, the project will assess the DMRD ecosystem with respect to its current adaptive capacity, and propose ways in which adaptive capacity can be increased so that it is better able to cope with climate change including variability. The focus will be on increasing the capacity of the DMRD ecological system to be resilient to climate change. This will be achieved by addressing the information, awareness, and technical capacity barriers that are inhibiting the government at the regional and central level, communities and NGOs from identifying and implementing specific adaptation response measures in the DMRD.

86. The long-term development **goal** of this medium size project is to assist Albania in beginning a process by which strategies to moderate, cope with, and take advantage of the consequences of climate change are enhanced, developed, and implemented. The specific **objective** of the project is to build adaptive capacities in the DMRD in order to help vulnerable ecosystems and local livelihoods to adapt to climate change. This will be done by first identifying, and then integrating climate change response measures into conservation and development programming in the DMRD and piloting some critical adaptation activities with high demonstration and replication value. The following **outcomes**, each of which will draw on APF guidance, will contribute towards the achievement of the project objective. Indicators and assumptions for each outcome are presented in the logframe in Annex 4.

Outcome 1: Capacities to monitor and respond to anticipated climate change impacts in the DMRD at the institutional and community levels developed;

Outcome 2: DMRD region's conservation and development programmes, plans and policies integrate climate change risks and take local pilot actions for coastal adaptation;

Outcome 3: Capacity for adaptive management, monitoring and evaluation, learning, and replication of project lessons developed

Outcome 1: Capacities to monitor and respond to anticipated climate change impacts in the DMRD at the institutional and community levels developed

(SPA Increment: $389,700: Of which GEF: $ 329,700; Cofinance: $60,000)

87. Current understanding of the impacts of climate change on various sectors in Albania has been developed under the aegis of the FNC and TNA (national in scope), and is being further developed under the SNC (scope narrowed to Drini Cascade). This work has been instrumental in advancing Albania's capacity in vulnerability and adaptation assessment in general, and in identifying the DMRD (through a multi-criteria analysis) as a particularly vulnerable part of the country.

88. Outcome 1 will take the results of these exercises further by building sustainable national technical capacity for vulnerability assessment and adaptation responses, specifically related to the DMRD ecological system. The project will draw on the outputs and capacities developed under the SNC related to vulnerability assessment of socio-economic and environmental systems, and will extend this to vulnerability assessment and adaptation responses for the DMRD ecological system. It will then link this to specific changes in conservation and development planning and policy process for this target area, so as to ensure that climate change concerns are routinely taken into account in these efforts. Key outputs under this outcome are:

Output 1.1: A system for monitoring climate change and its impacts on the DMRD ecosystem is in place

89. This output will build on outcomes of the SNC, namely climate assessments and vulnerability assessments for the entire Drini cascade, to establish a long-term system for continuous monitoring of climate change impacts with forecasting and early warning capacities. This will require updating of data and scenarios for the target exposure unit namely, the DMRD. The project will ensure that the ecosystem monitoring system of the Regional Environmental Agency for Lezha incorporates monitoring of climate change impacts by developing national and local capacity for data collection and analysis. This will draw from the work of the Hydrometeorological Institute on the establishment of an integrated monitoring system for all of Albania that comprises meteorological, hydrological and environmental (air and water quality) monitoring, including establishment of an early warning system. This integrated monitoring and early warning system could contribute significantly to ecosystem conservation in the DMRD area.

90. Biodiversity assessments will be undertaken to evaluate the potential impact of climate change on biodiversity attributes, including structural attributes such as species and genetic diversity, and functional attributes such as ecosystem properties and processes. The assessment will follow the classic species-community-ecosystem hierarchy and the emphasis shifts will alternate from the structural to the functional attributes of biodiversity. The techniques to assess vulnerability to environmental change in general, as well as methods that can be used to examine the implications of particular climate change scenarios will be applied, building on methodologies used in the FNC, the basic IPCC guidelines (1994) and other reports such as the WWF manual on building resilience to climate change in natural systems. The best possible approaches or combination of approaches will be analyzed and decided. These include the use of expert judgment, climate "envelope" modeling, dynamic population modeling, and analogue and monitoring studies. A group of species might form the focus of the analysis as well, as for example in assessing the potential impacts of climate change on wildlife species richness.

91. The project will closely coordinate with the SNC V&A team to build on those outcomes. A multi-disciplinary team of climatologists, hydrologists, biologists, foresters, agronomists, economists, health and other relevant experts will be relied on. Included in this group will be government and non-government institutions and their staff responsible for protected area management in the region, as well as with the key

biodiversity conservation projects noted above so that it draws on existing technical capacity. See Annex 5 on the proposed methodology that is to be used by the team for vulnerability assessment and scenario development. This will involve training in the use and application of existing models such as DIVA[10], collection of data to run the model, training of national experts in the assessment of physical and biological changes. The assessment of impact of expected changes and ecosystems' adaptation will be strongly based in the Adaptation Policy Framework and its technical papers.

Output 1.2: Local government institutions have the capacity to analyze data on climate variability and associated ecological impacts and integrate this into decision making

92. Current capacities of local government to analyze and interpret climate data and utilize this in development decision making is lacking. The project will therefore build up institutional capacities and individual skills in this regard. This will include the Directorates of Forestry Service for Lezha and Lac that are now responsible for PA administration. The project will develop their capacities to identify and manage climate change risks as part of the ecological risk assessment (ERA) framework. Methods of early detection and assessing the ecological importance of change using ecosystem-level responses will be applied in determining the climate change risks, level of exposure, timescale and risk management options. The ERA that accommodates climate change risks as additional threats to ecological structures will guide protected area managers in adaptation decisions. Other methodological options will also be explored during the inception phase of project implementation. The project will also dedicate resources to sharing this experience in terms of utilizing information and data from the monitoring system to inform decision making with other countries in the Southeastern Europe region (particularly those countries bordering the Adriatic Sea).

Output 1.3: Community capacities to understand the impacts of climate fluctuations and expected changes on natural ecosystems and local livelihoods are developed

93. To date no significant effort has been made to understand the impact of climate vulnerability at the regional level, nor to mobilize stakeholders and the wider public in assessing the range of rising vulnerabilities and adaptation options, nor to bring the lessons to bear on regional and national sustainable development policy processes. The project will contribute not only to strengthening research on vulnerability and adaptation, but also to connecting scientific results with policymaking processes and the emerging civil society dialogue on expected changes in ecosystems. Integrated assessment, involving the participation of scientists as well as a wide range of stakeholders, is an essential step to review existing knowledge in light of new concerns, assess policy implications and options, and engage affected stakeholders in a constructive dialogue on adaptation.

94. Community engagement is necessary for more comprehensive assessment of vulnerability through bottom up assessment tools and methods. Therefore local communities will be mobilized through application of Participatory Rural Appraisal (PRA) techniques that will facilitate the engagement and bottom-up assessments of climate risks and vulnerabilities of coastal ecosystems and community livelihoods. Community involvement in the identification and implementation of adaptation response measures will be critical to ensure that communities feel responsible, are less likely to engage in destructive activities, and are more likely to support adaptation measures. This output will focus on building awareness of the issues within the communities regarding the vital heritage they protect and ways in which it is endangered by current climate variability and expected climate change. It will develop their skills and capacities to be active

[10] Climate change, in particular an accelerated rise in sea level, will add to the existing pressure on coastal zones. The effects of climate change on coastal zones will include increased flood risk and storm damage, loss of low-lying land and coastal wetlands, increased erosion, and intrusion of salt water into coastal freshwater resources. DIVA, a fully dynamic and interactive tool (product of the DINAS-COAST consortium), consists of a global coastal database, a model, a set of scenarios and a GUI that enables its users to simulate the effects of climate and socio-economic change and of adaptation on natural and human coastal systems at national, regional and global scales.

participants in the adaptation process. An effective participation mechanism for communities will be established. Such a mechanism will enable the combination of local knowledge and experience in coping with climate variability and extremes with the expertise of the scientific community. In the inception phase of the project, the adaptation team will select the best approach, or combination of approaches, for community engagement and capacity building.

Outcome 2: DMRD region's conservation and development programmes, plans and policies integrate climate change risks and take local pilot actions for coastal adaptation

(SPA Increment: $963,500: Of which GEF: $ 243,500; Cofinance: $720,000)

95. As described in the baseline section, there are several projects and programmes underway in the DMRD for promoting sustainable development of the region. None, however, take into account the impacts of current climate fluctuation and the expected changes, despite the noted vulnerability of this area and its importance in terms of the biodiversity it harbors. As identified under the FNC, the primary goal of adaptation in the biodiversity sector is to ensure that natural ecosystems are able to respond to expected climate change to the limits of their capabilities. An effective strategy for achieving this is to reduce or remove existing pressures by taking into account climate concerns into relevant developing plans and strategies. Without climate impacts being taken into account, baseline programmes, such as the WB IWEMP and EU ELPA, are unlikely to have the necessary scope and depth needed to minimize human-induced pressures, which in turn would allow the ecosystem to remain healthy and adapt to climate change.

96. The purpose of this outcome, therefore, is to open a dialogue with relevant national stakeholders and to determine how existing region-wide programmes can be modified by the integration of specific adaptation response measures. It is envisioned that dialogue will take place through a series of technical workshops followed by round tables and bilateral meetings at the policy level. The baseline cost of this has been estimated as the budgets of the preliminarily identified programmes/ projects in the baseline section on which an "adaptation overlay" is desired. The incremental cost is the additional policy dialogue underpinned by technical studies and assessments that will be needed to effect changes in development planning and implementation methods to accommodate climate change impacts and adaptation needs. This will require making data and information readily available and useable for informed decision-making regarding adaptation; costing of proposed adaptation measures, prioritizing measures that are most cost-effective, and implementing them. The idea is to see how existing programmes can be stretched, either in depth or scope, to minimize pressures on the DMRD ecosystem and ensure that it is able to adapt to climate change and variability to the best of its capabilities. As a result of the mainstreaming of adaptation measures, subsequent implementation of these "enhanced" plans, programmes, and/ or projects will ensure that the DMRD ecological system is better able to cope with expected climate impacts.

97. On the basis of focused assessments for each baseline plan, programme and/or project being targeted for mainstreaming, the adaptation project team will identify various adaptation response measures. The methodology for these assessments will be agreed among the project team during the initiation phase of the MSP and is likely to involve a stock-taking process of current programs/ plans/ projects. Priority measures will be identified on the basis of a multi-criteria analysis involving all stakeholders, including local communities. Key region-wide programmes to be targeted for mainstreaming include those that relate directly to biodiversity conservation within protected areas which will cover an area of 26,000 hectares by project end (Output 2.1) and those that relate to development activities in the wider landscape which cover approximately an additional 4,000 hectares (Output 2.2). These have been identified as important entry points because they will (a) define physical use and development of the project area including the level of protection provided to natural reserves designated in the area, and (b) target human impacts on the ecosystem either through harvest of natural resources or emission of wastes. By including climate threats, the scope and depth of these programmes can be modified to enhance the adaptive capacity of the ecosystem to climate change.

Output 2.1 A package of amendments to biodiversity conservation activities within protected areas of the DMRD aimed at integrating adaptation measures is prepared and implementation is initiated

98. Observation evidence from all continents and oceans show that many natural ecosystems are responding to regional climate changes, especially increase in temperature. This shows that species are already adapting autonomously to current climate change. It is also projected that the resilience of many ecosystems will be exceeded in the 21st century as a result of a combination of climate change, associated disturbances and other drivers of global change. This will require human planned adaptation to work alongside the autonomous adaptation. A number of planned adaptation options have been suggested for natural ecosystems and protected areas (Korn et al., 2003; Hulme, 2005; Pöyry and Toivonen, 2005; UNESCO-WHC, WWF, 2003; IUCN, 2004)[11].

99. The Directorate of Nature Protection Policy under the Ministry of Environment, Forest and Water Administration (MOEFWA) is considering establishing the entire region of Shengjin (from Kune-Vain to Tale to River Mati to Patok to Fushe Kuqe to River Ishmi), with a total surface of about 26,000 ha into a protected area with 2 distinct zones inside[12]. The first will be a Nature Management Reserve (IUCN category IV) encompassing the coastal wetlands of Kune-Vain to Tale to River Mati to Fushe Kuqe to River Ishmi, with a surface about 11,000 ha. The second zone, which surrounds the first zone, and comprises primarily agricultural land in the area of Shengjin with a surface of about 15,000 ha, will have the status of Protected Landscape (IUCN Category V). Currently, only the Kune-Vain (2,300 ha) and Patok-Fushe Kuqe (2,200 ha) lagoons are Category IV protected areas. This constitutes a major step by the MEFWA in terms of addressing human induced threats to biodiversity and increasing the inherent capacity of the ecosystem to adapt to climate change.

100. Under this output, GEF resources will provide catalytic support to build on the Directorate's plans to extend protected areas in the DMRD. The Directorate will provide cofinancing for undertaking studies and carrying out official procedures and consultations for expanding and establishing protected areas in the DMRD, as well as developing management plans. With the involvement of the local community, local authorities, NGOs, conservation groups, scientists and other stakeholders, the project will review and select adaptation options for the natural ecosystems of the DMRD, which can be integrated into protected area management plans for the DMRD. The aim is to ensure that climate related information is integrated into basic models and processes of conservation planning. Some on-the-ground adaptation actions to be considered include:

Habitat restoration:

- Habitat restoration activities will particularly focus on coastal dunes, especially those that provide habitat for birds and reptiles and are important for coastal protection from storms, flooding and erosion. The suite of measures under this component will be implemented with the direct engagement of local communities and local governments. Restoration activities will be planned and implemented under the scrutiny of detailed coastal risk mapping and by building upon Integrated Coastal Zone management activities noted above (baseline section). It will also be ensured that infrastructure development and settlement expansion takes place in a way that sedimentary flux and dune replenishment are not reduced by these anthropogenic pressures. Wetland restoration needs will be

[11] Adaptation Options on Natural Ecosystems: A Report to the UNFCCC Secretariat Financial and Technical Support Division; Pam Berry, Environmental Change Institute, University of Oxford, South Parks Road, Oxford, OX1 3QY, UK; June, 2007

[12] As per GEF guidance on cofinancing, inasmuch as this investment by the government is essential to achieving the project's objective of enhancing adaptive capacity of the DMRD ecosystem, this is being considered as government cofinancing for the project.

further explored during the inception phase of the project and in close consultation and coordination with the WB project.

Modification of DMRD protected area network planning and coverage:

- Revise DMRD protected area network and help the planned expansion of territorial coverage under the protection in a way that it increases the habitat heterogeneity within reserves e.g. by including gradients of latitude, altitude and soil moisture and by including different successional states as to increase resilience of the natural systems. This approach will help maintain ecosystem structure and function as a means to ensure healthy and genetically diverse populations able to adapt to climate change. Under this component the project will also help increase landscape connectivity through use of corridors/ stepping stones to link areas of habitat or reserves to "climate proof" the network of ecological reserves in the DMRD. The project will consider both direct impacts (increase in temperature, changes in precipitation and sea level rise) and indirect impacts (changing intensity and frequency of floods and droughts) on species (distribution), ecosystem composition and function. This will be done by bringing in climate change data and scenarios into the protected area network expansion and management planning. The measures will be designed and implemented with close collaboration with the WB/GEF and EU projects currently underway with the strong emphasis on ecosystem adaptation.

Output 2.2 A package of amendments to sustainable development activities in the wider landscape surrounding protected areas in the DMRD aimed at integrating adaptation measures is prepared and implementation is initiated

101. In supporting autonomous adaptation of ecosystems, human planned adaptation must encompass activities in the wider landscape surrounding protected areas in the DMRD. Therefore, this output will focus on reducing and managing stresses from other sources and activities that constitute the sustainable development baseline for the project. However, without due account of climate change, these efforts may turn into maladaptive practices exerting additional pressures and increasing vulnerability of bio-physical systems of the target coastal area in the medium to long term. Key activities that provide opportunities for mainstreaming adaptation measures include:

- Implementation of the Strategic Environmental Zoning plan (and associated Local Environmental Action Plans or LEAPs) for the DMRD developed under the EU funded ELPA project (cofinancing to be provided by the EU)
- Follow-on investments by the EU as part of the implementation of the ELPA project such as grants for community development projects (e.g., tourism activities). The objective here is to ensure that community level activities, especially among those communes that rely on the natural resource base of the DMRD, also mainstream adaptation.
- Sewage and waste water treatment plans for the DMRD
- Agriculture sector development plans (including fisheries)
- Sustainable livelihoods of communities surrounding Kune-Vaine and Patok: The objective is to ensure that community level activities, especially among those communes that rely on the natural resource base of the DMRD, mainstream adaptation. REC will cofinance this by ensuring that priority is given to implementation of community level adaptation response measures under REC's Grant Mechanism for NGOs, thus enhancing opportunities for community level adaptation activities.

102. The project will work very closely with all relevant stakeholders of the above activities and in particular, the regional government in order to undertake robust assessments of climate change impacts and

risks to these sustainable development efforts that constitute the project baseline. In doing so the project will follow the methodology the basic elements of which are listed below[13]:

- Identifying and quantifying climate impacts on physical units;
- Converting these physical impacts into monetary values;
- Calculating the resource cost of adaptation options; and
- Weighing up costs and benefits of adaptation options, and choosing the preferred options, taking account of risks and uncertainties.

103. By applying valuation methods the project will guide the above programmes towards adaptation that will contribute to sustainable management of the DMRD in support of the valuable ecosystems it harbours.

Outcome 3: Capacity for adaptive management, monitoring and evaluation, learning, and replication of project lessons developed

(SPA Increment: $336,800: Of which GEF: $ 306,800; Cofinance: $30,000)

104. This is the first time that Albania will be attempting to include climate impacts as an integral part of its sustainable development programming in a vulnerable area. This outcome will, therefore, focus on enabling adaptive management and learning.

Output 3.1: System for monitoring and evaluation of project impacts established

105. This will involve establishing the project management team which will coordinate the work of the inter-disciplinary adaptation team. Regular monitoring and reporting of impact indicators specified in the logframe will be undertaken. This will include any additional physical, hydrometeorological, and biological monitoring, over and above what is currently being undertaken by the Regional Environmental Council in Lezha, which is warranted to assess project impacts. A determination of additional monitoring needs will be made by the project team in consultation with national and international experts in the inception phase of the project.

Output 3.2: Communication strategy and knowledge products developed

106. This will be the first project in Albania specifically focusing on integrating climate change concerns. In order to maximize the project's catalytic role, an effective communication strategy will be essential. Therefore, a communication strategy will be developed and implemented, including the hosting of seminars and exchange-visits to share findings with key "change agents" that can push the frontier in terms of integrating climate impacts into policy, programme and project development and implementation in other sectors and areas of Albania. This could also include sharing of experience with other countries in Europe.

107. In addition, lessons learned will be documented to expand the knowledge base in terms of adaptation in the country. The experience will also be beneficial to other countries in the region and beyond, through UNDP/ GEF's Adaptation Learning Mechanism.

Global environmental benefits of project

108. The project will develop adaptive capacities in the DMRD in line with UNFCCC objectives of promoting adaptation to climate change. Inasmuch as the project focuses on an area that harbors globally significant biodiversity (as outlined in Annex 2), the project will generate benefits in the biodiversity focal area by reducing the vulnerability of this wetland ecosystem that harbors endangered and vulnerable flora and

[13] Metroeconomica, 2004: Costing the Impacts of Climate Change in the UK. UKCIP Technical Report, United Kingdom Climate Impacts Programme Oxford, 90 pp. http://www.ukcip.org.uk/resources/publications/pub_dets.asp?ID=54

fauna to expected climate change and thus reducing the risks of global biodiversity loss. By developing adaptive capacities of local communities, local governments, conservation managers and developers of the target coastal region, the global environmental benefits being delivered by multiple efforts described above will be made resilient to climate change.

109. National benefits will also be realized because Albanian institutions and nationals will acquire the skills to address adaptation which can be applied in other parts of the country and beyond. To the extent that the project will develop critical capacities to begin a longer-term process of integrating climate concerns into the implementation of development programmes which in turn enhance ecosystem integrity and resilience to climate change this will benefit locals that rely on the natural resources base as a source of livelihood.

110. To summarize, the main adaptation benefits of the project are that it will be able to provide concrete inputs into conservation and development planning in the DMRD to ensure that climate change concerns are taken into account. Given that the DMRD is rich in biodiversity that is considered by national experts to be under threat from climate variability and expected climate change (along with other anthropogenic factors), the project will be able to build and enhance the inherent adaptive capacity of the ecological system to climate change, once the proposed measures are adopted and implemented. This is expected to be the first show case in the country where climate concerns are taken into account and lessons learnt will be replicated to other regions of the country that share similarity to the selected system.

