Ministério do Ambiente, Habitação e Ordenamento do Território

Direcção Geral do Ambiente

ESTRATÉGIA E PLANO DE AÇÃO NACIONAL SOBRE A BIODIVERSIDADE

2014 - 2030

gef UNEP

Technical sheet

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GEF/UNEP

This document is made available by the Directorate General for the Environment (DGA)

Project: "Review of the Biodiversity Strategy and Action Plan and Preparation of the 5th Report on the State of Biodiversity"

How to refer to this paper:

MAHOT, 2014. Estratégia Nacional e Plano de Ação para a Conservação da Biodiversidade 2015-2030. Direção Geral do Ambiente, Praia- República de Cabo Verde, Pag. 100pp

Photos provided by:

Cover: Hellio & Van Ingen

Chapters 1,3,4,5,7,8, 10: Hellio & Van Ingen

Chapter 2: Jorge Matos

Chapters 6 and 8: CVI/02/G31/A/1G/99- Integrated Participatory Ecosystem Management in and Around Protected Areas, Phase I Chapter 11: Aquiles Oliveira

Foreword (Minister /1 DGA)

ACRONYMS AND ABBREVIATIONS

AAN	Association Friends of the Nature
ADAD	Association for the Defense of the Environment and Development
ANAS	National Water and Sanitation Authority
ANMCV	National Municipal Association
PA	Protected Areas
APM	Fishermen Association of Maio
PMA	Protected Marine Areas
MAAP	Ministry of Agriculture, Environment and Fisheries
CBD	Convention Biological Diversity
DGRM	Directorate General of Marine Resources
DGP	Directorate General of Fisheries
EIS	Environmental Impact Studies
NBSPA	National Biodiversity Strategy and Plan of Action
GEF	Global Environment Fund
GEF SGP	Global Environment Fund Small Grants Programs for Civil Society Organizations
FEAP	Federation of Associations of Artisanal Fishermen of São Vicente, São Nicolau and Santo Antão
INDP	National Institute for Fisheries Development
INERF	National Institute of Agricultural Rural Engineering and Forests
INIDA	National Institute for Agriculture Research and Development (ex-INIA)
MAA	Ministry of Environment and Agriculture
MAHOT	Ministry of Environment, Housing and Land management
MDR	Ministry of Rural Development
MEA	Millennium Ecosystem Assessment
MESCI	Ministry of Education and Sports, Ministry of Higher Education, Science and Innovation Innovation
MFP	Ministry of Finances and Planning
MIEM	Ministry of Infrastructure and Maritime Economy

MORABI	Association for the Self-promotion of Women in Development
MTIE	Ministry of Tourism, Industry and Energy
OAAP	Autonomous Authority for Management of Protected Areas
OMCV	Organization of Women of Cabo Verde
NGO	Non Governmental Organization
CSO	Civil Society Organization
PANA	National Plan of Action for the Environment
GDP	Gross Domestic Product
PNMG	Natural Park of Monte Gordo
PNBCPN	Natural Park of Bordeira, Chã das Caldeiras and Pico Novo, known as Natural Park of Fogo (PNF)
NPSM	National Park of Serra Malagueta
UNDP	United Nations Development Program
PRCM	Regional Marine and Coastal Conservation Program
UNESCO	United Nations Education Science and Culture Organization
ZDTI	Integrated Tourism Development Zones

Summary

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Executive Summary

The conservation of Cabo Verde's biological diversity and the sustainable use of natural resources is everyone's responsibility. However, the State is endowed with the responsibility of guiding policies and actions relating to the safeguard of the country's natural heritage.

Thus, more than a legal obligation, this National Biodiversity Strategy and Action Plan proves to be a fundamental guide for Cabo Verde's nature and biodiversity conservation policy, and serves as a reference to society and private and civil society institutions, which should be mobilized for this purpose.

Having drafted its first Strategy in 1999, Cabo Verde already has considerable experience in implementing a biodiversity conservation policy. This has allowed to significantly strengthen both the environmental policy and the Government policy in general. Although numerous shortcomings still persist in the legal, institutional, supervisory, monitoring and scientific knowledge domains, between 2000 and 2013, the country made some progress of which, namely: the establishment of various legal instruments on conservation and sustainable use of biodiversity, the declaration of protected areas and the implementation of conservation plans for endangered species.