Incremental Costs

111. The underlying incremental cost rationale for this project is that under a business-as-usual scenario adaptation to climate change will not be taken into account into policies, programmes and activities that aim to promote sustainable development of the DMRD. This is principally due to the fact that national capacity to understand and predict the impacts of climate change on the globally significant biodiversity of the DMRD, and to identify and implement appropriate adaptation response measures is weak. To date, none of the government and donor-funded activities in the area takes explicit account of adaptation to climate change. However, the baseline does offer several opportunities to integrate adaptation, as the region has recently embarked on several planning and programming exercises aimed at strengthening environmental sustainability (described in the Baseline section), coupled with a move to further decentralize these responsibilities to the Regional Administration. The baseline is estimated at approximately US$ 15.4 million and the GEF Alternative at US$ 17.2 million (see IC matrix in Annex 8). The incremental cost is therefore US$ 1,775,000 (including project management). Of this amount, US$ 900,000 is being mobilized from UNDP, government and other donors as elaborated in the financial section. The GEF is being requested to contribute US$ 975,000. By covering these incremental costs of removing barriers to adaptation, the GEF would play a catalytic role in advancing adaptation to climate change not only in Albania, but potentially also in other countries of south eastern Europe through the lessons and experience of this project.

Sustainability (including financial sustainability)

112. The continuation of the adaptation strategy developed by the project, upon project completion, depends on the extent and depth of stakeholder engagement in the project, the capacities that are developed, and the mainstreaming of adaptation in relevant policy-making processes. The project will therefore emphasize active engagement and capacity building among a wide range of stakeholders from the national to local level (as identified in the stakeholder analysis section). The emphasis will be on engendering institutional capacity for adaptation, awareness raising, and providing opportunity for participation. By integrating adaptation into existing regional plans, policies and programmes with high relevance to DMRD ecosystem stability, the financial cost of implementing measures will also be mainstreamed in the long-term.

Replicability

113. The geographical focus of the project is on the DMRD, which has been prioritized out of a list of 3 vulnerable regions within Albania. The other 2 regions are the Shkumbini River Basin (8th corridor) and the Durres-Kukes Highway. The experience of mainstreaming adaptation into the sustainable regional development of the DMRD will necessarily generate useful lessons for these other 2 vulnerable regions. Under Outcome 3 resources will be specifically set-aside for sharing experience with key stakeholders in the other regions to lay the foundation for replication of the project's experience.

Cost Effectiveness

114. In line with the GEF Council's guidance on assessing cost-effectiveness of projects (Cost Effectiveness Analysis in GEF Projects, GEF/C.25/11, April 29, 2005), the project development team has taken a qualitative approach to identifying the cheapest way, among competing alternatives, of achieving the project objective. A rigorous and quantitative application of cost-effectiveness analysis (where an indicator that best describes the outcome of the intended activities is identified, and the cost of achieving a unit of that indicator for the different competing alternatives is computed) was not feasible. However, by investing less than $1million the GEF will be able to influence at least $10 million of baseline programs in ecosystem management (mainly through protected area management budgets) and local development funding (including coastal protection other development programmes) into taking account of adaptation to climate change in the four year timeframe. The landscape wide, on-the ground measures will also be scrutinized with cost-benefit analysis for identifying low regret and no regret adaptation actions.

115. To realize the overall objective of developing Albania's capacity to deal with adaptation to climate change, including variability, the project has chosen to focus its attention in an area that has been prioritized as vulnerable to climate change and where the potential ecological losses could be significant. By investing project resources in enhancing adaptive capacity of this area, the potential pay-off in terms of ecological benefits is higher than it would have been in another region. By fully mainstreaming climate change considerations into the management of the Lezha region coastal zone, including the DMRD, the project will ensure that investments in protected area management in the region are not undone by climate change and variability. In addition, in line with the precautionary principle, by integrating adaptation response measures at this early stage, the project is expected to minimize degradation of ecosystem values and services, which once lost could be prohibitively costly to restore.

116. Furthermore, this region is socio-economically worse-off than others and is a priority for the government in terms of promoting sustainable development. There is therefore a significant amount of attention and resources, of government and donors, in this area, which provides a good baseline on which to build adaptation response measures. The project will therefore not be working in a vacuum and will be able to leverage existing investments to achieve the goal of enhanced adaptive capacity. As noted above, the target coastal ecosystem falls under the national priority for conservation and expansion of protected area system. Therefore, building on the current efforts described above makes the project most cost-effective as opposed to targeting an area where the established system may prove to be more rigid to accommodate additional changes and modifications in response to current and anticipated impacts of climate change. Thus, the chosen project strategy of focusing on the DMRD and building on on-going baseline programs that offer the best opportunities to mainstream adaptation and where the interest to mainstream adaptation has been indicated through PDF consultations is believed to be more cost-effective than either working on an initiative that encompasses the whole country or focuses on another region.

Stakeholder Analysis and Involvement Plan

117. The table below lists all main stakeholders of the adaptation process in the DMRD. During project development, stakeholders have been involved in discussing the project idea and providing background information. During project implementation, APF guidance especially that provided in Technical Paper 2 will be relied on to ensure effective stakeholder engagement.

Table 1: National level stakeholders

Institution	Department	Responsibility/ Field of Activities	Relevance to Biodiversity/ reasons for inclusion
MINISTRY OF ENVIRONMENT, FORESTRY AND WATER ADMINISTRATION (MoEFWA)	**Ministry in general**	*MoEFWA is the main specialized governmental body responsible for environmental protection in the Republic of Albania. Responsibilities of MoEFWA and its directorates and institutions relevant to biodiversity and climate change are as follows:* • Drafts and implements governmental policies, strategies and action plans for environmental protection • Drafts laws, by-laws and decisions for the protection of the environment • Follows-up on the implementation of laws, by-laws and decisions of the Council of Ministers for Environmental Protection • Coordinates the cooperation between relevant Ministries, local government, research institutions, and NGOs • Supervises the monitoring of the state of environment in collaboration with relevant Ministries, local government, research institutions, and NGOs • Proposes measures, activities and standards to protect water, soil, air and biological diversity • Designs and endorses projects for the protection and remediation of environment • Manages environmental funds provided by the Government of Albania • Raises awareness on environmental protection and related issues • Issues environmental permission/ license for all activities that have an impact on environment • Prepares agreements and MoUs, in the framework of bilateral and multilateral co-operation and attends to their implementation after their adoption • Oversees the implementation process of all environmental conventions to which Albania is a Party	• MoEFWA **leads** the Project Steering Committee • The responsibly of the **GEF Focal Point** (Operational/Political) stands under MoEFWA • The responsibility of **UNEP** and other **UN Conventions** stands under MoEFWA • MoEFWA is the **Executing Agency** for UNDP-GEF portfolio for all GEF projects Albania
	Directorate of Policies for Forests and Pastures	• Responsible for development and implementation of policies in forestry and pasture sectors • Participate and develop programs for development in the forestry and pastures sectors, according to legal framework and sustainable management of forests and pastures • Plan and supervise periodical development of the management and inventories of forests, pastures , of flora, fauna and prevention and measures for protections • Takes care of implementation of strategies and legislation for forests and pasture management • Ensures a rational use of pastures, fauna and their by-products	• Provides **policy advise** regarding the flora and fauna , related to forests and pastures • Potential **data provider** for biodiversity in forests and pastures • Potential **provider of technical expertise** in related issues • Provides **policy advice** on development of strategies plans and management plans for forests and pastures
	Directorate of Policies for Nature Protection	• Responsible for developing strategic documents (strategy, national plans and programs) for protection of biodiversity and nature protection • Supervise the implementation of the legal framework related to protection and management of nature and biodiversity • Leads and organizes activities in Protected Areas and six river basins	• Potential provider of **technical expertise** related to biodiversity; • Potential provider of technical expertise related to vulnerability assessment of forests, biodiversity, agriculture, land and

Institution	Department	Responsibility/ Field of Activities	Relevance to Biodiversity/ reasons for inclusion
		• Supervises and manages issues related to biodiversity (Flora, fauna, land and other natural resources) • Supervises and coordinates issues related to Protected Areas, their administration, protection, and provision of protection status to new ones • Supervises the administration of natural resources (forests, land, rivers, lakes etc) and their sustainable use • Proposes rules and standards for land administration and management and its protection from erosion and chemicals and also designs national programs and undertakes activities for food security. • Proposes and drafts laws for protection of biodiversity and Protected Areas, water administration • Supervises and coordinates the monitoring process of biodiversity indicators • Participates and provides advice and technical expertise to the process of environmental impact assessment/ environmental licensing for those activities that have impact on biodiversity • Provides technical support to the implementation of many treaties related to the protection of biodiversity, nature and land	coastal zone • Potential provider of **data** on status of species • Potential **policy advice** provider related to development of forestry sector, land use and coastal zone management; • Potential to recommend **synergies** with International documents (conventions, etc.) related to Biodiversity, Protected Areas, Water administration, etc)
	Directorate of Fisheries Policies	• Creates, improves, follows and implements fishery and aquaculture laws • Creates short, medium and long term programs in order to develop the fishery sector and to continually improve it, according to new scientific achievements and economic developments • Proposes, improves and completes the legislation concerning fishing criteria, taxation conditions, license renewals, application of industrial, artisanal, scientific and sport fishing • Determines periods of the biological cessation, to determine forbidden fishing zones, technical restrictions for ships and fishing tools in order to establish legal fishing and to protect the environment • Maintains relations with international organizations that aim the creation of common policies in order to exploit fishery resources • Develops aquaculture sector and other new activities such as: fish, mollusk and crustacean, cultivation in marine brackish and fresh water	• Provides **policy advice** regarding the development of fishery sector • Provides **technical expertise** related to fishery sector • Potential **data provider** on the status of fisheries in Albania
	Directorate of Integration Policies	• Organizes, co-ordinates and supervises the drafting of environmental policy and their integration into strategies and action plans for environmental protection • Supervises the issues and related tasks regarding Stabilization Association Agreement (SSA) and prepares periodic progress reports in that regard • Supervises the issues and related tasks regarding the NSSED and prepares periodic progress reports on that regard. • Drafts laws and by laws related to environmental protection in cooperation with other technical directorates of the MoEFWA and other relevant ministries and research institutions.	• Facilitates **mainstreaming of biodiversity** issues into national planning and policies; • Provides assistance and advice regarding **legal issues** related to the protection of environment, especially biodiversity • Provides **policy advice** on the biodiversity conservation policy
	Directorate of Supporting Services – Communication Sector	• Supervises and coordinates communication with public and civil society regarding environmental protection issues • Collaborates with other technical directorates and Regional Environmental Agencies (REA)s for collection and processing information, creation of a database and take measures for preparing and publishing periodic reports on the state of environment • Facilitates and coordinates the information issues with and among REAs	• Potential **activity data** provider specially for biodiversity and other related data • Potential to recommend **synergies** with International documents (conventions) related to the Biodiversity, Protected Areas, Water administration, etc

Institution	Department	Responsibility/ Field of Activities	Relevance to Biodiversity/ reasons for inclusion
		• Collects and synthesizes the information provided from REAs on a monthly basis • Coordinates and facilitates the procedures for the membership of Albania to the international conventions, protocols and MoUs related to the environmental protection • Coordinates and supervises the process of meeting the commitments under the International Conventions, protocols and MoUs that Albania is a Party to related to environmental protection	
	Environmental Inspectorate	• Coordinates the control of environmental pollution through the REAs and inspectors of environment • Supervises the accomplishments and functioning of REAs • Monitors the impact of activities carried out from different parties into environment and check whether they are in line with standards and rules set under the environmental permissions issued • Coordinates national activities with regional and international homologue offices • Cooperates with other directorates for drafting of environmental laws and by-laws	• Potential **coordinator for data provision** from REAs for biodiversity issues
	Institute of Environment	The Institute's responsibility is the monitoring of the status of environment. There are some projects funded by international donors and state budget that are aiming at re-profiling, building institutional and technical capacities in order to provide to this Institute the status of an accredited institution for monitoring of environment.	• Provides **technical expertise** in monitoring environmental issues • Potential **data** provider for biodiversity category
MINISTRY OF AGRICULTURE, FOOD AND CONSUMER PROTECTION (MOAFCP)	**Ministry in general**	MoAFCP is the main specialized governmental body responsible for agriculture and food policy in the Republic of Albania. Responsibilities of MoAFCP and its directorates and institutions that are relevant to biodiversity are as follows: • Drafts and implements governmental policies, strategies and action plans for development of agriculture and food sector by aiming at: 1. increasing agricultural, livestock, agro-industrial, fishery production; 2. improvement of market infrastructure; 3. sustainable management of natural resources; • Set standards and propose policies and measures to ensure the improvement of food safety, and protect consumers • Design agro-food policies that will be oriented towards the coordination of agriculture sector development with the regional one, by highlighting integrated rural development • Design national policies for irrigation and drainage • Drafts laws, by-laws and decisions for development of agriculture and food sector and achievement of the above aims • Follows-up the implementation of laws, by-laws and decisions of the Council of Ministers for development of agriculture and food sector • Develop institutional capacities, capable to design and implement agricultural policies oriented towards the regional and European integration of Albania's agriculture and food sector • Coordinates the cooperation between relevant Ministries, local government, research institutions, and NGOs regarding the development of Agriculture and Food	• Provides **policy advice** regarding the development of the livestock sector and agriculture; • Potential **data** provider for livestock category;
	Research Institute of Forestry and Pastures (RIFP)	*The RIFP is an Institute that works under the responsibility of the Ministry of MoAF. Its main duties are as following:* Monitors the situation on forests and pastures; Monitors health forests against fires, illegal cuttings, climate conditions and different other hazards;	• Provide data and Information about status of Forestry in the project areas • Support on adaptation measures related to reforestation and anti erosion measures.

Institution	Department	Responsibility/ Field of Activities	Relevance to Biodiversity/ reasons for inclusion
		Develop research studies related to forest and pastures related indicators Develop and implement different projects related to forests and pastures Develop database on the above indicators and provide them to national and private institutions	
MINISTRY OF TOURISM, CULTURE, YOUTH AND SPORTS	**Ministry in general**	• Designs national policies and legal framework for sustainable development of tourism sector in Albania supervises the their implementation process; • Designs the policy and legal framework for management of the irrigation and sanitation network;	• Provides **policy advice** for the development of tourism sector and settlements and for integrated assessment of impact on biodiversity;
Institute of Statistics (INSTAT)	**Public Institution**	*The INSTAT is the main official data provider in the Republic of Albania that works under the direct responsibility of Council of Ministers.* • Collects, process, analyses and disseminates statistical data related to the economy, demography and social life • Provides accurate statistical information, data and analysis to the users – the Governmental institutions, private and academic sector, individuals in order to improve the process of business decision-making, democratization of the society and scientific research • Establishes and manages the databases and statistical registries on national level, setting down statistical methodologies, maintenance collaboration in the domain of the statistics, communication with the beneficiaries, etc.	• Major **data** provider for all sectors relevant to all thematic areas
Institute of Hydro- Meteorology (IHM)	**Public Institution**	*The IHM is a public research institute that works under the responsibility of the Academy of Science of Republic of Albania. Its duties and responsibilities are as following:* • Systematically observes and monitors meteorological parameters from all national stations • Monitors the hydrological parameters of the country such as surface and ground water parameters; monitoring of sediment in rivers and lakes • Process the data and information received from the observations • Develop data base and information system on the hydro and metrological indicators of the country • Develops weather forecast and provide it to the interested parties • Report data to the World Metrological Organization and to other regional / sub-regional networks established	• The **Team Leader** role of V&A and significant **technical expertise** on V&A are provided by the IHM • The IHM is the main hydro- metrological **data** provider;
Center of Hydraulic Research under the Academy of Sciences	**Public Institution**	Responsible for research related to the operation of pumping stations, river diversion schemes, and controlling the water flow and sediment in rivers, under the rubric of their Department of Surface Water.	• Data on hydrology of area
University of Tirana	**Faculty of Natural Sciences (FoNS)**	• Provides education at all levels on Biology, Physics, Chemistry, Computing Science and Mathematics. • Conducts scientific research and implements projects on Biodiversity and Status of Environment.	• FoNS is a potential provider of the **technical expertise** on ecology, beech forests, wetland management, chemical analyses and pollution effects, etc.

Table 2: Regional level stakeholders (Lezha Region)

Institution	Department	Responsibility / Field of Activities	Relevance to Biodiversity/ reasons for inclusion
Lezha Region (Qarku)	Department of Program and Development	Establishes and implements the regional politics and the harmonization of them with government policies on regional level areas. Develops the development strategy for regional social economic development, collects and process the necessary data's with statistic indicators, cooperates with all local actors and with other institutions, foreign donors for implementation of projects	Main responsible regional institution for the development and coordination of the investments, wellbeing of the inhabitants, protection of the land, biodiversity, agriculture, education, health,

	Department of Urban Planning	Approves urban studies for partial or regional areas, issue construction permits for private and state subjects within the yellow line of the cities or communes of Lezha region.	etc. Main coordination institution for regional scale development and projects. It is the direct collaborator in the project.
	Department of Legal and Foreign Affairs	Helps the process of decision making and coordinate the work with other projects that operate in the region, helps on establishment of cooperation's agreement between different actors.	
	Section of land administration and protection	Develops projects in cooperation with communes about protection from erosion, identifies all constructions made with/without permission on arable land, reflexes all changes to land's fund every 6 months related to decision maker subjects, land protection from natural or human factors.	
Communes in the region	Office of Service and Investment	Develops the map of needs for all service like (infrastructure, education, culture, and health environment) etc. makes plans of investment according the priorities, water supply and sometimes even manages these kinds of projects.	Direct responsible for the development of the area in their administration. Responsible for the implementation of projects. They are the main collaborators in the project
Regional Environmental Agency (Lezha)	Environmental Agency	Ensure the legal implementation for environmental protection on local level, helps local government actors for administration and protection of environment under their jurisdiction, cooperates with different actors on development and implementation of local environmental action plans, encourages the use of clean technology and implementation of environmental managerial administration systems, takes part on approval process for permissions and environmental impact assessment evaluation, fulfills the duties related to Ministry of Environment, Forestry and Water Administration with special instructions. Every two years REA prepares the report on the State of environment for region. After the approval of the report form Qark, the public should be informed through mass media The duties, rights and authority of the REA are be defined by the Council of Ministers, proposed by the MoEFWAFWA. The Inspectorate of Environmental Protection is organized and reports to the Ministry of Environment. It consists of the chief inspector and other inspectors in its regional branches in each district. The duties, rights and authority of the Inspectorate of Environmental are defined by the Minister of Environment. The Inspectorate of Environment, shall coordinate its work with other inspectorates and law enforcement organs The inspectors of the inspectorate of environment have the authority to impose a fine about administrative violation	Main responsible institutions for the control and protection of the protected areas, wild life, environmental investments and nature protection. It is one of the main collaborators in the project.
Water Basin Committee	Agency of Water Basin of Mati , Drini River	This Institution has all the formal documents for water resource uses, permissions and administrates the tariffs on the issued permissions.	Responsible for the protection of waters and wild life in waters. Main collaborators for the water management, rives erosion, gravels and fishing.
	Council of Water Basin for Mati, Drini Rivers	Council of Water Basin is the regional authority responsible for water resource administration of corresponding river basins. This council gives the permission for use of inert materials from river beds.	

Table 3: Local level stakeholders (Lezha Region)

Institution	Department	Responsibility / Field of Activities	Relevance to Biodiversity/ reasons for inclusion

Institution	Department	Responsibility / Field of Activities	Relevance to Biodiversity/ reasons for inclusion
Lezha Municipality	Department of Service	Department of social, cultural and sportive services. Protection and development of cultural historical value, organization of social – culture activities and the administration of relevant institutions, organization of sports – diverting activities and the administration of relevant institutions, social services and the administration of institution like day care center for children, asylum, orphan houses etc.	Main local authority in the Lezha area, with responsibilities on green areas, waste and waste water pollution. Main collaborator for the protection of the wild life, especially fish population in the Lezha Drini river.
	Department of Urban Planning	Develops urban plans; approves constructions permits according the pre-planed and feasibility studies approved by Council on Territory Planning of Albania.	
	Department of Programme and Development.	Develops programs for economic development, establishment of public markets and trade network, small business development, organization of fairs, publicity campaign, supports on information distribution, and supports in establishment of necessary infrastructure, protection of foresters, pastures and natural recourses on local level.	
Agriculture Directorate	Sector of Plant's Protection	Controls on regional level the law enforcement, gives phytosanitary certificate to specific plants and agriculture products. The specialists of plant protection make analyses on the laboratory related to plant infections or plant parasites and give advice for the necessary measurements.	Main protector of the arable land, in land biodiversity, protection of plants and enrichment and protection of land by pesticides.
Forestry Directorate	Forestry Policy	Controls on regional level the law enforcement related to forestry, pastures, protected areas, wild flora and fauna, hunting activities and other activities in the forests by private or public subjects. Forestry police works on fire prevention on forest and they take measures against any damage of environment, cutting trees without permission, illegal use of pastures, damages of protected areas and every activity with negative impacts to forestry, pastures and environment.	It is main administrative institution related to forests and pastures in the area. Main collaborator for the investments in forests belts.
	Management structure of Forestry Service	Controls the activities that process the timber by businesses in the forest products and trade products like (timber, lumber, fire wood etc) It is responsible on forestry works such as thinning, maintenance, etc	
	Sector of Protected areas	It has the supervisor role related to formal documentation by private or public subjects that pursue their activity on forest fund within protected area, controls law enforcement and the implementation of regulatory framework. It is responsible for maintenance work and surveillance within the protected area. Public information is part of the listed tasks for this unit.	
Education directorate		Helps municipalities and communes insuring necessary conditions for a normal function of local educational institutions, evaluates and helps in predicting their economical and financial requests. In collaboration with educational institutions, municipalities and communes' councils, it studies, predicts and attends implementation of investments, reconstructions, constructions, and facilities etc, approved by Ministry of Education. The Educational Directory cooperates with other educational institutions identifying all their needs and necessary materials for their work. It collaborates also, with municipalities and communes in opening or closing high schools of different profiles, in resolving problems related on approving students' scholarships, in accordance with legal acts with Council of Minister, Ministry of Finance and Ministry of Education.	Responsible for the education of children's, about the environmental and nature protection. Important to be involved as part education and awareness raising
Water supply and waste water treatment company of Lezha		The duties of this body are related to water management, water supply and sewerage/waste water collection for Lezha City, Shengjin, "Ishull Shengjin" and "Ishull Lezhe".	