As a result of the implementation of the first strategy, the country operationalized three natural terrestrial parks, out of a network of 47 protected areas, thus partially achieving the goals of restoring degraded ecosystems and creating a corps of trained and functional rangers. These protected areas have contributed significantly to the restitution of vegetation coverage with endemic species threatened with extinction and to biodiversity protection through on site conservation.

The 2014-2030 National Biodiversity Strategy and Action Plan is the result of a highly participatory process, involving all sectors of society, namely: state institutions and decentralized services, municipalities, private sector and academia, and civil society organizations.

The national vision for biodiversity conservation for the next 15 years develops around three basic principles: i) effective conservation and integration of the values of biodiversity; ii) involvement and participation of society as a whole in the conservation and sustainable use of Biodiversity; iii) and fair and equitable sharing of benefits that will ensure the country's development and welfare of the population.

Cabo Verde islands have a diversity of fauna and flora that are specific to them, making them globally significant. The Earth's biodiversity consists of 3,265 species distributed among 2097 genera and 634 families. There are 62 species of fungi, 1170 species of flora (lichens, bryophytes, ferns, spermatophytes), and 2033 animal species (molluscs, arthropods, and chordates), of which 540 taxa are endemic (Arechavaleta et al 2005), and according to Cabo Verde's First Red List, 26% of angiosperms are endangered. (Leyens & Wolfram, 1996).

Though still little known, marine biodiversity is quite diversified. Marine resources sustain important activities, sometimes livelihoods, such as fishing, and its contribution is obvious not only in terms of food security, but employment generation.

The expression of marine Biodiversity is the result of the combined effect of many factors (E. Almada, 1994). Cabo Verde's ichthyofauna (fish) has been the focus of many fauna surveys and systematic studies. However this information is widely dispersed and, sometimes, contradictory. According to Reiner, 2005, quoted by the DGA, about 570 species of fish have been inventoried, of which many are common among the Macaronesia archipelagos (4th Report on Biodiversity, 2008).

Recently, a list of fish in the coastal zone of the islands of Cabo Verde (Wirtz et al.2013, Unpub. data) was presented and included 24 new entries. This list includes 315 species of fish in the coastal waters of Cabo Verde, twenty of which (6.3%) appear as endemic to the archipelago. Thirty-eight of more than 660 new species of bony and cartilaginous fish are in the IUCN Red List of globally threatened species (V. Monteiro 2012).

Marine fauna also comprises other groups of species such as corals. There are five coral species that make up the Cabo-verdean coral community (Wells, 1964; DGA, 2006-2008). Cabo Verde is considered a major hotspot for coral diversity and one of the 10 priority sites, worldwide, for the conservation of coral habitats (Moses et al 2003; Roberts et al. 2002). As for small invertebrates, there are 93 species of marine crustaceans (amphipods, copepods) and 42 species of filter-feeding bivalve *molluscs*. About 50 species of marine gastropods of the Conus genus are endemic to the archipelago.

Additionally, the entire archipelago is considered an important bird area (IBA) and the second largest nesting ground for the common turtle (*Caretta caretta*) in the North Atlantic.

In addition to its ecological importance, the terrestrial and marine biodiversity of Cabo Verde is a natural resource which should also be assessed for its economic importance, as it supports important activities such as agriculture, fishing, tourism and some industries, thus ensuring economic growth and welfare of the population.

There has been continuing decline of biodiversity in at least two of its main components - species and ecosystems:

- Many fish stocks, such as some demersal species, deep-water fish, small pelagic and crustaceans (coastal lobsters), give indication of being under strong pressure and exploited beyond their reproduction capacity;

- Over 50% of indigenous bird species are in the "Red List of Cabo Verde Birds", with some degree of threat (Lobin et al., 1996). Birds in Cabo Verde are subject to human predation for food, medicinal or purely leisure purposes;
- The degradation and destruction of beaches, dunes and coastal habitats in almost all the islands of Cabo Verde have led to the loss of biodiversity and of ecosystem services.
- *Caretta caretta* marine turtles continue to be captured for their meat and eggs, and their habitat may be at risk because of coastal tourism development, and because of this, Cabo Verde's turtle population, although plentiful, rank 8th in the world index of the 11 most endangered populations;
- Loss of native plant species due to the expansion of agricultural activities and uncontrolled extraction by the population;

This continued loss shows that the main driving forces affecting biodiversity and reducing the resilience of ecosystems remain present and intense, with serious implications for the current and future well-being of the population. The six main pressures that lead directly to the loss of national Biodiversity are:

- Overexploitation of natural resources
- Destruction of terrestrial and marine habitats
- Introduction of exotic species
- Poor organizational management and legislative enforcement
- Poor environmental knowledge and awareness
- Climate changes

This trend is attenuated or reversed in islands where there are on site conservation projects. In fact, many actions in favor of biodiversity such as, for example, reforestation in national parks with native species, the national conservation plan for marine turtles, campaigns to protect *Shearwaters in Ilhéu Raso*, the fisheries management plan, among others, have had positive results in certain areas and among species and ecosystems.

The implementation of appropriate policies and management interventions can often reverse degradation and enhance the contribution of ecosystems to human well-being. Currently, all public policy decisions are supported by economic considerations. Once biodiversity is assessed at its fair economic value, proportional to its utility, there will be increase and encouragement for its preservation.

However, pressures on Biodiversity remain and have become broader because activities such as agriculture, fishing, tourism, construction and real estate do not take biodiversity into account in their production processes and actions and, hence, do not adopt best practices. On the other hand, the lack of scientific knowledge on terrestrial Biodiversity and particularly marine Biodiversity to support better decision making, weak enforcement of regulations and laws, insufficient environmental awareness of the population, lack of coordination between the different institutions and lack of political would have also contributed to the continued loss of Cabo Verde's Biodiversity.

To cope with these pressures, the actors have set seven national priorities that show the need to focus the efforts of all stakeholders to safeguard Cabo Verde's biodiversity and, consequently, the benefits it provides for current and future generations. They are:

1. Engage the society at large in biodiversity conservation (population, public and private organizations, NGOs and associations)
2. Integrate the importance of biodiversity in strategies, plans, policies and programs of action;
3. Reduce pressures and threats on marine and terrestrial Biodiversity;
4. Conservation of priority habitats and sustainable management of natural resources;
5. Valorization and increased resilience of ecosystems;
6. Enhance knowledge, monitoring and assessment of biodiversity;
7. Mobilization of funds.

A set of measurable goals that are aligned with the strategic goals and the Aichi Targets of the 2020 Convention on Biological Diversity have been defined for each priority. In all, 15 national targets have been identified. They are:

1. By 2030, society at large will be aware of the importance and values of Biodiversity and of the measures required for its conservation and sustainable use;
2. By 2025, the ecological, economic and social values of biodiversity will have been integrated into national and local strategies and planning, and poverty reduction processes, and are duly incorporated in national accounts
3. By 2025, the government, businesses and civil society will have implemented plans and measures to ensure the sustainable production and consumption, while maintaining the impacts of use of natural resources well within safe ecological limits
4. By 2018, pollution will be reduced, its sources identified and controlled to levels that are not detrimental to the normal functioning of ecosystems
5. By 2020, marine resources of economic interest will be managed sustainably
6. By 2025, at least 20% of terrestrial areas and 5% of coastal and marine areas, especially those of ecological relevance and importance will be conserved through a coherent system of PAs and managed effectively and equitably through the implementation of Special Plans for Management of Protected Areas (SPMPA)
7. By 2025, endangered and priority marine and terrestrial species will be conserved and enhanced
8. By 2025, improve the genetic diversity of cultivated plants and domesticated animals with economic and cultural value
9. By 2025, Cabo Verde will have strengthened protection, improved connectivity and recovered key ecosystems so that they will continue to provide essential services to the economy and the welfare of the population

10. By 2018, all approved national conservation strategies and plans will integrate elements of resilience and adaptation to climate change
11. The Nagoya Protocol will have been implemented by 2015
12. By 2015, Cabo Verde will have adopted the NBSAP as an instrument of policy and will have commenced implementing it with the broad participation of all key sectors of society
13. By 2025, local communities will have full and effective participation in the implementation of conservation programs and their traditional knowledge valued
14. By 2025, scientific and empirical knowledge will contribute to the conservation of Biodiversity in Cabo Verde
15. By 2025, Cabo Verde will have mobilize the necessary financial resources to implement the strategy.