Institution	Department	Responsibility / Field of Activities	Relevance to Biodiversity/ reasons for inclusion
Harbor of Shengjini		Harbor services , protection of marine environment of Shengjini Port (realize the cleaning of sea's water surface and the floor of sea too), was the supervision body for all navigation craft ships and their load etc.	Cooperation on pollution prevention measures for Shengjini bay.
Ecological Club Association (NGO)	Lezha	Awareness activities related to environmental protection, promotion of ecoturistic activities in Lezha region including Shengjini and Velipoje. Reforestation activities on preventing erosion and top soil loss. Publication of "Kurora e Gjelbert" newsletter	Biodiversity and climate change awareness activities in Lezha region

Table 4: Donor agencies active in Lezha Region

Institution	Responsibility / Field of Activities	Relevance to Biodiversity/ reasons for inclusion
European Commission	Working with MEFWA to strengthen environmental legislation and planning in Albania at the national level and at the regional level – Lezha and Shkodra.	• Key partner for mainstreaming adaptation to climate change in sustainable development planning and programming in DMRD and for replication in other areas
World Bank	Working with MEFWA on several projects aimed at sustainable development in Albania	• Key partner for mainstreaming adaptation to climate change in sustainable development planning and programming in DMRD and for replication in other areas
REC	The Regional Environmental Center for Central and Eastern Europe (REC) is a non-partisan, non-advocacy, not-for-profit international organization with a mission to assist in solving environmental problems in Central and Eastern Europe (CEE). The center fulfils this mission by promoting cooperation among non-governmental organizations, governments, businesses and other environmental stakeholders, and by supporting the free exchange of information and public participation in environmental decision-making. • Capacity Building program for central and Local authorities, NGOs, etc • Environmental Information Programme with daily information packages • Environmental Strategic planning in national, regional and local level • Environmental legislation and support of the implementation of MEAs	• Data on civil society organizations in the project area • Environmental education modules for different target group • Granting mechanism for local authorities • Data on environmental assessment
GEF/SGP	GEF/SGP supports activities of non-governmental and community-based organizations in developing countries towards climate change abatement, conservation of biodiversity, protection of international waters, reduction of the impact of persistent organic pollutants and prevention of land degradation while generating sustainable livelihoods. The long-term goal of the GEF/SGP programme in Albania is to contribute to achieving global environmental benefits through community-level action to conserve biodiversity, protect international waters and reduce the likelihood of adverse climate change.	• Projects support or promote conservation and sustainable use and management of biodiversity in ecosystems (including agro biodiversity and agro ecological systems). • Operational programs are restricted to in situ conservation activities and conservation of genetic variability of wild relatives of domesticated species • Projects are located in areas that contain globally significant biodiversity.

PART III : MANAGEMENT ARRANGEMENTS

PROJECT IMPLEMENTATION/ EXECUTION ARRANGEMENTS

118. MOEFWA will execute the Project under the UNDP National Execution modality. A National Project Director (NPD) shall be delegated by the Executing Agency. The NPD bears the overall responsibility of the implementation of the project.

119. The day-to-day implementation of the project will be carried out through the well-established UNDP Climate Change Program Unit under MOEFWA. A full time technical expert (National Project Coordinator – NPC) will be brought in under the project to provide necessary technical backstopping to the Climate Change Program Manager. The services of an international consultant will be engaged during the project inception phase. Additional short-term national and international experts will be brought in for different technical aspects as needed. The Project Management Unit will be responsible inter alia for:

- Recruitment of International and National Consultants, including candidate search/selection, preparation of TORs, supervision;
- Project coordination, including organization of regular meetings with project implementing agency, financial management and accountability, issuance of payments, training staff on financial disbursements and reporting, ensuring completeness and timeliness of financial reporting;
- Technical reporting including preparation of progress reports;
- Monitoring and evaluation; organization of training/workshop activities.

120. At the national level, the project's main implementing counterparts will be the Directorate of Nature Protection Policy and the Hydro-meteorological institute under the Ministry of Environment, Forest and Water Administration (MOEFWA). At the local level, main counterparts will be the Regional Council of Lezha and the Regional Environmental Agency. (The full list of stakeholders and their roles and responsibilities is provided in the stakeholder section above.)

121. A Project Steering Committee consisted of representatives from the different Ministries, regional Government, key donors, and CSO will be set up to provide overall guidance to the project and ensure inter-ministerial coordination and active involvement in the project. From the point of project supervision and management the PSC will be responsible for:

- Commenting on project work plans and progress reports;
- Mobilizing co-financing;
- Approving major project outputs;
- Assuring coordination between this project and other ongoing activities and programmes;
- Assuring all stakeholders are appropriately involved in the project planning and management;
- Facilitating linkages with high-level decision-making.

122. The United Nations Development Program will be the GEF Implementing Agency and its Country Office will provide project support. UNDP Albania will monitor progress towards intended results the through regular contacts with the Project Implementation Unit and monitoring visits, on implementation matters and problem solving. UNDP will also provide administrative support upon request and ensure financial oversight. The project will be implemented following the standard UNDP National Execution Guidelines.

123. In order to accord proper acknowledgement to GEF for providing funding, a GEF logo will appear on all relevant GEF project publications, including among others, project hardware and vehicles purchased with GEF funds. Any citation on publications regarding projects funded by GEF will also accord proper acknowledgment to GEF. The UNDP logo should be more prominent -- and separated from the GEF logo if possible, as UN visibility is important for security purposes.

GEF Agency Core Commitments and Linkages

124. The recent UN Common Country Assessment (2004) highlighted that the main immediate causes of environmental degradation in Albania have been a combination of accelerated economic activities that have not taken into consideration the environmental impacts along with the inherited and cumulative effects caused by the lack of integrated planning in environmental management. It also pointed out that the loss of biodiversity, mismanagement of natural resources, particularly deforestation and land erosion has adversely affected the natural resources base which is the main source of income for rural populations and marginalized groups such as women, elderly and ethnic minorities.

125. The proposed UNDP Albania Country Programme document (2006-2009) that is being formulated in parallel to UNDAF foresees that UNDP will support the national government in implementation of main conventions (CBD, UNCCD, and UNFCCC) to ensure environmental sustainability. The project will therefore be in line with the new CPD inasmuch as it focuses on the implementation of measures that promote adaptation to climate change under the UNFCCC. While the UNDP-GEF portfolio in the country consists of a number of projects in the GEF's focal areas, this will be the first project related to adaptation to climate change.

Consultation, Coordination and Collaboration between and among Implementing Agencies, Executing Agencies, and the GEF Secretariat

126. During the PDF-A several consultations have been held with the World Bank regarding this project. World Bank activities in Albania are primarily focused on the southern coast and in inland areas. As articulated in the Baseline section of this proposal, there are some Bank initiatives taking place within the DMRD, mainly the IWEMP and the rehabilitation of agriculture systems in Lezha region. The IWEMP is particularly relevant inasmuch as one of its components is strengthening the conservation regime in the Kune-Vaine area, and by so doing it will be mitigating threats to biodiversity from the surrounding areas. Meetings have been held with Bank staff in Tirana as well as with project implementation units, and this communication and dialogue will be maintained during project implementation to ensure that adaptation response measures can be mainstreamed. Other Bank activities such as the NRDP focuses on upland areas of the Drini watershed, and a cross-border integrated ecosystem management project currently under development will be focusing on the entire Drini watershed also encompassing neighboring territories.

PART IV: MONITORING AND EVALUATION PLAN

127. Project monitoring and evaluation will be conducted in accordance with established UNDP and GEF procedures by the project team and the UNDP Country Office (UNDP-CO), with support from the UNDP/GEF Regional Coordination Unit in Bratislava. The Logical Framework Matrix provides performance and impact indicators for project implementation along with their corresponding means of verification. The logframe is developed based on UNDP/GEF impact monitoring framework at adaptation project level, specifically, for detecting the enhanced resilience of coastal geomorphological and ecological systems. Additionally, given that the target of adaptation measures is globally significant ecosystems, the project team has been guided by the GEF's METT in identifying indicators for measuring the biodiversity benefit of additional adaptation measures. Based on a review of the METT proxy indicators, two indicators (one relating

to territorial coverage and the other to integration of adaptation measures in the conservation management plan) have been selected. Logframe indicators will form the basis on which the project's Monitoring and Evaluation system will be built. In addition, Output 3.1 of the project relates specifically to monitoring, evaluation and adaptive management capacities over the long term through the establishment of a long term monitoring programme. The M&E plan includes: inception report, annual project implementation reviews, quarterly operational reports, and independent mid-term and final evaluations. GOU will also provide the Resident Representative of UNDP Albania with certified periodic financial statements, and with an annual audit of the financial statements relating to the status of UNDP (including GEF) funds according to the established procedures set out in the UNDP Programming and Finance manuals. The Audit will be conducted by the legally recognized auditor of the Government, or by a commercial auditor engaged by the Government. The project's Monitoring and Evaluation Plan will be presented and finalized at the Project's Inception Meeting following a collective fine-tuning of indicators, means of verification, and the full definition of project staff M&E responsibilities.

PART V: LEGAL CONTEXT

128. This Project Document shall be the instrument referred to as such in Article I of the Standard Basic Assistance Agreement between the Government of Albania and the United Nations Development Programme, signed by the parties on 7 June 1991. The host country implementing agency shall, for the purpose of the Standard Basic Assistance Agreement, refer to the government co-operating agency described in that Agreement.

The UNDP Resident Representative in Tirana, Albania is authorized to effect in writing the following types of revision to this Project Document, provided that he/she has verified the agreement thereto by the UNDP-GEF Unit and is assured that the other signatories to the Project Document have no objection to the proposed changes:

- Revision of, or addition to, any of the annexes to the Project Document;
- Revisions which do not involve significant changes in the immediate objectives, outputs or activities of the project, but are caused by the rearrangement of the inputs already agreed to or by cost increases due to inflation;
- Mandatory annual revisions which re-phase the delivery of agreed project inputs or increased expert or other costs due to inflation or take into account agency expenditure flexibility; and
- Inclusion of additional annexes and attachments only as set out here in this Project Document

SECTION II: STRATEGIC RESULTS FRAMEWORK, SRF AND GEF INCREMENT

Project Goal	The long term goal is to assist Albania in establishing a mechanism by which strategies to moderate, cope with, and take advantage of the consequences of climate change are enhanced, developed, and implemented.

Project Strategy	Objectively verifiable indicators				
	Indicator	Baseline	Target	Source of Verification	Risks and Assumptions
Project objective: To build adaptive capacities in the DMRD to ensure resilience of the key ecosystems and local livelihoods to climate change. This will be done by first identifying, and then integrating climate change response measures into development programming in the DMRD.	Enhanced resilience of DMRD coastal area covering approximately 140 km^2 due to adaptation measures (e.g rehabilitation of dune systems)	DMRD ecosystem faces additional stress induced by climate change. Sea level rise, more frequent and intense floods, frequent inundation of low lying coastal areas affecting life cycles of species and \risk of habitat loss and ecosystem fragmentation of a unique compound ecosystem of sandy dunes, lagoons and coastal wetlands. There are no efforts currently underway to address climate change impacts on ecosystem degradation.	At least two types of resilience-enhancing measures employed by the project upon its completion, covering 45% of ecosystem area of concern	Ecological Risk Assessment report and / or extracts from bio-monitoring. Pilot project reports; Project annual reports	Baseline projects aimed at promoting sustainable development in Lezha region in general and addressing human induced threats to biodiversity in particular are successful in meeting their baseline objectives (see baseline section for list of projects). There is political stability and national and local governments' interest in promoting adaptation objective under the UNFCCC remains as strong as it has been under the FNC, TNA and SNC. Local communities in Lezha Region understand climate change implications and are supportive of proposed adaptation measures.
Outcome 1: Capacities to monitor and respond to anticipated climate change impacts in the DMRD at the institutional and community levels developed	Capacity to systematically assess climate impacts and its expected changes on biodiversity in the DMRD is in place	There is only a very general understanding of how CC could impact coastal area ecosystems.	By project end, there is systematic data and information on the physical and biological impact on the DMRD ecological system as a result of climate change.	Final project report; Independent evaluation	Access to high-quality training resources can be effectively obtained. (This risk will be mitigated through access to the emerging "adaptation community" that has been engaged in development of the UNDP-GEF APF)
Outcome 2: DRMD region's conservation and development programmes, plans and policies and climate change concerns in the DMRD integrated	Development programmes/ plans have been modified to address climate change adaptation measures (such as environmental zoning of the coastal area, tourism development, agriculture development, wastewater and sewage development plans)	Under the FNC, general response measures such as better in-situ conservation and monitoring have been identified	By the end of the project, for at least five baseline programmes, specific modifications are identified and made to address climate concerns	Final project report	Local authorities and project teams responsible for implementing regional plans, strategies and projects are open to integrating adaptation measures. (This risk will be addressed through an emphasis on active participation from national and local level institutions,

Project Strategy	Objectively verifiable indicators				
	Indicator	Baseline	Target	Source of Verification	Risks and Assumptions
	Implementation of adaptation response measures, as part of the development programs in the DMRD, initiated	Programming teams and documents do not take into account CC impacts on BD	By the end of the project, at least five adaptation measures designed and initiated.	Documents, annual reports put out by management teams of baseline programmes	as well as the NGO sector, and the sharing of information)
	Ability of the protected area network to provide effective protection to DMRD's globally significant biodiversity against climate-related risks is increased. Indicators for monitoring this are based on the GEF's METT approach of using proxy indicators, as follows: 1) Increased territorial coverage of PAs in the DMRD to increase habitat heterogeneity, corridors, etc 2) Management plan of expanded protected area takes into account climate information to define and implement additional conservation activities specifically targeted to increasing resilience to climate change (e.g., restoration of coastal dunes and other measures identified by the project)	4,500 ha Management plan does not include specific actions responding to climate change	26,000 ha At least 2 types of resilience measures specifically aimed at increasing coping capacity of the ecosystem to CC are undertaken within the PA management plan	Independent evaluation Independent evaluation	
Outcome 3: Capacity for adaptive management, monitoring and evaluation, learning, and replication of project lessons developed	Knowledge and capacity for upscale and replication is in place	No regions of Albania are considering the issue of adaptation to CC as there is not sufficient knowledge and experience to do so	By the end of the project, at least 2 other regions have requested a consultation and / or support of the adaptation project team to help mainstream adaptation in vulnerable districts	Final project report	Socio-economic and political stability enables a focus on sustainable development by all Regional Councils
	Number of queries from other donors	No donors in Albania are considering the issue of adaptation to CC	By the end of the project, all donors who are active in vulnerable areas of Albania have had substantive discussions with the adaptation project team	Final project report	

SECTION III: Total Budget and Work plan

Award ID:	00049138
Award Title:	PIMS 3629 CC PDF A: Adaptation - Drini Albania
Business Unit:	ALB10
Project Title:	PIMS 3629 CC PDF A: Adaptation - Drini Albania
Project ID	00059705
Implementing Partner (Executing Agency)	NEX execution – Executing Agency: Ministry of Environment, Forestry and Water Administration

GEF Outcome/Atlas Activity	Responsible Party/ Implementing Agent	Fund ID	Donor Name	Atlas Budgetary Account Code	ATLAS Budget Description	Amount Year 1 (USD)	Amount Year 2 (USD)	Amount Year 3 (USD)	Amount Year 4 (USD)	Total (USD)	See Budget Note:
				71200	International Consultants	30,000	20,000	10,000	0	60,000	1
				71300	Local Consultants	20,000	25,000	20,000	10,000	75,000	2
OUTCOME 1: (as per the logframe)	**Ministry of Environment, Forestry and Water Administration**	**62000**	**GEF**	71600	Travel	7,000	10,000	10,000	10,000	37,000	3
				72100	Contractual services	20,000	25,000	25,000	15,000	85,000	4
				72200	Equipment	20,000	0	0	0	20,000	5
				74200	Printing Prod cost	2,000	2,000	2,000	2,000	8,000	
				72400	Comm. & Audio	2,000	2,000	2,000	2,000	8,000	
				72500	Office Suppliers	5,000	5,500	5,500	0	16,000	6
				72145	Training and Education Services	4,000	2,000	2,000	2,000	10,000	
				74500	Misc.	3,000	3,000	3,000	1,700	10,700	
					sub-total GEF	**113,000**	**94,500**	**79,500**	**42,700**	**329,700**	
		00012	**UNDP**	71200	International Consultants	0	0	5,000	5,000	10,000	x
				71300	Local Consultants	0	0	10,000	10,000	20,000	
				71600	Travel	0	0	3,000	3,000	6,000	
				72100	Contractual services	0	0	10,000	10,000	20,000	
				72200	Equipment	0	0	2,000	2,000	4,000	
					sub-total UNDP	**0**	**0**	**30,000**	**30,000**	**60,000**	
					Total Outcome 1	**113,000**	**94,500**	**109,500**	**72,700**	**389,700**	
OUTCOME 2: (as per the logframe)	**Ministry of Environment, Forestry and**	**62000**	**GEF**	71200	International Consultants	10,000	10,000	10,000	10,000	40,000	
				71300	Local Consultants	10,000	20,000	20,000	20,000	70,000	x

	Water Administration			71600	Travel	5,000	10,000	10,000	10,000	35,000	x
				72100	Contractual services	15,000	10,000	10,000	15,500	50,500	
				72400	Comm & Audio	2,000	2,000	2,000	2,000	8,000	
				72500	Office Suppliers	8,000	4,000	2,000	8,000	22,000	
				72145	Training and Education Services	2,000	0	2,000	2,000	6,000	
				74500	Mics.	3,000	3,000	3,000	3,000	12,000	
					sub-total GEF	**55,000**	**59,000**	**59,000**	**70,500**	**243,500**	
		30000	**GoA**	72100	Contractual services	0	12,000	5,000	5,000	22,000	
				72145	Training and Education Services	0	8,000	5,000	5,000	18,000	
					sub-total GoA	**0**	**20,000**	**10,000**	**10,000**	**40,000**	
					Total Outcome 2	**55,000**	**89,000**	**69,000**	**80,500**	**293,500**	
OUTCOME 3: MONITORING, LEARNING, ADAPTIVE FEEDBACK & EVALUATION (as per the logframe and M&E Plan and Budget)	**Ministry of Environment, Forestry and Water Administration**	**62000**	**GEF**	71200	International Consultants	10,000	10,000	10,000	10,000	40,000	
				71300	Local Consultants	25,000	20,000	20,000	10,000	75,000	
				71600	Travel	10,000	7,000	7,000	10,000	34,000	x
				72100	Contractual services	30,000	25,000	25,000	15,000	95,000	x
				72200	Equipment	10,000	0	0	0	10,000	
				74200	Printing and Prod	2,000	2,000	2,000	1,500	7,500	
				72400	Comm and Audio	500	500	500	500	2,000	
				74100	Prof services (Audit)	2,500	2,500	2,500	2,500	10,000	
				72500	Office Suppliers	5,500	6,500	6,500	0	18,500	
				72145	Training and Education Services	4,000	2,000	2,000	2,000	10,000	
				74500	Mics.	1,000	1,500	1,500	800	4,800	
					sub-total GEF	**100,500**	**77,000**	**77,000**	**52,300**	**306,800**	
		30000	**GoA**	72200	Contractual services	0	5,000	5,000	5,000	15,000	
				74500	Miscellaneous	0	2,000	2,000	1,000	5,000	
					sub-total GoA	**0**	**7,000**	**7,000**	**6,000**	**20,000**	
					Total Outcome 3	**100,500**	**84,000**	**84,000**	**58,300**	**326,800**	
PROJECT MANAGEMENT UNIT		**62000**	**GEF**	72100	Contractual service	18,000	18,000	18,000	18,000	72,000	
				72500	Office Supplies	4,000	3,000	3,000	3,000	13,000	
				74500	Miscellaneous	2,500	2,500	2,500	2,500	10,000	
					sub-total GEF	**24,500**	**23,500**	**23,500**	**23,500**	**95,000**	

(This is not to appear as an Outcome in the Logframe)		**30000**	**GoA**	71600	Travel	0	0	5,000	5,000	10,000	
				72500	Office Supplies	0	0	5,000	5,000	10,000	
				74500	Miscellaneous	0	0	5,000	5,000	10,000	
					sub-total GoA	**0**	**0**	**15,000**	**15,000**	**30,000**	
					Total Management	**24,500**	**23,500**	**38,500**	**38,500**	**125,000**	
GEF TOTAL						**293,000**	**254,000**	**239,000**	**189,000**	**975,000**	
PROJECT TOTAL						**293,000**	**281,000**	**301,000**	**250,000**	**1,125,000**	

Summary of all Funds: [14]

GEF		**293,000**	**254,000**	**239,000**	**189,000**	**975,000**
UNDP						**60,000**
GoA						**90,000**
GoA Cash parallel						**740,000**
REC Cash parallel						**44,525**
GoA In kind contribution						**50,000**
Summary of Fund						**1,959,525**

1) All international consultancies relate to vulnerability gap analysis, identification and detailed design of on-the-ground adaptation measures in the Drini-Mati coastal area; localizing of climate scenarios for Drini – Mati area and developing socio-economic scenarios for the region. Introducing and undertaking integrated assessment and cost-benefit analysis for "no regret adaptation measures"; methodological approaches for adaptation mainstreaming in regional development programmes and plans; consultations and training; and support to monitoring and evaluation;

2) National consultancies relate to data generation and update; stakeholder engagement plan and consultations; policy dialogue and implementation of mainstreaming plan of the project; Scenario development on local level, design and implementation of local forecasting schemes for the target coastal zone; planning and undertaking adaptation mainstreaming measures; consultations and training; Includes cost of project management, lessons learned and dissemination; and monitoring and evaluation;

3) Local travel relates all three outputs of Outcome 1 in the target geographic area; Output 2.2 and all Outputs of Outcome 3.