The Strategy paper is divided into 13 chapters. The first 8 chapters describe the vision, the methodology applied in preparing the document, the context of Biodiversity conservation in Cabo Verde, its general status, the main causes and consequences of its loss, the legal and institutional framework, the major initiatives of Biodiversity conservation and the implementation of the Convention for Biological Diversity on the 2010 targets.

Chapter 9 deals with national priorities and complementing goals that if well guided will contribute to reduce Biodiversity loss and enhance the resilience of ecosystems in Cabo Verde.

Chapter 10 provides details on the implementation of the Strategy and actions that should be taken to achieve the goals. These actions are indicative and while implementing the Strategy others that best contribute or strengthen the achievement of conservation goals and objectives can be selected.

Coordination of the implementation should be the responsibility of the General Directorate of the Environment with the participation of several ministries that direct or indirectly intervene in the environment.

Although at another level, the Private Sector, Municipalities, NGOs and Community Associations should also be involved. It is suggested at the level of each island the creation of a platform of

institutions and/or municipalities seeking the optimal management of natural and human resources.

Chapter 11 defines the follow-up and monitoring system of the Strategy. Implementation of the National Biodiversity Strategy and Action Plan should be assessed annually and systematically by the technical coordination team and the follow-up proposed. To allow regular necessary adjustments and ensure that established targets are achieved, the implementation of this Strategy, in its multiple axes, should be subject to a review every three years, based on a report prepared with contributions from the different sectoral ministries and other entities involved.

The periodic reviews every three years must be coordinated, where possible, with the evaluation conducted under the Convention on Biological Diversity.

The last two parts comprise the references and attachments.

Capítulo 1

Visão

1. Vision

The national vision for Biodiversity conservation in Cabo Verde is the outcome of profound reflection among representatives of key Institutions associated to Biodiversity in Cabo Verde and is expressed as follows:

In 2030, Cabo Verde will be protecting, restoring and valuing its Biodiversity, promoting its sustainable use, maximizing mechanisms of participation and appropriation of benefits in a fair and equitable manner, contributing to the development of the country.

Capítulo 2

Metodologia

2. Methodology

The methodology used to prepare the second National Biodiversity Strategy and Action Plan (NBSAP) was very participative and involved the various entities associated to the conservation and use of Biodiversity in Cape Verde. Among others, government institutions, decentralized services, municipalities, civil society organizations, research institutions, private sector also took part in the process.

The methodology used can be summarized as follows:

I. Collection and review of available documentation

II. Meetings with actors on the field and conduction of surveys

III. Preparing the diagnosis on the status, causes and consequences of Biodiversity loss

IV. Holding of regional workshops to provide feedback on the diagnosis of the causes and consequences, and identification of national priorities, goals and actions

V. Preliminary validation workshop with representatives of key institutions on priorities and targets for Biodiversity conservation in Cape Verde

VI. Drafting of the NBSAP paper

VII. National workshop to present the NBSAP and gather contributions

I. Collection and review of available documentation

- Initially, we identified and analyzed existing and available documentation related to the Cabo Verde Biodiversity (plans, strategies, programs and projects, legislative and organizational framework), though it was possible to obtain more detailed information on the state of Biodiversity conservation, policies, legislative and institutional framework, Biodiversity conservation initiatives, enhancement, the implication of the various actors, the importance, use, and the causes and consequences of biodiversity loss;

- The second step involved preparation of field work, which included developing a guide for interviews and questionnaires, and an assessment of actors associated with environmental issues;
- From 26 August to 06 October 2013, meetings were held with government institutions, decentralized state services, civil society, communities, the private sector, the academia and other stakeholders with connection to Biodiversity issues. In all, of the 238 people gathered, 23% were representatives of state agencies, 8% were representatives of municipalities, 61% representatives of NGOs and associations, 3% represented the private sector, 2% were individuals and the remainder represented other groups. The techniques used in the meetings were participatory approach and questionnaires. Three types of surveys were prepared according to the target population: 1) institutions linked to the environment, 2) private sector representatives, and 3) NGOs, associations and communities;

- The meetings focused basically on three fundamental aspects: a census of all stakeholders and partners associated to Biodiversity conservation in Cabo Verde, an assessment of documentation (reports, plans, strategies, studies, etc.) either prepared by the various actors or that were known to them, and gathering their perception on the state of Biodiversity conservation, values, existing pressures and other contributions to the diagnosis and Strategy.