[14] Summary table should include all other co-financing (cash and in-kind) that is not passing through UNDP.

4) Contractual services relate to Output 1.2 and Output 1.3. Output 2.2. and Output 3.2 These services mainly cover monitoring system for Drini – Mati coastal areas; training and institutional capacity building; community engagement; and project's communication and outreach strategy; This mainly includes the following tasks:

4.1) group of experts (2 persons) coastal dynamic modeling and downscaled climate scenarios for wider coastal landscape and geomorphological system of DMRD – *(30 person – weeks) -$15.000*

4.2) group of experts (3 persons), institutional functional analysis and capacity development activities; package of amendments to regulatory framework, and protected area management plans and planning procedures; Design and introduce biomonitoring and ecological risk assessment system that includes climate risk factors and indicators in the framework of protected area management system – *(48 person – weeks) -$ 24.000*

4.3) group of experts (4 persons) – community consultation and mobilization techniques; bottom up vulnerability assessments to feed into science/evidence –based climate risk assessments; community engagement strategy and plan in adaptation processes; project mechanisms for community participation in adaptation measures, such as coastal dune, habitat rehabilitation process. - *(45 person – weeks) – $22,500*

4.4) group of experts / NGOs on project's communication and outreach strategy, including information dissemination and awareness raising activities – (52 people –weeks) – $26.000

5) Equipment does NOT relate to PMU activities but software and other for monitoring; scenario development and forecasting related under Outcome 1 and knowledge product production under outcome 3. This includes coastal modeling and climate change scenario development software. This also includes office equipment (computer, copier and printer) for the production of the materials for workshops, training, and knowledge management related activities.

6) Office supplies does NOT relate to PMU but ONLY to the material necessary for workshops, training, local capacity building and knowledge management under all outcomes.

SECTION IV: ADDITIONAL INFORMATION

1) APPROVED MSP PIF

PROJECT IDENTIFICATION FORM (PIF)[15]

PROJECT TYPE: Medium-sized Project
THE GEF TRUST FUND

Submission Date[16]: July 5, 2007
Re-submission Date: August 17, 2007

PART I: PROJECT IDENTIFICATION

GEFSEC PROJECT ID[17]:
GEF AGENCY PROJECT ID: 3629
COUNTRY(IES): Albania
PROJECT TITLE: Identification and Implementation of Adaptation Response Measures in the coastal ecosystem of Drini-Mati River Deltas
GEF AGENCY(IES): UNDP
OTHER EXECUTING PARTNERS: Ministry of Environment; Forest and Water Administration
GEF FOCAL AREAS: Climate Change
GEF-4 STRATEGIC PROGRAM(S): Strategic Priority on Adaptation - SPA

INDICATIVE CALENDAR	
Milestones	**Expected Dates**
Work Program (for FSP)	n/a
CEO Endorsement/Approval	Sept. 2007
GEF Agency Approval	Oct. 2007
Implementation Start	Nov.2007
Mid-term Review	Nov.2009
Implementation Completion	Sept. 2012

A. PROJECT FRAMEWORK (Expand table as necessary)

Project Objective: to build adaptive capacities in the Drini-Mati River Deltas (DMRD) to ensure resilience of the key coastal ecosystems and local livelihoods to climate change.

Project Components	*Investment or TA,*	**Expected Outcomes**	*Expected Outputs*	*Indicative GEF Financing**		**Indicative Co-financing***		**Total ($)**
				($)		***($)***		
1. Development of monitoring and forecasting capacity for the exposure unit (vulnerable ecosystem)	TA	Capacities to monitor and respond to anticipated climate change impacts in the DMRD at the institutional and community levels developed	• Forecasting and early warning system; • Coastal modeling tools and decision-making guidelines; • Community engagement and training	329,700	85	60,000	15	389,700
2. Climate change mainstreaming into conservation and development	TA	Shengjin region (covers DMRD) conservation and development	• A package of amendment to programmes plans and policies;	243,500	25	720,000	75	963,500

[15] PIF submission is limited only to 4 pages, excluding Part III.
[16] Resubmission is due to the changes in PIF and OFP endorsement templates. No other changes have been made to this version
[17] Project ID number will be assigned initially by GEFSEC.

framework.		policies, plans and programmes integrate climate change risks and take local pilot actions for coastal adaptation. .	• Community participation mechanisms for adaptive management; • A suit of pilot measures for local action.					
3. Capacity to replicate successful adaptation strategies in other sub-regions	TA	A system of knowledge management established	• Communication strategy; • Lessons learned and knowledge products produced.	306,800	91	30,000	9	336,800
4. Project management				95,000	51	90,000	49	185,000
Total project costs				975,000	52	900,000	48	1,875,000

B. INDICATIVE FINANCING PLAN SUMMARY FOR THE PROJECT ($)

	Project Preparation	Project	Agency Fee	Total
GEF Grant	24,900	975,000	99,990	1,099,890
Co-financing	12,000	900,000		912,000
Total	36,900	1,875,000	99,990	2,011,890

C. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE ($), IF AVAILABLE

Co-financing Source	Cash	In-kind	Total
Project Government Contribution	830,000		
GEF Agency(ies)	60,000		
NGO[18]		10,000	
Total co-financing	890,000	10,000	900,000

D. GEF RESOURCES REQUESTED BY FOCAL AREA(S), AGENCY (IES) SHARE AND COUNTRY(IES)*

N/A

PART II: PROJECT JUSTIFICATION

A. STATE THE ISSUE, HOW THE PROJECT SEEKS TO SOLVE IT, AND THE EXPECTED GLOBAL ENVIRONMENTAL BENEFITS TO BE DELIVERED:

1. The Drini and Mati River Deltas harbor (DMRD) significant biodiversity values, and this is recognized under the National Biodiversity Strategy and Action Plan (NBSAP, 1999). Three main types of habitat are found between the 2 deltas including: (i) marine, (ii) wetlands, including estuarine, riverine, lacustrine and palustrine, and (iii) non-wetland habitats including forests, shrubs and open fields where traditional agriculture is practiced. The DMRD provides wintering ground for globally endangered pygmy cormorant *(Phalacrocorax pygmaeus)* and over 70 other species of waterfowl and waterbird with a total population of some 180,000 individuals. In fact, the Drini delta is an internationally recognized Important Bird Area (IBA). Further, a recent study has revealed that the Patok lagoon, within the Mati Delta, serves as an important feeding area for globally endangered loggerhead turtles (*Caretta caretta)* in the Adriatic sea, with over 300 turtles tagged in this area over the last two years. Forests in the DMRD harbor several medicinal and aromatic herbs.

[18] Regional Environmental Centre (REC)

2. Based on assessments the DMRD has been identified as a critically vulnerable region of the country. This conclusion comes from the first comprehensive vulnerability and adaptation assessment undertaken under the First National Communication (FNC) to the UNFCCC. The climate change scenarios for Albania developed as part of this exercise have predicted an annual increase in temperature of up to 3.6ºC, decrease in precipitation by 12.5%, and consequent reduction of water resources and arable land (due to moisture loss, soil erosion and degradation) by year 2100. In the coastal zone, an increase in sea surface temperature as well as sea level rise of up to 61 centimeters is expected to have serious impacts on marine and littoral biodiversity as well as livelihoods of local communities. Extreme events such as heavy rains, floods and drought are not rare phenomena for the area, and are part of the climate variability.

3. In terms of impact on biodiversity, a tendency of natural communities to move inland because of the frequent inundation of low-lying coastal areas has been observed. Because of intensive flooding in salt marshes (*Kune-Vain, Patok lagoons*,), vegetation is directly affected by more frequent and longer submersion. Majority of salt marsh bird nest on the ground have shown to be vulnerable to disturbances caused by flooding. Many species feed on intertidal mudflats, where water levels affect the availability of food. The number of nesting bird species is low compared to the previous years and the potential estimated capacity: in 2005 only 11 species with 44-98 nesting pairs have been found in Kune-Vaini Lagoon; and 6 species with 13-34 nesting pairs have been found in Patok Lagoon. These figures have shown to be 20-30% lower compared to those of 2002. (Museum of Natural Sciences of Albania monitoring for 2005). SNC team in Albania find a correlation between the reductions in the number of these species and alternations of frequent flooding and dry periods that result in habitat loss and fragmentation and experts also share the opinion that the decomposition of flooded vegetation releases significant quantities of methane and other greenhouse gases which might also affect in increasing of the level of disturbances to the area. (Source: Report of Monitoring of the State of Environment prepared by MoEFWA).

4. Due to the importance assigned to the target ecosystem the government plans to expand already existing network of protected areas to cover the entire region of Shengjin (from Kune-Vain to Tale to River Mati to Patok to Fushe Kuqe to River Ishmi). This calls for consideration of climate change impacts to these efforts. The **main barrier** by far preventing the integration of adaptation to climate change is the absence of institutional and individual capacities to undertake a rigorous assessment of climate change impact on biodiversity, and then to apply this technical information to raise awareness and mobilize programmatic choices regarding sustainable development of the DMRD that take into account consequences of climate change on globally significant coastal ecosystem.

5. More specifically, the following are the key barriers to be addressed by the project: (i) There is no observation and forecasting capacity in the coastal region; (ii) Integrated Coastal Area Management (ICAM) principles are not well established and adaptation needs are not considered into the coastal area planning; (iii) Programmes and projects directed towards protection of the unique coastal compound ecosystem of DMRD do not accommodate climate change concerns; (iv) There is limited understanding of the coastal habitat change instigated by climate change that could lead to the combined efforts for autonomous and planned adaptation.

6. The project aim is to assist Albania to build adaptive capacities in the Drini-Mati River Deltas to ensure resilience of the key ecosystems and local livelihoods to climate change. This will be done by first identifying, and then integrating climate change response measures into conservation and development programming in the DMRD. This objective will be achieved through the following outcomes: (i) capacities to monitor and respond to anticipated climate change impacts in Drini Mati River Deltas – coastal ecosystem developed; (ii) Shengjin region conservation and development policies, plans and programmes integrate climate change risks and take local pilot actions for coastal adaptation; (iii) Capacity to replicate successful adaptation strategies and measures in other sub-regions is in place. Inasmuch as the project focuses on an area that harbors globally significant biodiversity the *project will generate benefits in the biodiversity focal area* by reducing the vulnerability of this coastal wetland ecosystem that houses endangered and vulnerable flora and fauna

to expected climate change and thus reducing the risks of global biodiversity loss. *National benefits* will also be realized because Albanian institutions and nationals will acquire the skills to address adaptation which can be applied in other regions of the country. To the extent that the project will develop critical capacities to begin a longer-term process of integrating climate concerns into the implementation of development programmes which in turn enhance ecosystem integrity and resilience to climate change. The project is expected to be the first show case in the country where climate concerns are taken into account and lessons learnt will be replicated to other regions of the country that share similarity to the selected system.

B. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH NATIONAL PRIORITIES/PLANS:

7. The project is a number one priority according to the First National Communication (FNC), and the currently undergoing, Second National Communication (SNC) to the UNFCCC. The regional MDG repots for Shkodra (2004) and Lezha (2005) regions have highlighted the importance of adaptation issues in the Drini and Mati river deltas that may otherwise jeopardize local livelihood and national conservation efforts.

C. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH GEF STRATEGIES AND FIT WITH STRATEGIC PROGRAMS:

8. This proposal conforms to the Operational Guidelines for the Strategic Priority "Piloting an Operational Approach to Adaptation" (SPA)[19]. As outlined in these operational guidelines, the project will contribute to the GEF's stated objective of reducing vulnerability and increasing adaptive capacity to the adverse effects of climate change in the biodiversity focal area by focusing on the unique ecosystem of the Drini and Mati River Deltas (DMRD). This pilot, demonstration project will address local adaptation needs in the DMRD to reduce risks of loss of biodiversity which is of global significance. It will reduce the vulnerability of the DMRD wetland ecosystem to the adverse impacts of expected climate change.

D. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:

9. The project will very closely coordinate with the SNC team capitalizing on their technical reports (V&A studies) for the region. The project will also coordinate with the WB and number of its GEF and non-GEF activities, namely, with *Integrated Coastal Zone Management*. While not operating within the DMRD, this project and its subsequent phases could constitute an important locus for replication of the experience in the northern coast (DMRD) with mainstreaming adaptation response measures. Similarly, *Natural Resource Management Project (NRMP)* that aims to address degradation of 3 watersheds – Drini, Mati and Shkumbini dictates close coordination. While the above noted project does not cover lowland, delta areas, many of the threats to biodiversity in the DMRD emanate in upland watersheds and the NRMP project serves to mitigate those. Integrated *Water and Ecosystem Management* project, another initiative requiring close coordination with high potential of complementarity. Activities under this project are focused on reducing human-induced threats to biodiversity, but climate change impacts are not being taken into account in the development and implementation of the Kune-Vaine protected area management plan for coastal wetland ecosystems. Meetings have been held with the Bank staff in Tirana as well as with project implementation units, and this communication and dialogue will be maintained during project implementation. The proposed project is going to be a first ever effort in Albania that will comprehensively address priority adaptation needs.

E. DESCRIBE THE INCREMENTAL REASONING OF THE PROJECT:

10. Under the *current baseline* the government of Albania plans to expand the protected area system to the entire region of Shengjin (from Kune-Vain to Tale to River Mati to Patok to Fushe Kuqe to River Ishmi). This calls for consideration of climate change impacts to these efforts. The Directorate of Nature Protection Policy under the Ministry of Environment, Forest and Water Administration

[19] GEF/C.27/Inf.10, October 14, 2005

(MOEFWA) will expand ecosystem protection with a total surface of about 26,000 ha as a protected area with 2 distinct zones inside. The first will be a Nature Management Reserve (IUCN category IV) encompassing the coastal wetlands of Kune-Vain to Tale to River Mati to Fushe Kuqe to River Ishmi, with a surface about 11,000 ha. The second zone, which surrounds the first zone, and comprises primarily agricultural land in the area of Shengjin with a surface of about 15,000 ha, will have the status of Protected Landscape (IUCN Category V). Currently, only the Kune-Vain (2,300 ha) and Patok-Fushe Kuqe (2,200 ha) lagoons are Category IV protected areas. This constitutes a major step by the MEFWA in terms of addressing human induced threats to biodiversity. By addressing non-climate stresses, the work of the Directorate will help enhance the capacity of the DMRD to adapt to climate change[20]. There is, however, scope to design and implement targeted adaptation measures as additional activities to current conservation efforts. Without the GEF's intervention the national capacity to understand and predict the impacts of climate change on the globally significant biodiversity of the DMRD, and to identify and implement appropriate adaptation response measures will remain weak and the current objective to improve the protection of the unique coastal ecosystems jeopardized.

F. RISKS AND MANAGEMENT MEASURES:

Risk	Risk rating	Risk mitigation strategy
Baseline projects aimed at promoting sustainable development in Lezha region in general and addressing human induced threats to biodiversity in particular are successful in meeting their baseline objectives	Low	The project will maintain constant and close dialogue with the projects/ programmes to track progress and identify how these can be enhanced to take into consideration climate change concerns.
Local communities in Lezha Region understand climate change implications and are supportive of proposed adaptation measures in addition to their participation in ecosystem management activities.	Medium	The project will put specific emphasis (through Outcome 1, Output 1.3 and Outcome 2, Output 2.2) on building awareness of communities and putting in place a legitimate mechanism for their active participation in the identification and implementation of adaptation measures. The project will also involve local NGOs in project activities.
Local authorities and project teams responsible for implementing conservation plans and, projects are open to integrating adaptation measures	Medium	This risk will be addressed through an emphasis on active participation from national and local level institutions, as well as the NGO sector, and the sharing of information.

G. DESCRIBE, IF POSSIBLE, THE EXPECTED COST-EFFECTIVENESS OF THE PROJECT:

11. The project has chosen to focus its attention in an area that has been prioritized as vulnerable to climate change and where the potential ecological losses could be significant. Therefore, by investing project resources in enhancing adaptive capacity of this area, the potential pay-off in terms of ecological benefits is higher than it would have been in another region. Furthermore, this region is socio-economically worse-off than others and is a priority for the government in terms of promoting sustainable development. There is therefore a significant amount of attention and resources, of government and donors, in this area, which provides a good baseline on which to build adaptation

[20] As per GEF guidance on co-financing, inasmuch as this investment by the government is essential to achieving the project's objective of enhancing adaptive capacity of the DMRD ecosystem, this is being considered as government cofinancing for the project.

response measures. The project will therefore not be working in a vacuum and will be able to leverage existing investments to achieve the goal of enhanced adaptive capacity. As noted above, the target coastal ecosystem falls under the national priority for conservation and expansion of protected area system. Therefore, building on the current efforts described above makes the project most cost-effective as opposed to targeting an area where the established system may prove to be more rigid to accommodate additional changes and modifications in response to current and anticipated impacts of climate change. More detailed analysis of cost-effectiveness of the project in terms of building-in ecosystem resilience actions in the overall ecosystem management will be presented at the MSP submission.

H. JUSTIFY THE GEF AGENCY COMPARATIVE ADVANTAGE

12. The project scope is aligned with *UNDP's comparative advantage* in capacity building, institutional strengthening and advocacy. Based on the above situation analysis, the proposed project strategy is to take an adaptive capacity approach whereby the focus will be on increasing the capacity of the DMRD ecological system to be resilient to climate change. This will be achieved by addressing the information, awareness, and technical capacity barriers that are inhibiting the government at the regional and central level, communities and NGOs from identifying and implementing specific adaptation response measures.

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINTS AND GEF AGENCIES

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):

(Please attach the country endorsement letter(s) or regional endorsement letter(s) with this template).

Pellumb Abeshi, General Secretary, Ministry of Environment, Forestry and Water Management of Albania	Date: May 5, 2007

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies and procedures and meets the GEF criteria for project identification and preparation.	
Y. Glemarec Yannick Glemarec UNDP/GEF Executive Coordinator	Keti Chachibaia Project Contact Person
Date: *August 17, 2007*	Tel. and Email: keti.chachibaia@undp.org +421 2 59 337 422

2) OTHER AGREEMENTS

a) Report on the Use of Project Preparation Grant

PDF/PPG STATUS REPORT

GEFSEC PROJECT ID:
UNDP PROJECT ID: 3629
COUNTRY: ALBANIA
PROJECT TITLE: Identification and implementation of adaptation response measures in Drini-Mati River Deltas
OTHER PROJECT EXECUTING AGENCY(IES): Ministry of Environment
GEF FOCAL AREA: Climate Change
GEF OPERATIONAL PROGRAM: Strategic Priority on Adaptation (SPA)
STARTING DATE: 1 March, 2007
ESTIMATED DATE OF OPERATIONAL CLOSURE: MAY 2007
ESTIMATED DATE OF FINANCIAL CLOSURE: JANUARY 2008

Report submitted by:

Name	**Title**	**Date**
Lauren Bohatka	UNDP Environment Focal Point	9 March 2007
Pellumb Abeshi,	General Secretary, Ministry of Environment, Forest and Water management	9 March 2007

PART I - PROJECT ACHIEVEMENTS

A- SUMMARY OF ACTUAL ACHIEVEMENTS OF PREPARATORY PHASE (OUTPUTS AND OUTCOMES), AND EXPLANATION OF ANY DEVIATIONS FROM EXPECTED OUTCOMES

With the purpose of achieving the main objective of the Project Preparatory phase, that of development of a Medium Size Project on "*Identification and Implementation of adaptation measures in Drini-Mati River Deltas area*", in the basis of the PDF A project document, the following outputs and activities have been undertaken:

1. Managerial arrangements

The overall Project formulation process has been managed by the Climate Change Program Unit that is currently implementing the UNDP-GEF climate change portfolio of projects, including the Second National Communication project by ensuring proper management and synergy to other prior and ongoing activities. The Climate Change Program/Unit has largely contributed through the provision of expertise, data and information analysis for adaptation. For more information on the Program/Unit structure see Attachment 1.

A multi-sectoral team of experts was established for the project preparatory phase. The team started its work with the stocktaking, review and synthesizing the existing information on socio-economic, environmental, vulnerability and adaptation to climate change for Drini-Mati River Deltas. The pervious expertise on the Vulnerability and adaptation studies undertaken so far by the Climate Change Unit has been drawn.

2. Stakeholder analysis and stocktaking

A stakeholder analysis has been undertaken during the project preparatory phase. The stakeholder analysis has been done in conjunction with the stocktaking of all relevant information on the Project site. In terms of stakeholder analysis a summary matrix of different stakeholders classified according to their relevance to the project site has been developed. It consists in a list of government and non-government entities, community-based organizations and other concerned groups with their area of interests and possible roles in the project implementation.

In terms of the stocktaking the team realized that this is very important element on the whole cycle of the project preparation as it provided the key inputs to the development of the current socio-economic and current climate change variability and risks along with future scenarios of climate change and socio economic development of the project site which was really a challenge.

3. Identification of co-funding sources

Under the guidance and leadership of an international expert hired in the frame of the project preparatory phase the team undertook a detailed review of ongoing/planned programmes by various national and international agencies and identification of possible contributors/donors to the project. The project team managed to successfully identify and convince the identified potential co-financing on the importance of such project. In this context, three letters of intend for in-cash contribution have been issued by ensuring a ratio around 1:1 with the required GEF funding for such project.

4. Prepare and finalize the MSP proposal

Based on the collected information and findings from the consultation and validation process, a Medium Size Project has been prepared according to the standard GEF requirements with support of international expert. The above MSP design exercise has been fully supported by the international consultant hired and valuable inputs provided by national team of experts and constructive comments and inputs provided by UNDP Bratislava. The design processes of the above project show that the project design exercise has been drawn on Adaptation Policy Framework Guidance.

Table 1: Completion status of Project Activities

Project Preparation Activities Approved	***Implementation Status***	***GEF Amount ($)***				***Co-financing ($)***
		Amount Approved	***Amount Spent To-date***	***Amount Committed***	***Uncommitted Amount****	
Stakeholder analysis	Activity completed	2,700.00	2,700.00		0.00	0.00
Information collection and consultation	Activity completed	6,000.00	6,000.00		0.00	2,500.00
Identification of co-funding sources	Activity completed	4,590.00	4,590.00		0.00	5,850.00
Formulation of MSP document	Activity completed	11,610.00	11,610.00		0.00	1,930.00
		24,900.00	**24,900.00**			**10,280.00**

B – RECORD OF STAKEHOLDER INVOLVEMENT IN PROJECT PREPARATION

A considerable number of stakeholders have been consulted in the process of project preparation. The tables under the section on Stakeholder Analysis and Involvement Plan show the respective categories of the stakeholders involved and consulted in the MSP preparation exercise, specifically classified according to the governmental, regional, local level. The matrixes indicate the name of the stakeholder, the responsibility and the relevance to the Project according to each category of stakeholder. This is an important element that would be taken into account in the implementation of the MSP as guided by the Adaptation Policy Framework.

PART II - PDF financial delivery

TABLE 2 – PDF INPUT BUDGET – APPROVALS AND COMMITMENTS

	Approved			Committed		
Input Description*	**Staff weeks**	**GEF funds**	**Co-finance**	**Staff weeks**	**GEF funds**	**Co-finance**
Personnel	0	0	0	0	0.00	0
Local consultants	0	6,354	4,295	13	6,354.37	2,500
International consultants	0	11,610	0	5	11,610.20	1850
Training		0	0		0.00	0
Travel		4743	2570		4,742.90	2,570
Office equipment		1,269	0		1,268.69	727.43
Miscellaneous		924	3112.43		923.69	2553
Facilities		0	303		0.00	79.75
Total		**24,900**	**10,280**		**24,900**	**10,280**

Additional information as relevant:

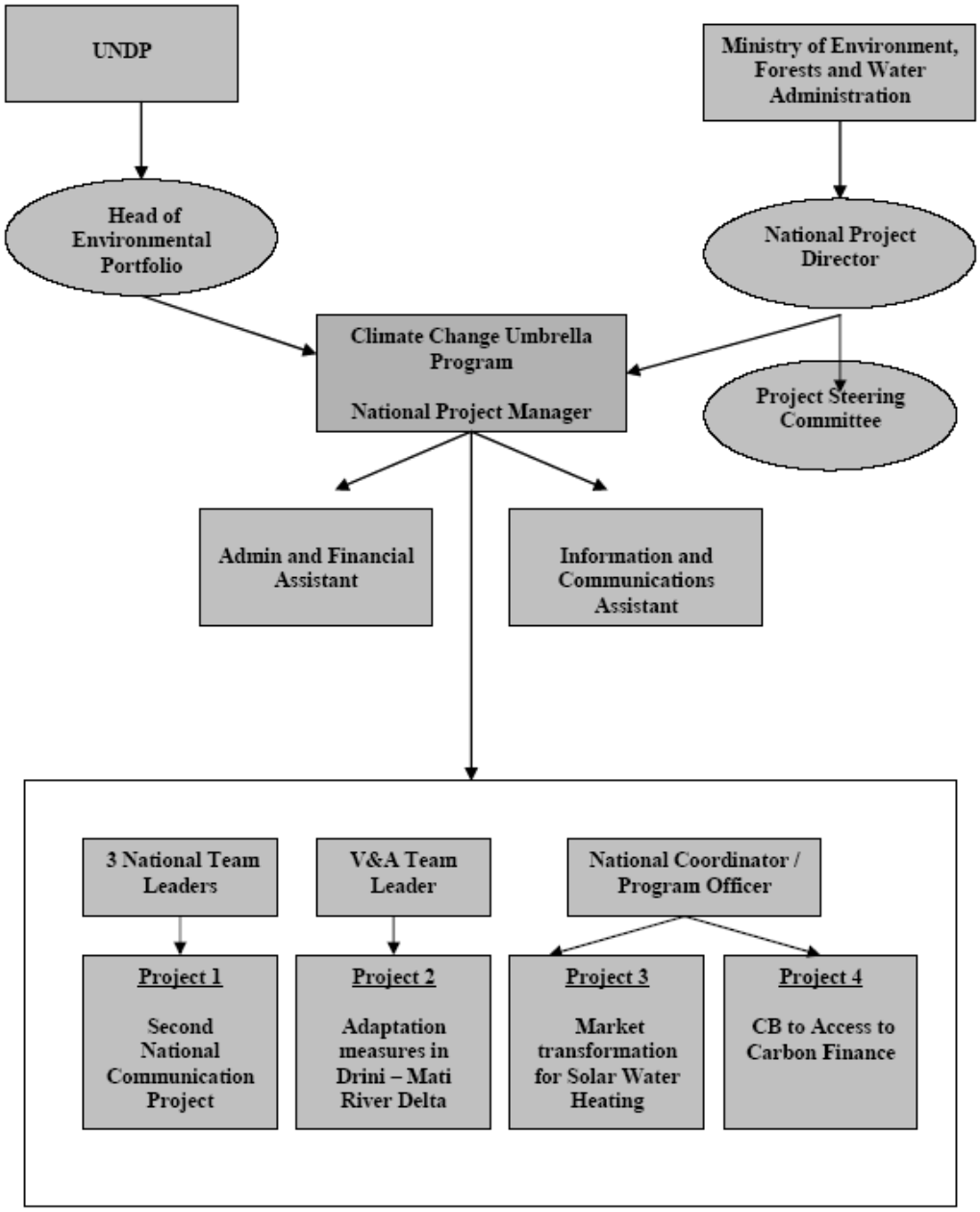
- As of 06 March 2007, the PDF delivery rate for both GEF and non-GEF funds is 71%. The delivery rate for GEF funds only is 82%.
- At the time of operational closure of PDF-A there is an unspent balance worth 8,666 USD. These resources are set aside in order to address possible comments from the GEF Secretariat that may require funding for additional consultations and expert inputs and enable the smooth transition towards the start-up of the Medium Size Project without any gap in between.
- There is not any significant deviation from the approved budget. There are only small ones that are explained with the in-kind contribution provided in terms of expert man/days provided by the Ministry of Environment, Forests and Water Administration and Climate Change Program/Unit.

TABLE 3 : ACTUAL PDF CO-FINANCING

Co-financing Sources for Project Development Preparation (PDF)				
Name of Co-financier (source)	Classification	Type	Amount	
			Expected ($)	Actual ($)
Government of Albania	Impl. Agency	cash	10,000	10,280
Government of Albania	Impl. Agency	In-kind	2,000	2,000
Total co-financing			**12,000**	**12,280**

Attachment 1

Structure of Climate Change Program/Unit



b) Country Endorsement Letter (RAF endorsement letter if BD or CC)

REPUBLIC OF ALBANIA
MINISTRY OF ENVIRONMENT, FORESTRY AND WATER MANAGEMENT
Rruga e Durresit; No. 27; Tirana- Albania; tel: + 355 42 70 622 / 623

Tirana 14 August, 2007

Letter of Endorsement,

To: Yannick Glemarec
UNDP/GEF
304 East 45th Street
9th Floor
New York, N.Y. 10017

Subject: **CC/SPA Albania: "Identification and Implementation of Adaptation Response Measures in the Drini-Mati River Deltas"; PIMS 3629**

In my capacity as GEF Operational Focal Point for Albania, I confirm that the above project proposal (a) is in accordance with the government's national priorities and the commitments made by Albania under the relevant global environmental conventions and (b) has been discussed with relevant stakeholders, including the global environmental convention focal points, in accordance with GEF's policy on public involvement.

Accordingly, I am pleased to endorse the preparation of the above project proposal with the support of UNDP. If approved, the proposal will be prepared and implemented by the Ministry of Environment - Forest and Water Administration. Further, I request UNDP to provide a copy of the project document for information to this institution before it is submitted to the GEF Secretariat for CEO endorsement.

I understand that the total GEF financing being requested for this project is $1,099,890, which includes $ 24,900 against a pre-RAF PDF A , $950,000 for the main project and $ 99,990 Agency fee (10%) for project cycle management services associated with this project.

Sincerely,

Pellumb Abeshi

General Secretary

CC: Ermira Fida
Manager,
Climate Change Unit/Program

c) Confirmed letters of commitments from co-financiers (with English translation)

Submitted as a separate document

d) Agency Notification on Major Amendment and provide details of the amendment, if applicable.

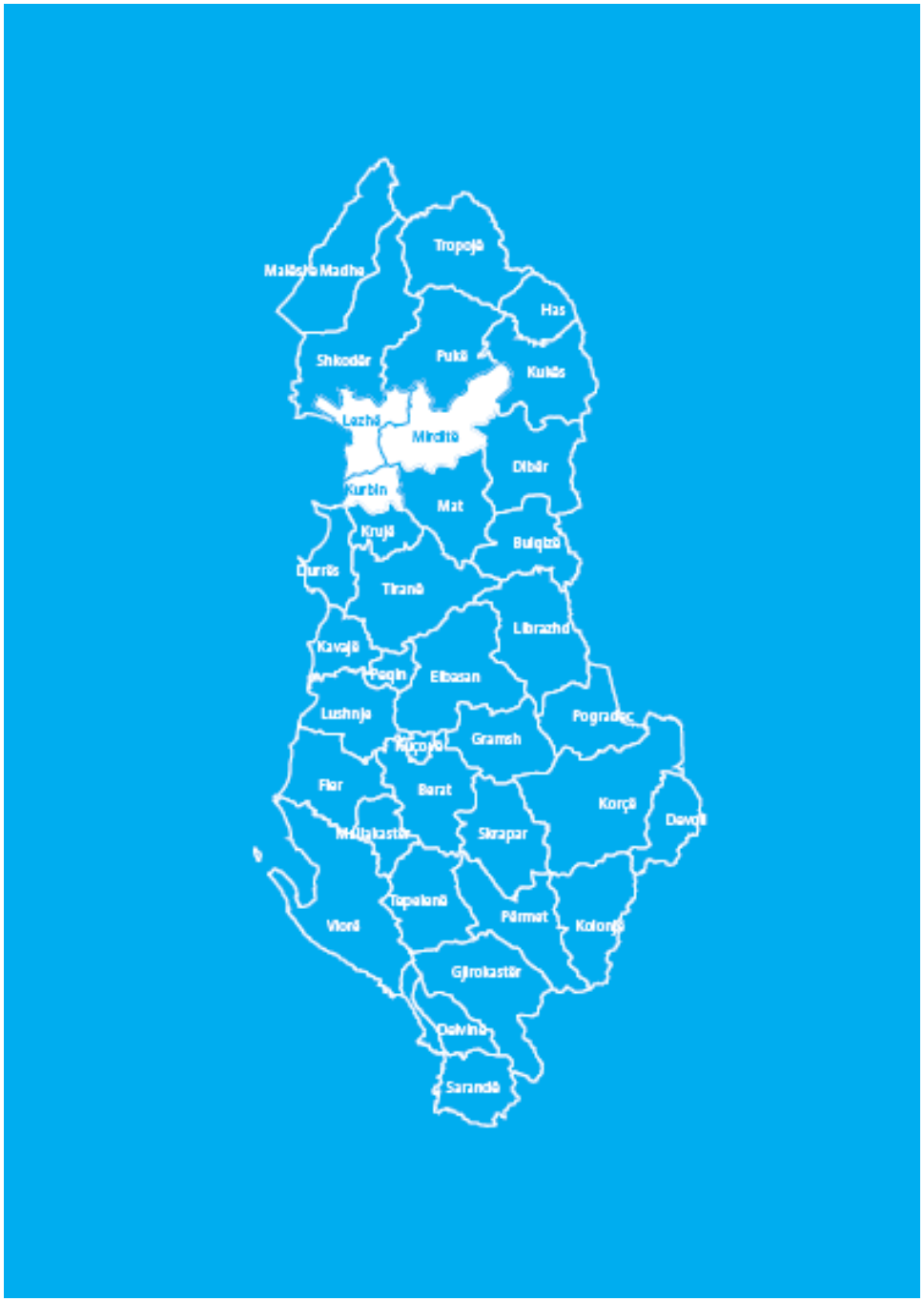
N/A

OTHER ANNEXES

ANNEX 1: MAPS

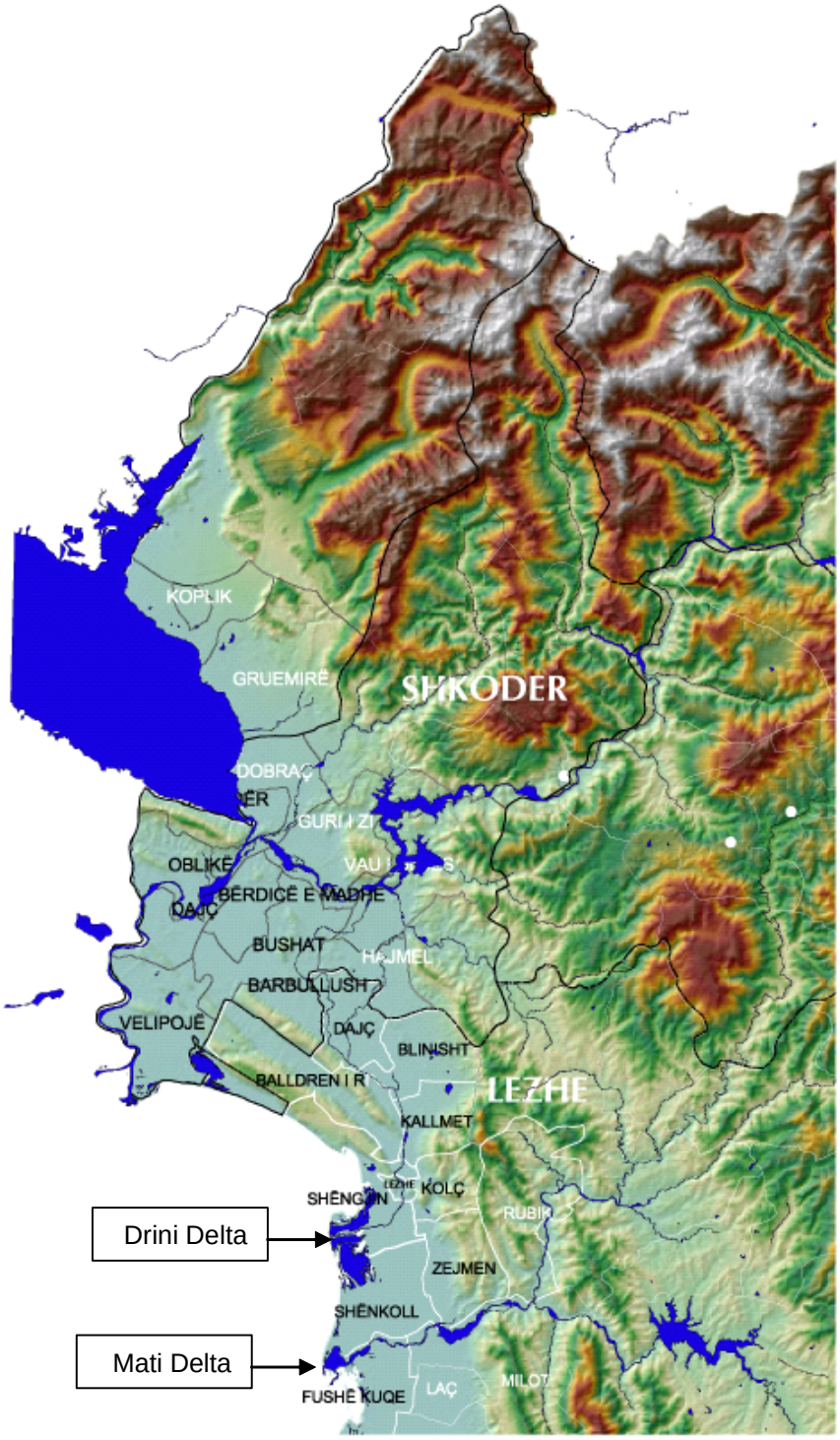
Map 1: Political map with international boundaries

Map 2: Domestic Political Map indicating districts
(Note: White area indicates the Lezha Region)

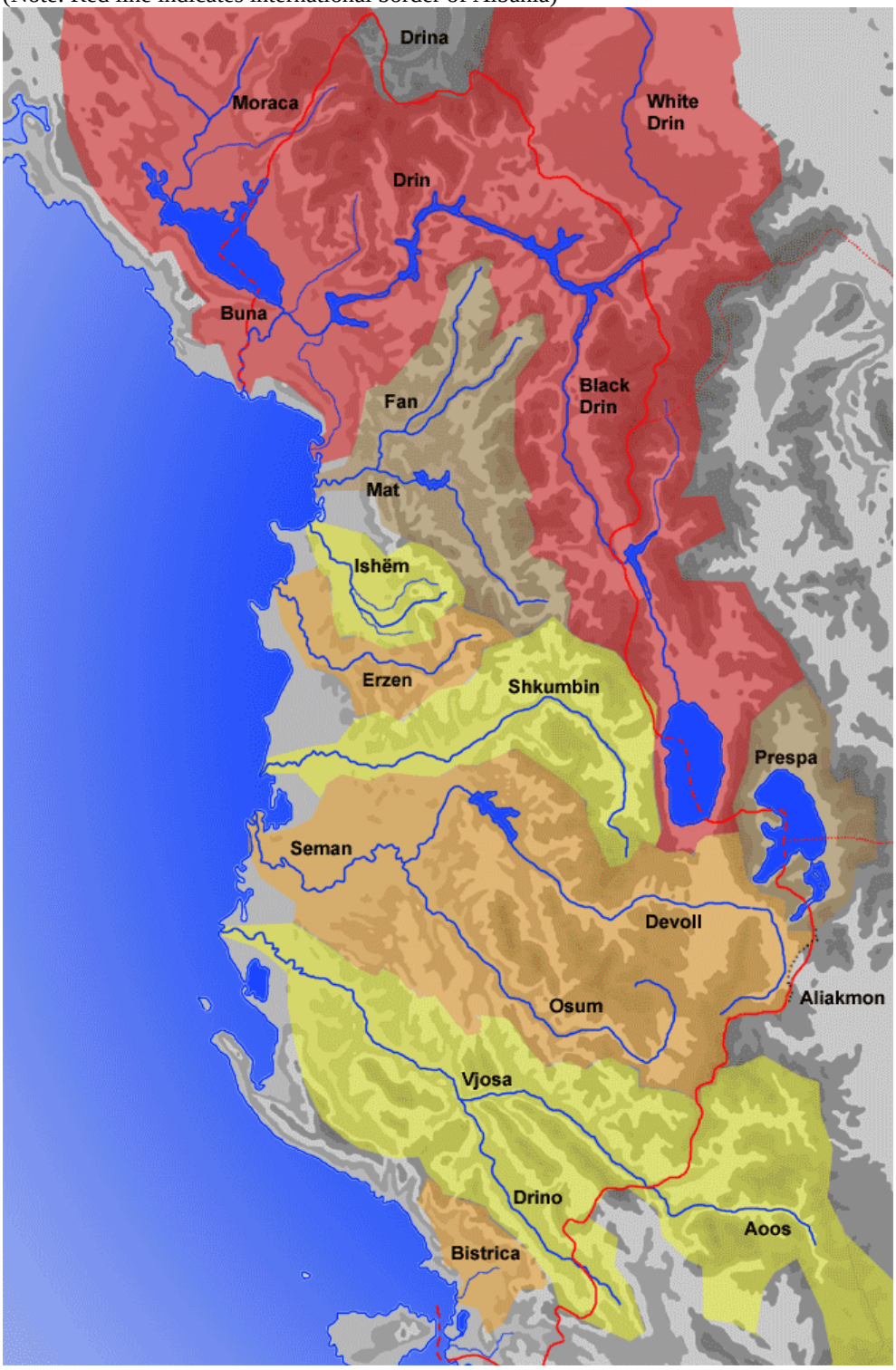


Map 3: Communes within the Lezha Region

Map 4: Shkodra and Lezha Regions in the northern part of the country, and Drini and Mati Rivers Deltas



Map 5: Rivers of Albania
(Note: Red line indicates international border of Albania)



ANNEX 2: BIODIVERSITY OF THE DMRD

A. Reference to DMRD in NBSAP priorities

The following areas within the DMRD have been identified as conservation priorities by the NBSAP:

Kune (Western part of Merxhani lagoon; 300 ha): This is a small spot of the very typical Mediterranean forest and habitats, despite habitat changes over the past 50 years. It is an IBA, in particular a nesting site for herons.