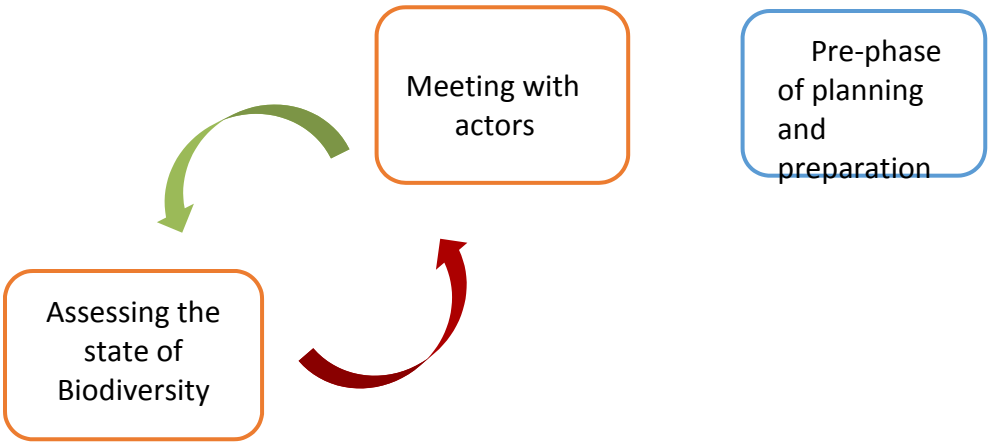
II. Preparing the diagnosis on the status, causes and consequences of Biodiversity loss

The diagnosis of the situation of biodiversity loss is a result of analysis of the literature reviewed, the interviews and field surveys conducted.

The report was presented in two thematic workshops held in Mindelo (Sao Vicente Island) and Praia (Santiago Island), grouping representatives from the Windward and Leeward islands, to socialize and collect subsidies to enrich the report.

Figure 1 summarizes the steps in this first phase of the process of drafting the National Biodiversity Strategy and National Action Plan.

Figure 1. Stages in drafting the Report on the causes and consequences of Biodiversity Loss
Biodiversity



III. Holding of regional workshops to provide feedback on the diagnosis of the causes and consequences, and identify national priorities, goals and actions

Two regional workshops were held in the city of Praia, in Santiago island, and in Mindelo, in the island of S. Vicente with the following objectives: i) collect feedback on the "Diagnosis of causes and consequences of loss biodiversity" and collect subsidies, and ii) define national priorities and targets for biodiversity conservation in Cape Verde.

The workshop held in Praia, on 20 and 21 November 2013, brought together representatives of various State institutions, civil society organizations (CSOs) and municipalities from the islands of Boa Vista, Maio, Santiago, Fogo, while the workshop in Mindelo, held on 3 and 4 December 2013, brought together representatives from the following Windward Islands: São Vicente, Santo Antão, São Nicolau and Sal.

IV. Developing national priorities and targets for biodiversity conservation in Cabo Verde

In addition to collecting contributions for the "Diagnosis of the causes and consequences of Biodiversity loss and its relationship to human well-being," the two regional workshops also served to identify national priorities, goals and actions for Biodiversity conservation adapted to Cabo Verde, according to the guidelines of the Aichi Targets.

During the two regional workshops, there were presentations of topics in plenary sessions, followed by discussions and group works, according to the themes identified and based on the methodology proposed by the CBD Secretariat for setting national priorities and targets.

To define the national vision, contributions were collected from the participants through plenary discussions.

National priorities were identified in plenary sessions and then distributed according to the CBD Strategic Objectives set in the 2011-2020 Strategic Plan on Biodiversity. The multidisciplinary work groups, which were distributed according to the strategic goals, were tasked with reassessing priorities and proposing goals and actions for the conservation and rational management of Biodiversity in Cabo Verde.