Kenalla (Eastern part of Merxhani lagoon; 1,100 ha): In spite of being damaged and disturbed, a very typical Mediterranean forest still exists in the area. The surrounding lago**o**n and wetlands have many water birds due to which the area performs as an important IBA. The lagoon itself is important from an ichthyologic point of view.

Drini River Outlet (with Ceka and Vaini wetland; 1,700 ha): An area of a very well developed aquatic (brackish and freshwater) vegetation, with very extended reed beds al**t**ernated with water mirrors**.** Because of its vegetation, the area is important for its water birds and birds of prey, and is another important IBA for the country. Inside the area one can find a small typical Mediterranean forest**.** The Drini River Outlet has a particular importance for m**i**gratory fish species**.**

Tale-Mati River (1,000 ha): An area very rich in wetlands and aquatic vegetation. The wetlands, marshlands, and the river outlet are important for water birds and fish species.

Mati River Outlet (and Fushe Kuqe- Patok-Ishmi River; 2,300 ha): Very typical and extended halophyte vegetation. This is one of the most important lagoons in the Mediterranean with regard to waders. It is so far the only place where the globally threatened species *Numenius tennuirostris* has been recorded in Albania making it a very particular IBA for the country.

B. Drini bay including Kune lagoon

Location: Drini bay is located in the District of Lezhe. The shoreline, from the town (harbor) of Shëngjini to the mouth of river Drini, is oriented North-South. The length of coastline is about 6 km.

Physical features: This part of the shore is sandy and sediment is coming both from Buna and Drini rivers transported by long shore currents. From the seaside, one crosses first a coastal dune locally reduced by erosion, Kënalla lagoon and finally reclaimed lands. A coastal road extends on the northern part of the shore up to the managed area of Merxhani lagoon which separates the dune from some recent buildings (illegal according to the law) and a military point.

Geology: This area is characterized by recent sediments, mainly fine sand transported by currents and wind. On the eastern side of the lagoon, the road is built on oligocene rocks. The coast is mainly characterized by alluvium of rivers (53,250,000 tons/year) and by ophiolithic sands and shingles (World Bank and Government of Albania, 1992 c).

Wetland environment: The wetlands of Shëngjini, Leza and Kune include 2 natural reserves covering 5,500 ha (Peja et al., 1993). The vast marsh complex is composed mainly of reed beds *Juncus acutus*, clubrush beds *Scirpus sp.* and large *Carex sp.* beds among scattered tamarisks *Tamarix parviflora* woodland. Open eutrophic waters and unvegetated muds could occur. The Küne headland is covered with about 150 ha of wet wood: *Alnus glutinosa, Populus alba, Fraxinus angustifolia* and *Ulmus campestris*. The lagoon of Merxhani has been opened accidentally around ten years ago to the sea. Thus the entering seawater changed

the hydrochemical characteristics of the water mass and therefore freshwater flora disappeared such as *Tamarix sp.*, the preferential habitat of the waterfowl. The area is important for breeding waterfowl. The pygmy cormorants *Phalacrocorax pygmeus*, Squacco herons *Ardeola ralloides* and *Plegadis falcinellus* still breed there, however most waterfowl species have declined drastically. Are still observed in small numbers the following birds: cormorants *Phalocrocorax carbo sinensis*, night herons *Nycticorax nycticorax*, little egrets *Egretta garzetta*, white egrets *E. alba*, spoonbills *Platalea leucoradia*, grey herons *Ardea cinerea*, glossy ibis *Plegadis falcinellus, Anser anser*, ducks *Anas querquedula, A. clypeata, A. acuta, A. platyrhynchos, A. crecca, A. penelope, Milvus migrans, Alectoris graeca, Aythya ferina, A. fuligula, Ixobrychus minutus*, squacco herons *Ardeola ralloides, Somateria mollissima, Bucephala clanga, Mergus serrator, Circus aeruginosus, C. pygargus, Emberiza melanocephala, Accipiter nisus, Tadorna tadorna, Rallus aquaticus, Haematopus ostralegus, Himantopus himantopus, Charadrius dubius, C. alexandrinus, C. hiaticula, Calidris ferruginea, C. minuta, Philomachus pugnax, Limosa limosa*, redshanks *Tringa totanus, T. erythropus, T. glareola, Arenaria interpres*, gulls *Larus argentatus, L. ridibundus, L. cachinnans, L. melanocephalus, Sterna hirundo, S. albifrons*, turtle doves *Streptopelia turtur, Chlidonias niger*, whiskered terns *C. hybrida, C. leucopterus*, scops owls *Otus scops*, nightjars *Caprimulgus europaeus*, swallows *Hirundo rustica, Cetti's warblers Cettia cetti*, magpies *Pica pica*, sparrows *Passer domesticus, P. hispaniolenisi*, greenfinches *Carduelis chloris*, common sandpipers *Actitis hypoleucos, Streptopelia turtur*, jackdaws *Corvus monedula*, hooded crows *Corvus corone, Otus scops, Uppupa eppos, Hirundo daurica, Alcedo atthis, Merops apiaster, Fulica atra, Pluvialis squatarola, Gallinago gallinago, Numenius arquata, Tringa totanus, Acrocephalus arundinaceus, Gallinula chloropus, Hippolais pallida, Remiz pendulinus, Corvus corax, Pernis apivorus, Buteo buteo, Falco vespertinus* and *Sturnus roseus* (Crockford and Sutherland, 1991; Vangeluwe et al., 1994). Dalmatian Pelicans come regularly in Summer up to October. Concerning mammals, otters are present as well as *Lutra lutra, Mustela nivalis* and *Vulpes vulpes* (Pergent, 1992); reptiles are represented by *Vipera ammodytes, Malpolon monspessulanus, Testudo hermanni, Emys orbicularis.* These lagoons host the following algae associations: *Zostera noltii, Cymodocea nodosa, Ulva rigida*.. In the lagoons with *Phragmitetum communis*, the hallophyte associations are: *Salicornietum europeae, S. radicantis, S. fructicosae, Arthrocnenum glauci, Sporoboletum sp., Annophiletum arundinaceae, Juncetum maritimi, J. acuti, Holoscoenetum romani, Schoenetum sp., Plantaginetum crassifoliae, Tamaricetum dalmaticae*.. The fishes living in the lagoon and the seacoast are: mullets *Mugilidae*, Sparidae *Sparus auratus, Morone labrax, Anguilla anguilla, Trachurus trachurus, Umbrina cirrosa, Arnaglosus imperialis, Lichia aria, Squatina squatina, Boops boops, Solea vulgaris, Pagellus erythrinus, Sardina sardina, Aphanius fasciatus, Dicentrarchus labrax* and crabs *Carcinus aestuarii, C. mediterraneus.* The professional fishermen of the lagoon of Merxhani fished 434 kv in 1987 and only 275 Kv in 1990 while those of the lagoon of Ceka increased their total catch from 453 kv in 1987 to 715 kv in 1990.

Terrestrial environment: In the northern part of the bay, the dune has been reforested, however it is impacted by erosion due to natural phenomena (sea, wind), to the over-frequentation by tourists and to the collection of fuelwood. The area is characterized by traditional farming. The natural vegetation is mainly composed of sub Mediterranean xeric broadleaves forest *Orno-Ostryetalia* (World Bank and Government of Albania, 1992 c). The coastal vegetation is made of associations of mediterranean *Ageopyretum* characterized by: *Elymus farctus, Cyperus capitatus, Sporobolus pungeus, Otanpthus maritimus, Motubiola tricuspidata* and *Calystegia soldanella*. There are also associations of *Ammophiletum arundinaceae (Ammophila arenari, Medicago marina, Echinophora spinosa), Sporoboletum (Sporobolus pungeus), Salicornictum fructicosae* associations *(Arthrocnemetum fructicosum), Arthrocnemetum glauci* associations *(Arthrocnemetum glaucum), Salicornictum radicentis* associations *(Arthtrocnemetum perenne), Juncetum maritimi* associations *(Juncus maritimus),Limonietus* associations (*Limonium vulgare*), *Juncetum acuti* associations *(Juncus acutus), Schoeneto-Plataginetum crassifoliae* associations *(Schoerus nigricans, Plantago crassifolia, Saccharum ravennae)* and *Holoschoerretum romani* associations characterized by *Scirpus holoschoenus* (Mullaj, 1989). In the southern part, in Merxhani lagoon, the Kune seasonal hunting refuge of about 800 ha, there is a healthy coastal forest composed of different species (ash, elder, white poplar,

tamarix, pines, acacias, elms...) combined with a large quantity of diverse shrubs, herbaceous plants and reedbeds. The graminaceous grass and marshland vegetation is composed of: *Salicornia fructicosa, Salicornia herbacea, Juncus acutus, Typha latifolia, Phragmites communis.* The original vegetation on the dunes is characterized by psamophilous associations of: *Caxile maritima* and *Xanthium strumerium* (Mullaj, 1989). This restricted area shelters numerous animals and is an important area for birds (partridges, pheasants, woodpeckers...) and migratory waterfowl (large flocks of ducks and geese) joined to those living in the lagoon of Merxhani (herons, egrets ...). The hunted species are *Anas platyrhynchos, A. crecca, A. qurquedula, Phasianus colchicus.*

Human activities: Human settlements are based in Shëngjini and Lezha; the urban population of Lezha is in the range of 20,000-50,000 inhabitants; the rural population is relatively high by 100-200 inhabitants/km^2 (World Bank and the Government of Albania, 1992 a). Shëngjini has a small fishing harbor and is an active military base. Fisheries are relatively important (fish in the lagoon and at sea, lamellibranchs in the sea). Heavy industry plants near the lagoon, impact the environment for they are located in the district's catchment basin.

Main issues: There is erosion on the coastline, several constructions are threatened by the attacks of the sea; soil erosion occurs on the steep hills behind the coastline (Pergent, 1992). The paper factory in Lezha may reopen; pollution from ammoniac, cyanide, phenol from industrial settlements has been recorded in the area; upstream, the pollution comes from copper, ammoniac and nickel (World Bank and the government of Albania, 1992 a). Factories such as copper melting plants are planned to function again soon and pollute surrounding waters if no treatment of waste is planned. Poison (pesticides) has been thrown once in river Drini, fishermen have reacted by writing to governmental authorities. Lezha and Shëngjini have a history of problems with water supply; urban sewage is flushed into Kënalla lagoon. There is iIlegal building and a road on the coast behind the dune; solid waste, cars and cattle are seen on the beach... Legal proceedings from the Albanian State run against the people living close to Kune lagoon who want to be in charge of the allocation and the management of the area (Pergent, 1992). Overhunting in the Kune reserve led to a drastic collapse of the formerly rich and diversified waterbird colonies. The number of hunters and the seasons are not respected anymore. Protected species are also hunted. Facilities for park guards are required. Foreign associations have recently bought hunting licenses and are responsible for the drop of the bird population especially for *Anas penelope* and Chardriiforms (Vangeluwe et al., 1994). Overgrazing of the area is made by sheep, cows and goats. Since 1966, the quality of the *Tamarix* thickets decreased due to the salinization of the marshes thus degrading the habitat of Pelecaniformes and Ciconiiformes populations. The banks (often old *Populus alba*) which are an optimal habitat for pelicans and Ardeids are deforested. Water circulation should be improved by widening and creating irrigation canals; agriculture should be integrated in the shooting reserve (Pergent, 1992). Illegal fishing is reported (2 square nets on three are illegal) as well as dynamite fishing thus overfishing especially since 1992. There is no control on the number of fishermen.

Potentialities: This biogeographic unit is suitable for eco-touristic activities, a Nature Reserve (woodland and wetland); Wetlands are very important in coastal dynamics, as habitat for wintering waterfowl and as a nursery area for numerous commercially important fishes; the wetlands of this area are classed as priority areas for wetland conservation. Historical remains from Antiquity (Nympheum and ruins of Ilirian and roman periods) and a medieval fort in Lezha (close to ancient Lissus) with the grave of Skanderbeg are touristically very attractive. Kune is a scientific reserve covering 850 ha characterized by a good quality of environment, artesian wells, good recreation. It has a touristic potential with its parking, bar with tables under the trees, restricted access, pheasant rearing and seasonal hunting.

C. Name of the area: Vain Reserve within the zone from Drini river mouth to Mati river mouth

Location: This area is part of the District of Lezhe. The length of coastline is about 12 km.

Physical features: This area, directed north-south and slightly curved to the east in the middle, is the junction of Drini and Mati rivermouths. The coastal plain extends on about 8 km in the northern part upto Lezha and 10 km in the southern part upto the city of Miloti. The shore is composed of fine sand with a little fringe of vegetation. The only remaining lagoon is of Ceka; in its NW portion is managed the natural reserve of Vain which is also a seasonal hunting refuge.

Geology: the area comprises only recent alluviums brought by the two rivers. Inland, one can find a cretaceous substratum.

Marine environment: marine sediments are composed of fine sand. Among macrophyte algae species, *Fucus virsoides*, an Adriatic endemic mainly concentrated in upper Adriatic can be found in the area (Kashta, 1992). *Posidonia oceanica* meadows are reduced because of industrial waste discharged in the waters. For the same reason, the *Penaeus kerathurus* population is reduced. Fishing activities are developed on the coast; trawlers from Shëngjini are active in the area. Small fishing boats exploit shallow waters, while along the coast local people collect Lamellibranchs. A monk seal has supposedly been reported in spring (heard but not seen). The crustacean decapods sampled in the area are the following: *Gennadas elegans, Solenocera membranacea, Penaeus trisulcatus, Sicyonia carinata, Sergestes arcticus, Lucifer typus, Plesionika heterocarpus, Lysmata seticaudata, Alpheus ruber, Athanas nitescens, Processa canaliculata, P. edulis, Palaemon serratus, Crangon crangon, Pontophilus spinosus, Philoceras spinosus, P. bispinosus, Pontocaris cataphracta, Nephrops norvegicus, Scyllarus arctus, Jaxea nocturna, Callianassa subterranea, Upogebia pusilla, Paguristes eremita, Dardanus arrosor, Anapagurus chiroacanthus, Pagurus excavatus, E. prideauxi, Galathea intermedia, G. nexa, G. strigosa, Munida rugosa, Pisidia longimana, Dromia personata, Ethusa mascarone, Medorippe lanata, Calappa granulata, Ebalia cranchii, E. tuberosa, Ilia nucleus, Carcinus aestuarii, Liocarcinus depurator, L. vernalis, Pilumnus spinifer, Pinnotheres pisum, Goneplax rhomboides, Parthenope angulifrons, Maja squinado, Lissa chiragra, Inachus communissimus, I. dorsettensis, Macropodia rostrata* (Vaso and Gjiknuri, 1993).

Wetland environment: the lagoon of Ceka has vegetation similar to the lagoon of Merxhani. More than half of the water surface is covered by flooded *Phragmites communis* beds with *Thypha latifolia*, the banks are composed of sedge communities, riparian woods of black alder galleries with *Alnus glutinopsa, Populus alba, Ulmus campestris, Fraxinus angustifolia, Salix alba* and *Quercus sp.* which are replaced over time by pine plantations. Maquis is composed mainly of: *Tamarix parviflora, Cornus mass, Juniperus macrocarpa, Rubus ulmifolium, Ruscus aculeatus;* the herbaceous vegetation of the marshland is characterized by *Cynadon dactylon, Dactylis glomerata, Agrostis sp., Phragmites communis, Juncus acutus, Salicornia fructicosa*... (Peja et al., 1993; Pergent, 1992).
This lagoon hosts the following algae associations: *Zostera noltii, Cymodocea nodosa, Ulva rigida*.. In the lagoons enclosing *Phragmitetum communis*, the hallophyte associations are: *Salicornietum europeae, S. radicantis, S. fructicosae, Arthrocnenum glauci, Sporoboletum, Annophiletum arundinaceae, Juncetum maritimi, J. acuti, Holoscoenetum romani, Schoenetum, Plantaginetum crassifoliae, Tamaricetum dalmaticae*.. The waterfowl species observed in the lagoons are: *Phalocrocorax carbo sinensis, Nycticorax nycticorax, Egretta garzetta, E. alba, Platalea leucoradia, Ardea cinerea, Plegadis falcinellus, Anas querquedula, A. clypeata, A. acuta, A. platyrhynchos, A. crecca, A. penelope, Anser anser, A. fabalis, Milvus migrans, Alectoris graeca, Aythya ferina, A. fuligula, Ixobrychus minutus, Ardeola ralloides, Somateria mollissima, Bucephala clanga, Mergus serrator, Circus aeruginosus, C. pygargus, Accipiter nisus, Rallus aquaticus, Haematopus ostralegus, Himantopus himantopus, Charadrius dubius, C. alexandrinus, C. hiaticula, Calidris ferruginea, C. minuta, Philomachus pugnax, Limosa limosa, Tringa totanus, T. erythropus, T. glareola, Arenaria interpres, Larus argentatus, L. ridibundus, L. cachinnans, Sterna hirundo, S. albifrons, Chlidonias niger, C. leucopterus, Streptopelia turtur, Otus scops, Uppupa eppos, Hirundo daurica, Alcedo atthis, Merops apiaster, Fulica atra, Pluviali squatarola, Gallinago gallinago, Numenius arquata, Tringa totanus, Acrocephalus arundinaceus, Gallinula chloropus, Hippolais pallida, Remiz pendulinus, Corvus corax, Pernis apivorus, Buteo buteo, Falco vespertinus, Sturnus roseus* and rarely

Pelecanus crispus (Pergent, 1992; Vangeluwe et al., 1994). These lagoons are a potential habitat for the very rare curlews *Numenius tenuirostris* (Vangeluwe et al., 1994). The species hunted in the Vain seasonal hunting refuge are *Anas platyrhynchos, A. crecca, A. qurquedula, Phasianus colchicus.* Other animals can be found in the area: *Mustela nivalis, M. putorius* and *Vulpes vulpes*. The fishes living in this area are: *Mugilidae, Sparidae, Morone labrax, Anguilla anguilla* and crabs *Carcinus aestuarii* into the lagoon and *Trachurus trachurus, Umbrina cirrosa, Arnaglosus imperialis, Lichia aria, Squatina squatina, Boops boops, Sardina sardina* along the coast. The professional fishermen of the lagoon of Ceka increased their total catch from 453 kv in 1987 to 715 kv in 1990.

Terrestrial environment: the Vain hunting refuge which is recently drastically reduced (from 1100ha) to 30 ha. The natural vegetation is composed of a sub Mediterranean xeric broadleaves forest *Orno-Ostryetalia* (World Bank and Government of Albania, 1992 c), alders, *Populus alba, Salix alba* and *Quercus sp.* if not replaced by pines. The coastal vegetation is made of associations of mediterranean *Ageopyretum* characterized by: *Elymus farctus, Cyperus capitatus, Sporobolus pungeus, Otanpthus maritimus, Motubiola tricuspidata* and*Calystegia soldanella*. There are also associations of *Ammophiletum arundinaceae (Ammophila arenari, Medicago marina, Echinophora spinosa), Sporoboletum (Sporobolus pungeus), Salicornictum fructicosae (Arthrocnemetum fructicosum), Arthrocnemetum glauci, Salicornictum radicentis (Arthtrocnemetum perenne), Juncetum maritimi (Juncus maritimus), Limonietus* (*Limonium vulgare), Juncetum acuti (Juncus acutus), Schoeneto-Plataginetum crassifoliae (Schoerus nigricans, Plantago crassifolia, Saccharum ravennae)* and *Holoschoerretum romani* associations characterized by *Scirpus holoschoenus*. The original vegetation on the dunes is characterized by psamophilous associations of: *Caxile maritima, Xanthium strumerium* (Mullaj, 1989). See Wetland section for more information.

Human activities: There are some small settlements such as Rrila and Talja. The rural population is relatively high with 100-200 inhabitants/km^2 (World Bank and the Government of Albania, 1992 a). The reclaimed plain in the area is farmed. Heavy industry plants in the area are: a copper refinement plant and a phosphate production plant (World Bank and the government of Albania, 1992 a). The phosphate factory at Lezha is closed, therefore Drin waters are not as heavily polluted as before. Recently, the sulphuric acid factory has reopened. There are artesian wells in the area. The access to the shore is only possible by trail. Fisheries and hunting activities take place in Ceka lagoon and its surroundings. Extensive rearing and traditional forms of fishing are planned in the lagoon (Flloko, pers. comm.).

Main issues: Effluents of the paper factory (although its activity has slackened) and urban sewage of Lezha are directly flushed into Drini river. The basin catchment is polluted from ammoniac, arsenic, lead, fluorine, copper and selenium (World Bank and the Government of Albania, 1992 a). Water circulation should be improved in the lagoon (Pergent, 1992). The channels connecting with the sea are closed, thus generating changes in the lagoon and in fish production. There is no control on the number of fishermen. Illegal fishing is reported (2 square nets on three are illegal) thus overfishing occurs especially since 1992. Poison (pesticides) has been thrown once in river Drini, fishermen have reacted by writing to governmental authorities. The quota of hunters and the hunting seasons are not respected anymore. Protected species are also hunted. Foreign associations have bought recently hunting licences and are responsible for the drastic collapse of the bird population especially for *Anas penelope* and Chardriiforms (Vangeluwe et al., 1994). Overgrazing by sheep, cows and goats is reported. The banks (often old *Populus alba*), an optimal habitat for pelicans and Ardeids are mostly deforested.

Potentialities: This biogeographic unit could include a Nature reserve and is favorable to aquaculture; Ceka lagoon is an environmental sensitive area. Fisheries should be encouraged and managed.

D. Name of the area: Fushe-Kuqe Patok in Rodoni bay

Location: Rodoni bay starts north from the mouth of Drini river and ends south at the basis of Rodoni cape. The coastline is about 8 km long. The northern part (6 km) of the area is located in the District of Laçi and the southern part (2 km) in the District of Durrësi. Fushe Kuqe zone is the most important basin concerning the ground water resources.

Physical features: This part of the coastline is sandy, with numerous signs of erosion and frequent changes in the position of the coastline. Patoku lagoon seems to be endangered since the dune shoreline has locally disappeared. However southwards a fresh offshore sand bank (1 km long and 500 m large) is protruding from the river mouth parallel to the coast. The dynamism of the Mati river mouth (often caused by anthropogenic activities) is pictured on the last topographical maps and is partly the cause of changes in the lagoon, however our hypothesis is that the line of recently submerged bunkers has been another cause of the remodeling of the lagoon which is presently in extension. This is an interesting prospect for the recycling of the tremendous quantity of bunkers to discard. The Ishëm river mouth is a brackish area of salt marshes, lagoons and sand beaches separated from the sea by a sand bar. In shore, salt marsh extend for 2 km, the plain is then reclaimed and extends on about 8 km in the north up to Laçi and 10 km south up to Mamurasi.

Geology: the area encloses only recent sediments brought by Mati River from mountainous catchments and characterized by alluvium of rivers (53,250,000 ton/year) and by ophiolithic sands and shingles (World Bank and Government of Albania, 1992 c).

Wetland environment: The lagoon of Patoku covers 480 ha and is separated in two parts by a dyke on which is built a road. The northern portion "Patok I vjeter" resembles more a gulf more or less closed by a sand bar and is presently sedimentating. The southern part is artificially communicating with the sea. The recent offshore sand bank of alluvial deposits is exceptionally rich in terms of biomass and hosts a great number of waders. The basin catchment covers 800 ha among which 450 ha are farmed lands and 200 ha forests. Eastwards lies the forest of Fushë Kuqe, a seasonal hunting reserve (Peja et al., 1993).
The halophyte vegetation of the lagoon of Patoku encompasses the following associations: *Cacilo-Xanthietum italici, Salicornietum europeae, S. radicantis, S. fructicosae, Arthrocnenum glauci, Agropyretum mediterraneum, Juncetum maritini, J. acuti, Scirpetum maritini* and *Phragmitetum communis*. The algae found in the lagoon are mainly *Zostera noltii*. The crustacean decapods sampled in the area are the following: *Gennadas elegans, Solenocera membranacea, Penaeus trisulcatus, Sicyonia carinata, Sergestes arcticus, Lucifer typus, Plesionika heterocarpus, Lysmata seticaudata, Alpheus ruber, Athanas nitescens, Processa canaliculata, P. edulis, Palaemon serratus, Crangon crangon, Pontophilus spinosus, Philoceras spinosus, P. bispinosus, Pontocaris cataphracta, Nephrops norvegicus, Scyllarus arctus, Jaxea nocturna, Callianassa subterranea, Upogebia pusilla, Paguristes eremita, Dardanus arrosor, Anapagurus chiroacanthus, Pagurus excavatus, E. prideauxi, Galathea intermedia, G. nexa, G. strigosa, Munida rugosa, Pisidia longimana, Dromia personata, Ethusa mascarone, Medorippe lanata, Calappa granulata, Ebalia cranchii, E. tuberosa, Ilia nucleus, Carcinus aestuarii, Liocarcinus depurator, L. vernalis, Pilumnus spinifer, Pinnotheres pisum, Goneplax rhomboides, Parthenope angulifrons, Maja squinado, Lissa chiragra, Inachus communissimus, I. dorsettensis, Macropodia rostrata* (Vaso and Gjiknuri, 1993). The fish caught in the lagoon are: *Mugil cephalus, Lisa ramada, L. saliens,* (most important production, 602 T in 1988), *Morone labrax, Arnaglosus laterna, A. imperialis* . The following fishes are found along the seacoast: *Dasyatis pastinaca, Squatina squatina, Torpedo marmorata, Diplodus annularis, Sparus sparus, Trachurus trachurus, Lichia ania, Mullus barbutus* and *Aphanius fasciatus*. The total production decreased from 705 T in 1988 to 571 T in 1989. The high biodiversity of the saltmarshes in this area represents a reservoir for migratory waterfowl and waders. Herons, pelicans and comorants have been seen. The waterfowl observed in the lagoon is composed of: *Phalocrocorax carbo sinensis, P. pygmeus,* little egrets *Egretta garzetta, E. alba, Trachybaptus ruficollis, Podiceps cristatus, P. nigricollis, Pelecanus crispus,* grey herons *Ardea cinerea,* purple herons *A. purpurea, Platalea leucoradia,* greylag geese *Anser anser, Tadorna tadorna,* gadwalls *Anas strepera,* shovellers *A. clypeata,* pintails *A. acuta, A. platyrhynchus,* teals *A. crecca, A. penelope, A. querquedula, Aythya ferina, Somateria mollissima, Bucephala clanga, Mergus serrator,*

marsh harriers *Circus aeruginosus, C. pygargus, C. macrorus, Aquila clanga, Falco biarmicus, F. vespertinus, Rallus aquaticus, Gallinula chloropus, Fulica atra,* oystercatchers *Haematopus ostralegus, Himantopus himantopus, Recurvirostra avosetta, Charadrius hiaticula, C. dubius, C. alexandrinus, Pluvialis alexandrinus, P. squatarola, Vanellus vanellus, Calidris ferruginea, C. minuta, C. canutus, C. alpina, Gallinago gallinago, Limosa limosa,* curlews *Numenius tenuirostris, N. arquata,* redshanks *Tringa totanus, T. erythropus,* greenshanks*T. nebularia, Larus canus,* black-headed gulls *L. ridibundus,* herring gulls *L. argentatus, L. cachinnans, Gelochelidon nilotica, Sterna caspia, Sterna hirundo,* little terns *S. albifrons, S. sandvicensis, Alcedo atthis,* little owls *Athene noctua, Philomachus pugnax,* common sandpipers *Actitis hypoleucos, Chlidonias niger, C. leucopterus, Streptopelia turtur, Acrocephalus arundinaceus,* caspian terns *Hydroprogne tschegrava,* grey-headed woodpeckers *Picus canus,* great spotted woodpeckers *Dendrocopos major,* red-rumped swallows *Hirundo daurica* (Crockford and Sutherland, 1991; Vangeluwe and Beudels, 1992; Vangeluwe et al., 1994). Fox and marten have also been reported in Fushe Kuqe Reserve.

Terrestrial environment: Fushë Kuqe is a natural reserve and seasonal hunting reserve (presently 800 hectares), mainly composed of *Alnus glutinosa*, *Populus alba,* ash, elder, willow, oak and replanted *Pinus halepensis*. It has been reduced (4200 ha) by the drainage of the area. During the winter the sandy areas and the grassland are inundated and are an optimal habitat for migratory waterfowl. The coastal vegetation is made of associations of mediterranean *Ageopyretum* characterized by: *Elymus farctus, Cyperus capitatus, Sporobolus pungeus, Otanpthus maritimus, Motubiola tricuspidata* and *Calystegia soldanella*. There are also associations of *Salicornictum fructicosae (Arthrocnemetum fructicosum), Arthrocnemetum glauci, Salicornictum radicentis (Arthtrocnemetum perenne), S. europacea (Salicornia europaea), Juncetum maritimi (Juncus maritimus), Limonietus* (*Limonium vulgare*), *Juncetum acuti (Juncus acutus)* and *Schoeneto-Plataginetum crassifoliae* associations *(Schoerus nigricans, Plantago crassifolia, Saccharum ravennae)*. The original vegetation on the dunes is characterized by psamophilous associations of: *Caxile maritima, Xanthium strumerium* (Mullaj, 1989).

Human activities: Rural population is relatively scattered with an average of 50 inhabitants/km^2 (World Bank and the government of Albania, 1992 a). The reclaimed land is farmed. There is an access to the shore by road. Artesian wells are localized. Fisheries are relatively important; traditional forms of fishing are planned in the lagoon (Flloko, pers. comm.). Touristic accommodation in Fushe Kuqe Reserve needs to be renovated to function again; a restaurant is operative and relatively busy in season. In the area there is a hunting reserve with pheasant rearing.
Main issues: Increasing deforestation (especially riverbanks composed mainly of alders), overgrazing and wood exploitation completely destroyed Mati estuary alluvial forest and reduced Fushe-Kushe forest to a few dozen ha. Erosion due to river regulation, riparian deforestation, sediment extraction and marine activity cause in some places alluvial spits. The recent intensification of land reclamation destroyed 3/4 of the surface of the reserve. Agriculture (pesticides) and sewage is drained by Mati and Ishmi rivers. Illegal hunting and overhunting are reported as well as dynamite fishing, overfishing by nets. Foreign (italian) trawlers have been observed working intensively along offshore sandbanks (Vangeluwe et al., 1994). Increasing local touristic pressure on the offshore sandbank and the lagoons impact the environment and the resources. Disturbance cause the disappearance of the colony of *Pelecanus crispus* settled in Cabok island, the second and the only other colony settled in Albania apart from the one in the Karavasta area (Vangeluwe and Beudels, 1992; Vangeluwe et al., 1994).
Potentialities: This biogeographic unit is suitable for touristic activities and a Nature Reserve (woodland and wetland). Patoku lagoon is a very important migratory resting area for siberian waders. The presence of curlews *Numenius tenuirostris* and of pelicans *Pelecanus crispus* make it an international priority area in wetland conservation (Vangeluwe et al., 1994). The now threatened albanian *Pelecanus crispus* which had an important percentage of the world's population in the 1950's declined drastically in the 1980's (only 11 couples have been discovered in 1985).

ANNEX 3: VULNERABILITY ASSESSMENT OF NATURAL ECOSYSTEMS TO EXPECTED CLIMATE CHANGE

(Extracted from vulnerability and adaptation studies prepared under the First National Communication project)

Chapter III

3.4. Natural ecosystems

129. There is a growing scientific consensus that climate change could present a major threat to biodiversity at both the species and the ecosystem levels (Jeftic et al., 1996). Many ecosystems are already threatened by human activities such as pollution, increasing resource demands, and nonsustainable management practices. The climate change represents an important additional stress. Species will be more vulnerable, and even where they are able to tolerate climate change, they could face new competitors, predators, diseases, and alien species for which they have no natural defense.

130. The outputs of CCSA suggest that sea level rise is expected to increase 20-24 cm by 2050 and 48-61 cm by 2100. An increase in annual temperature up to 1,8° C and decrease in precipitation to –6,1% by 2050 and up to 3,6°C and –12,5% by 2100 related to 1990 is expected too.

131. It is to be pointed out that the vulnerability assessment on ecosystems in Albania is hampered by a lack of detailed knowledge of the climatic limitations of present communities and individual species.

3.4.1. Marine and coastal ecosystems

132. The increase in air temperature will cause an increase in the seawater temperature and nevertheless will affect a variety of marine species including fish. Most of marine species depend very much on the health of seagrass meadows (especially those of Posidonia oceanica and Cymodocea nodosa). Sea grasses are already under threat from various anthropogenic factors such as pollution and trawling. An increase in sea surface temperature in unlikely to have a direct, negative effect since most sea grasses, including Posidonia and Cymodocea, are somewhat thermophilic. However, thermophilic algae and perhaps other sea grasses may actively compete with native species.

133. The increase in temperature may favor the diffusion of warm water species migrating in from the Red Sea via the Suez Canal. One migrant sea grass (via the Suez Canal), Halophila stipulacea has already become established in some parts of the Albanian Ionian Coast. This, however, is unlikely to pose a threat to Posidonia meadows since it is established in a different niche, which is not sensitive from the fisheries point of view.

134. It is expected that salinity fluctuations in shallow areas as well as the introduction of greater sediment loads and enhanced turbidity may limit the range of sublittoral and benthic species in such environments.

135. The sea level rise of 24 cm by 2050 and of 61 cm by 2100 predicted by CCSA will result in the gradual inundation of low-lying coastal areas. The natural communities associated with such areas are expected to move inland. However, certain communities including existing coastal dunes, saline marshlands and wetlands are likely to reduce their surfaces and, although new dunes, marshlands and wetlands may gradually form elsewhere. Vulnerable areas include the north and south of Mati delta (Patok), the north of Erzeni delta, in the old of Semani delta, the area between Semani and Vjosa rivers and the south of Vjosa delta. An increase in sea level may also be expected in the Ceka lagoon and the formation of new lagoon is expected in the Mati delta.

136. All these areas support a number of rare, threatened plants and animals and their loss will be highly significant to the entire biodiversity as well as to the scientific and cultural heritage.

137. One major impact of the predicted climatic changes on the coastal environment will be the increased erosion and possible loss of coastal sandy dunes. Inland migration of sandy dunes will take place only in

those cases where sedimentary flux and replenishment have not been reduced by inland construction (e.g., roads, buildings or pine forests in Divjaka, Pishe-Poro, Kune etc.). There are indications (total absence of such species as Ammophila arenaria, Elymus farctus etc.) that erosion processes (Kripore e Kavajes, Patok etc.) presently affect a number of sandy dunes. Taking all these points into consideration, it may be assumed that the extreme climatic changes suggested by CCSA will negatively affect the sand dunes ecosystems, leading to a reduction in their surface by 2100.

138. While increased air temperatures may lead to increased plant productivity in sand dune and salt marsh communities, increased intrusion of seawater brought about by a rise in sea level may reduce the number of species that are less tolerant to elevated salinities (mostly, species of the class Ammophiletea).

139. Sea level rise 48-61 cm by 2100 will profoundly influence coastal natural wetland ecosystems leading to their disruption through inundation and saltwater intrusion. Typically a regionalization of different vegetation types occurs as one moves from greater to lesser tidal influence zones and from saline to freshwater situations. Karavasta and Narta Lagoons are expected to have better communications with sea in the future. This will change the present ecosystems, gradually to a complet saline ecosystem. Changes in these wetland areas on favour of halophilic vegetation will also affect many bird species through loss of nesting, breeding, staging and wintering habitat (Demiraj et al.,1996).

140. A sea level rise of 61 cm would result in direct flooding of a large surface around Rrushkulli and a new saltmarsh will be formed in this area not flooded previously. In saltmarshes (Kune-Vain, Patok, Rrushkull, Karavasta, Narta and Butrinti), vegetation will be directly affected by more frequent and longer submersion. Most saltmarsh birds nest on the ground and thus will be vulnerable to flooding. Many species feed on intertidal mudflats, where water levels affect the availability of food.

3.4.2. Freshwater ecosystems

141. The sea level rise of 61 cm will presumably cause significant changes to river estuaries. A large part of the estuaries will be flooded. Seawater will penetrate deep into the rivers of Mati, Erzeni, Shkumbini, Semani, Vjosa etc. and the saltwater wedge can be expected to intrude along the riverbed to around 500-1000m further inland. Future trends would be towards the further restriction of hydrophilic species such as Salix sp., Phragmites australis and increase in favour of halophilic species such as Arthrocnemum sp.,Salicornia sp., Inula crithmoides etc.

142. Sea level rise will impair estuarine water quality in other subtle ways, contributing to the degradation of in situ conditions for aquatic biota (e.g. increased temperature results in lower dissolved oxygen) and increasing the health risks of the populations dependent on withdrawals of fresh water from the rivers.

3.4.3 Terrestrial ecosystems

143. Taking into account only the fact (increase in temperature up to 3,6° and decrease in precipitation to –12,5% by 2100 related to 1990) that higher temperatures will increase evapotranspiration and induce soil changes, it is expected that the existing terrestrial ecosystems will be affected in the following ways:

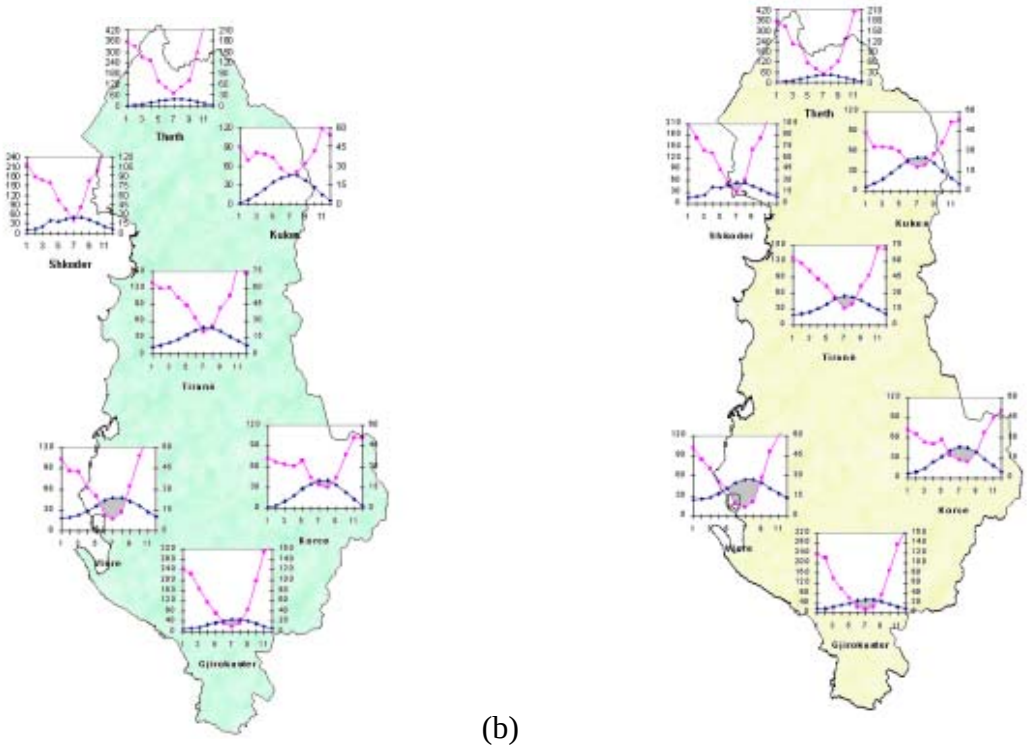
144. The plants are expected to adapt to new environmental conditions, and some dominant species may disappear or become less important. There is likely to be an altitude shift in vegetation such that the plants of the plains will extend their altitude range into the hill areas and foothill plants will extend further into the mountains. Some of the present plant species of higher elevations may not be able to withstand higher temperature ranges and may disappear.

145. Figure 3.4.1 represents the climatic diagrams for some regions in Albania for the present time (1961-90) and by 2100. It is obviously the increase in the vegetation period (with temperatures ≥10°C), (an earlier vegetation period) and an extension in the vegetation dormance (the area within precipitation and temperature

curves) during summer. Concretely, for the Tirana region the actual vegetation period starts c. about 15 March and finishes c. 25 November. The interruption of the vegetation period by 2100 is expected to be c. 20 days (1÷20 January). As for the dormance period is concerned, an extension, from 5 July up to 25 August, is expected.

146. The natural terrestrial ecosystems are likely to be impacted more by changes in the frequency of extreme events that may become more frequent.

147.



(a) (b)

Fig. 3.4.1 Bioclimatic diagrams (a) present time, 1961-90; (b) expected changes by 2100

148. In the lowlands, a succession from maquis to phryganic ecosystems would occurr, without human interference.

149. In contrast, a temperature increase will favour species with a subtropical affinity and a considerable increase in thermophilic species such as Euphorbia dendroides in lowlands etc. Actually, the alliance Oleo-Ceratonion (dominated by Euphorbia dendroides, Olea oleaster,etc.) is distributed from Saranda up to Vlora district, mostly in coastal region, in the climatic limitations 16-18°C. The increase in average annual temperature up to 3,6°C by 2100 will cause a succession of this alliance till the Shkodra district (average annual temperature 18,7°C by 2100).

150. A temperature increase, will favour the invasion of authoctonous vegetation by naturalized species such as Dittrichia viscosa (very common specie in the abondonated fields), Acacia sp., Agave americana (Cuke,Sarande and sand dunes of Vlora Bay), Eucalyptus sp.,etcas well.

151. An increase in soil erosion (caused by a greater frequency of storms and heavy rains with consequent loss of plant and associated animal life may be expected.

152. Since surface areas around mountain peaks are smaller than bases, the species are expected to shift upward in response to warming, they are likely to occupy smaller and smaller areas, have smaller populations, and may thus become more vulnerable to genetic and environmental pressures. Species originally situated near mountain tops might have no habitat to move up to, and may be entirely replaced by the relatively thermophilous species moving up from below. So, Wulfenia baldaccii, an endemic specie distributed in the Shtegu i Dhenve (Albanian Alps, 1700 m a. s. l.), and Leontopodium alpinum a specie with the most southern limitation distribution in Albania (Polisi Mountain, 1900m m a. s. l.), may be particularly at risk. These species are situated near mountaintops and an increase in temperature up to 3,6°C will cause a moving up about 500m from below by 2100. But, as they have no habitat to move up and likely they will be not able to adapt to climatic changes, they may disappear. Forsythia europaea, an endemic specie of Albania, mostly distributed in northern part, on serpentine rocks, by an altitude range 400-1300m and climatic limitations 7-13° C will extend their altitude range from 900m up to 1700 m a. s. l by 2100.

153. Species and ecosystems, which may be particularly at risk by the expected climate changes are:

- Geographically localized species (mostly endemic species) such as Wulfenia baldaccii in Alps of Albania (Shtegu i Dhenve). (Arbutus andrachne in the Vjosa valley, Betula alba in the Shishtavec, Picea abies in the North, etc.).
- Genetically impoverished species - specialized organisms with highly specialized niches such as sandy-dunes ecosystems, marine and freshwater ecosystems, alpine ecosystems etc.

This would suggest that their component species might not be able to survive or adapt to climatic changes because of the limited number of options available to them.

ANNEX 5: METHODOLOGY FOR VULNERABILITY ASSESSMENT

The methodology the team is going to use will be based on the APF. It is expected to comprise:

- **Gathering data, identifying data, and reviewing existing information needed for the assessment of climate threats to biodiversity in DMRD area.**

- **Identify current vulnerability:**
  - Analysis of climate variability and extremes, hazards in the area
  - Establish a climatic baseline
  - Establish environmental baseline
  - Assess vulnerability on ecosystems (both natural and managed)
  - Identify the adaptation measures already implemented (if any)

- **Assess the expected impact/vulnerabilities**
  - Update the climate change scenarios (by using the new version of MAGICC/SCENGEN or another upgraded version that might be provided) to assess the climate trends or, if possible, regional scenarios (finer resolution) like PRECIS
  - Assess the expected impact on ecosystems (by using analogue studies, expert judgment, as well as DIVA software.

- **Elaborate adaptation measures:**
  - Establish the criteria to evaluate the adaptation measures (screening analysis, etc.);
  - Assess the adaptation measures: This will be done by using the same methodology used under the TNA. The adaptation measures will be proposed on the basis of the findings from the vulnerability assessment. The APF and its Technical Papers will be used as guidance for such study.
  - Assess the priority measures and barriers: This could involve the use of multi-criteria analysis. Criteria will be agreed upon consultations.

ANNEX 6: ASSESSMENT OF PRIORITY AREA UNDER THE VULNERABILITY AND ADAPTATION SECTION OF THE STOCKTAKING (SUMMARY EVALUATION MATRIX)

Sub-area	*Sector (subsector)*	*Scale of vulnerability*	*Relevance to national development priorities*	*Development benefits*	*Data availability*	*Sub Area Total*
Drini River Cascade	climate	+++	++	+++	+++	11
	water	+++	+++	+++	+++	12
	agriculture	++	++	++	+++	9
	energy	+++	+++	+++	+++	12
	forestry	+++	+++	+++	+++	12
	tourism	+++	++	+++	++	10
	population	+++	+	+++	++	9
	natural ecosystems	+++	+++	+++	++	11
						86
Shkumbini River Basin (8th corridor)	climate	+++	+++	+++	+++	12
	water	++	+++	+++	+++	11
	agriculture	++	++	++	+++	9
	energy	+	+++	++	++	6
	forestry	++	+++	++	+++	10
	tourism	+++	++	+++	++	10
	population	+++	++	++	++	9
	natural ecosystems	++	++	+++	++	9
						76
Durres-Kukes area / highway	climate	+	+++	+++	+++	10
	water	++	+++	++	+	8
	agriculture	+++	+++	+++	+++	12
	energy	+	++	+++	++	8
	forestry	++	+++	++	++	9
	tourism	+++	++	++	++	9
	population	+++	++	++	++	9
	natural ecosystems	++	++	++	++	8
						63

ANNEX 7: TERMS OF REFERENCE FOR KEY PROJECT PERSONNEL

Job Description for National Project Director

Duties and Responsibilities

- The (*Name of the Designated institution*) has been designated by the *Government of Albania* to oversee the national execution (*NEX*) of the UNDP-supported (*Title of the Project*) project on its behalf.
- The National Project Director *(NPD*), appointed by the *Designated institution*, is a government representative, responsible for supporting implementation of the project. The NPD serves as the focal point on the part of a *Designated institution* and as such ensures effective communication between the government and other relevant national stakeholders/actors and monitors the progress towards expected outputs and strategic results under the project.
- Specifically, the NPD's major responsibilities, in close collaboration with *UNDP CO* and the *Designated institution* are:

  - Undertake project advocacy at the policy level (high officials of the parliament, cabinet, line ministries, government agencies and other public sector institutions, civil society, private sector and the donor community) to ensure national commitment and contribution to the project objectives;
  - Undertake policy level negotiations and other activities to facilitate effective and efficient project implementation and maximize its impact;
  - Provide policy guidance to the PMU congruent with national policies, including for the selection of local consultancy, training and other specialist services;
  - In consultation with the Ministry of Finance and Economy (MOFE) and the Designated institution concerned, ensures that requisite financial allocations are contained in the national budget, in accordance with the in-kind, cash or cost-sharing budgets, and the established schedules of payment;
  - Ensures that the project document revisions requiring Government's approval are processed through the MOFE (as a Government's Coordinating Authority), in accordance with established procedures;
  - Participate in the finalization and approve the Project Annual and Quarterly Work Plans and budget, in close discussion with the UNDP, to maximize the leverage of the project resources in order to achieve the desired overall state of development and immediate objectives set out in the project document; s/he may also approve individual payments on a day-to-day basis.
  - Supervise and approve the project budget revision and NEX delivery report;
  - Review jointly with the PMU success indicators and progress benchmarks against expected project outputs so that progress can be assessed, and review and clear Annual Project Progress and Terminal Reports;
  - Conduct regular monitoring sessions with UNDP and the PMU, including Project Appraisal Committee (PAC) Meeting, Annual and Terminal Tripartite Review Meetings to measure progress made or achieved towards the project objectives, and comment on Project Review and Evaluation Reports;
  - Report regularly to the Project Steering Committee on the project progress, in conjunction with the PMU staff;
  - Assess on regular basis staff work performance in the PMU, including that of National Project Manager, Administrative & Finance Assistant and other staff;
  - Establishes close linkages with other UNDP and UN supported as well as other donor or nationally funded projects/programmes in the same sector.

Job Description for National Project Manager

The National Project Manager, under supervision of the Climate Change Programme Manager, will be responsible for achieving the outputs and, hence, objectives of the project, and ensuring the co-operation and support from the executing and implementing agent(s).

The NPM will be responsible for managing the implementation of the project, which includes personnel, subcontracts, training, equipment, administrative support and financial reporting keeping the CLIMATE CHANGE PROGRAMME MANAGER aware of all relevant factors which could impact on project implementation. The specific responsibilities of the NPM will be to:

- Set up and manage the project office, including staff facilities and services, in accordance with the project work plan;
- Prepare and update project workplans, and submit these to the Climate Change Programme Manager and DRR/P UNDP CO for clearance and ensure their implementation consistent with the provisions of the project document.
- Ensure that all agreement with designated project implementing agencies are prepared, negotiated and signed.
- With respect to external project implementing agencies:
  - ensure that they mobilize and deliver the inputs in accordance with their implementation agreement and contract, and
  - provide overall supervision and/or coordination of their work to ensure the production of the corresponding project outputs.
- Act as a principal representative of the project during review meetings, evaluations and in discussions and, hence, be responsible for preparation of review and evaluation reports such as the Annual Project Report (APR) for the consideration of the Climate Change Programme Manager.
- Ensure the timely mobilization and utilization of project personnel, subcontracts, training and equipment inputs, whether these are procured by the Executing Agent itself or by other implementing agents:
  - identify potential candidates, national and international, for posts under the project
  - prepare the ToR, in consultation with the implementing agent and subcontractors;
  - prepare training programmes (in consultation with the implementing agents) designed for staff, with particular emphasis on developing an overall training plan.
  - draw up specifications for the equipment required under the project; procure such equipment according to Government and UNDP rules and procedures governing such procurement.
- *Assume direct responsibility for managing the project budget on behalf of the Climate Change Programme Manager, ensuring that:*
  - project funds are made available when needed, and are disbursed properly;
  - accounting records and supporting documents are kept;
  - required financial reports are prepared;
  - financial operations are transparent and financial procedures/regulations for NEX projects are applied; and
  - the project is ready to stand up to audit at any time.
- Exercise overall technical and administrative oversight of the project, including supervision of national and international personnel assigned to the project.
- Report regularly to and keeps the Climate Change Programme Manager/Executing Agency and UNDP CO up-to-date on project progress and problems, if any.
- Ensure timely preparation and submission of required reports, including technical, financial, and study tour/fellowship reports;

- Perform others coordinating tasks as appropriate for the successful implementation of the project in accordance with the project document.

Responsibilities on project completion and follow-up

In order to ensure the efficient termination of project activities, the NPM will:

- Prepare a draft Terminal Report for consideration at the Terminal Tripartite Review meeting (PSC Meeting), and submits a copy of this report to the UNDP Resident Representative and designated Executing Agency's official for comments at least 12 weeks before the completion of the project;
- Make a final check of all equipment purchased under the project through a physical inventory, indicating the condition of each equipment item and its location; discusses and agrees with the UNDP and the implementing agent(s) the mode of disposition of such equipment and follow up on the exchange of letters among the UNDP, Government and implementing agent(s) on the agreed manner of disposition of project equipment; take action to implement the agreed disposition of equipment in consultation with the project parties.
- Ensure all terminal arrangements relating to project personnel are completed at the final closure of the project.

Accountability

The NPM will work under the general guidance of and report to the National Project Director. The NPM is accountable to UNDP for the manner in which he/she discharges the assigned functions.

The NPM shall discharge his/her duties in line with the rules and procedures set forth in the UNDP User Guide on Programming for Results and other project management guidelines including, where applicable, the provisions of the agreements concluded with cost-sharing donors. The NPM acts as the Certifying Officer. As such, he/she is responsible for the actions taken in the course of his/her official duties. The NPM may be held personally responsible and financially liable for the consequences of actions taken in breach of the prevailing financial rules and regulations.

General qualifications

Education:	Post-graduate level (preferable academic background)
Experience:	At least 5 years work experience in the relevant area; Demonstrated management experience and organizational capacity; Previous experience/ familiarity with UNDP (or other donors) an asset.
Skills:	Good analytical skill Good interpersonal and communication skills Good computer skill
Language:	Fluent in English

Job Description for National Technical Specialist

Project title:	Albania SPA: Adaptation of Drini –Mati
Post title:	National Technical Expert, Project Officer (PO)
Type:	Full time
Grade:	NO-A
Duty station:	Tirana, Albania

Tasks and responsibilities:

The Project Officer (PO) will work under the supervision of the Climate Change Program Manager and MSP (Medium Size Project) Project Manager and will provide crucial substantive technical, analytical and managerial support to the MSP Project Manger in the implementation process of the MSP project and report back to him/her accordingly. More specifically he/she will perform the following tasks:

- Provide technical backstopping and guidance to the MSP Project Manager and to the national team of experts in methods, approaches, tools, data etc needed for the implementation of the MSP components.
- Monitors, analyses and provides recommendations to the MSP Project Manager on the adequacy and content of the technical reports, project deliverables and on the status of the implementation of the relevant activities to be carried out for the achievement of the project outcomes/outputs.
- Provide substantive support to the MSP Project Manager in identifying and recruiting the motivated and competent staff, formulating their responsibilities as well as appraising their performance.
- Assist the Manager in formulating and developing cooperative activities with other climate change projects falling under the UNDP Climate Change Program.
- Provide substantive support in the development and monitoring of the MSP work plan as part of the Climate Change Program;
- Coordinates the development of networking and information system activities relevant to the MSP implementation and to the whole Climate Change Program work;
- Search for, collect, analyse and synthesize the necessary technical updated information on the different aspects and issues raised during the project implementation. Develop a database of the sources of the information relevant to the implementation of the MSP technical components;
- Liaise and cooperate with relevant local authorities and representatives of the programs/project under the implementation at local level (Lezha prefecture level) and work to ensure the achievement of project objectives at local ground ;
- Liaise with similar project teams (at least those implemented as SPAs), share information, lessons learnt and good practices;
- Provides substantive technical support to the consultative process, workshops, and other meetings to be organized on different aspects relevant to the MSP implementation; prepares briefing notes, background papers; makes presentations; and guide the national experts in performing their assignment;
- Participates in the planning, review and preparation of the MSP budgets and prepares related documents;
- Participates and facilitates the development of follow-up or/and other adaptation projects on relevant issues as necessary.
- Performs other duties as required.

Qualifications required:

-
- Advanced University Degree in environmental management or other field relevant to the project. Biology /natural resources related background is highly desirable.
- Minimum of 5 years of working experience in project -based and mechanisms;
- Experience and good knowledge of the climate change issues and its relations to climate change impacts and adaptation issues.
- Demonstrated ability in co-operating with stakeholders such as government officials, scientific institutions, NGOs, private sector and international financing institutions; Experience with UNDP-GEF project implementation and procedures is highly desirable;
- Strong management and interpersonal skills; and
- Very good knowledge of the English language, with exceptional writing skills

- Very good knowledge of computer software (Ms Word Excel, PowerPoint; web applications Access)
- Ability to review, prepare, present training material and make oral presentations, both in Albanian and English.

Job Description for Administrative and Finance Assistant

The Administrative and Finance Assistant will work under the direct supervision of the National Project Manager and provide assistance to project implementation in the mobilization of inputs, the organization of training activities and financial management and reporting.

Job content

The Administrative and Finance Assistant will be responsible of the following duties:

- Prepare all payment requests, financial record-keeping and preparation of financial reports required in line with NEX financial rules and procedures
- Assistance to the recruitment and procurement processes, checking the conformity with UNDP and the Government rules and procedures
- Assistance to the organization of in-country training activities, ensuring logistical arrangements
- Preparation of internal and external travel arrangements for project personnel
- Maintenance of equipment ledgers and other data base for the project
- Routine translation/interpretation during projects meetings and drafting of correspondence as required
- Act as a Petty Cash custodian
- Maintain project filing
- Other duties which may be required

Qualifications

Education:	University Degree, some training in business and/or administration desirable (finance or accounting)
Experience:	At least five years administrative experience
Skills:	Good organizational skills Good computer skills, including spread-sheets and database
Languages:	Fluent in Albanian and English

Note: Terms of reference for subcontracts will be developed during the inception phase of the project.

ANNEX 8: INCREMENTAL COST MATRIX

Benefits and Costs	Baseline	Alternative	Increment
Global benefits	Habitats of globally threatened species under threat from climate change, including variability	Sustainable development actions in the DMRD include consideration of threats to global biodiversity values from climate change	Capacity of globally significant ecological systems in the DMRD to adapt to climate change is enhanced.
National and local benefits	Local communities relying on the natural resource base are adversely affected by impacts of climate change, including variability, on ecological systems	Local communities can mainstream adaptation responses into their economic activities relying on the natural resource base	Long-term economic and ecological sustainability for local communities
Outcome I (Institutional/ community capacity building)	Study on flood issues by Institute of Hydrology 100,000 Sub total baseline 100,000	The Alternative will include the following add-on measures to build institutional and community capacities to consider and implement adaptation measures in the DMRD Updated climate change scenarios developed for DMRD Ecological vulnerability assessment methodology developed and applied Community capacities to understand climate impacts developed Sub total Alternative 489,700	UNDP 60,000 GEF 329,700 Sub total Increment 389,700
Outcome II (Mainstreaming adaptation measures)	EU-ELPA strategic env zoning plan developed (04-06) 352,386	The Alternative will include the following measures to mainstream adaptation Identification and implementation of specific adaptation response measures that can be integrated in zoning scheme	Directorate of Nature Protection 710,000

Benefits and Costs	Baseline	Alternative	Increment
	WB IWEMP (Lezha region/ Kune-Vain component) 700,000	Identification and implementation of specific adaptation response measures that can be integrated in Kune-Vain management plan being developed under this project and implementation of measures Identification and implementation of specific adaptation response measures that can be integrated in these community level activities	REC 10,000
	REC Albania's grant facility in Shengjin and Velipoja 56,633		
	WB NRDP which focuses on LD in upland watersheds of the Drini, Mati, Shkumbini and will have an impact in terms of reducing threats to BD that emanate upstream 12,000,000		
			Sub total Cofinancing 720,000
			GEF 243,500
	Sub total baseline 13,109,019	Sub total Alternative 14,072,519	Sub total Increment 963,500
Outcome III (Adaptive management, M&E, replication):	Hydromet proposal to establish an integrated monitoring system for all of Albania that comprises meteorological, hydrological and environmental (air, water quality) monitoring 2,200,000	The Alternative will ensure appropriate M&E and replication of the new targeted measures proposed by the project	MOE 30,000
			Sub total Cofinancing 30,000
			GEF 306,800
	Sub total baseline 2,200,000	Sub total Alternative 2,536,800	Sub total Increment 336,800

Benefits and Costs	Baseline	Alternative	Increment
	TOTAL BASELINE 15,409,019	TOTAL ALTERNATIVE 17,099,019	TOTAL INCREMENT 1,690,000 COFINANCING FOR OUTCOMES 810,000 COFINANCING FOR PROJECT MANAGEMENT 90,000 TOTAL COFIN 900,000 PROJECT MANAGEMENT (GEF) 95,000 TOTAL GEF 975,000

SIGNATURE PAGE

Country: Albania

UNDAF Outcome 2:	A transparent and accountable government, developing and implementing effective national policies.
Expected Outcome 2:	Policies developed and implemented that support the achievement of the MDGs.
Expected Output 2.1:	NSDI (National Strategy for Development and Integration) and other national development plans adequately reflect issues related to gender and minority equality, decentralization, environment and other issues related to MDGs.
Implementing partner:	Ministry of Environment, Forestry and Water Administration of Albania.
Other Partners:	Institute of Hydrometeorology

Programme Period:	2006- 2010
Programme Component:	MYFF Goal Fostering Democratic Governance
Project Title:	Identification and Implementation of Adaptation Response Measures in the Drini-Mati River Deltas
Project ID:	PIMS 3629
Atlas Award	00049138 (ALB10)
Project ID	00059705 (ALB10)
Project Duration:	4 years
Management Arrangement:	National Execution

Total budget:	**1,959,525 USD**
Allocated resources:	
• Government	90,000 USD
• Regular (UNDP)	60,000 USD
• Other:	
○ Donor:	975,000 USD (GEF)
• In kind contributions:	50,000 USD (GoA)
• In parallel contribution:	
○	740,000 USD (GoA)
○	44,525 USD (REC)

Agreed by Ministry of Environment, Forestry and Water Administration
Mr. Lufter XHUVELI
Minister

27.05.08

Agreed by United Nations Development Programme
Ms. Gülden Türköz-COSSLETT
UN Resident Coordinator and UNDP Resident Representative

22 May 2008