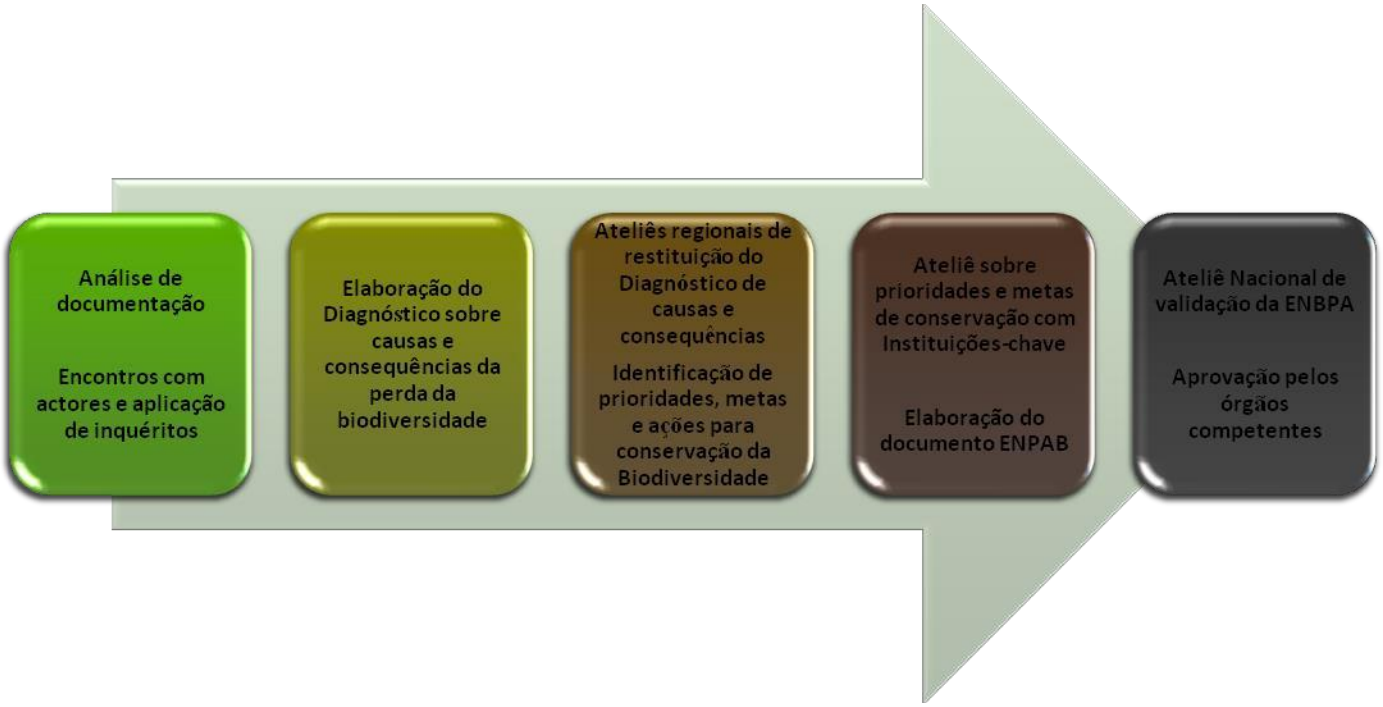
Subsidies collected during the workshops held in Praia and Mindelo were synthesized and fine-tuned by the team of consultants, who submitted the goals, priorities and actions identified to a team of technicians from the major institutions involved in Biodiversity conservation during a restricted workshop that took place on February 7, 2014.

V. Drafting the NBSAP

Based on the documentation reviewed, the subsidies gathered on the field, the report on Causes and Consequences of Biodiversity loss and the contributions gathered at the various workshops, we proceeded to draft the Second National Biodiversity Strategy and Action Plan (NBSAP II).

Once reviewed by the Directorate General for the Environment and partners, the document was presented in a national workshop to collect contributions for improvement.

Figure 2. General outline on preparing the 2014 - 2030 NBSAP



Capítulo 3

Importância da Biodiversidade

The valorization of Biodiversity in Cabo Verde is guaranteed in Articles 7 "Duties of the State" and 72 "The right of the Environment" of the Constitution and in other legal instruments. However, some practices resulting from human activities such as the use of agricultural land for urban purposes, poor agricultural practices, destructive fishing, and inadequate exploitation of forests and introduction of invasive species have contributed to the degradation of ecosystems and reduction of species and genetic material.

In this context, it is crucial that the Cabo-verdean population, especially those who partake in decision making involving the use of biological resources, be encouraged to understand and appreciate the value of Biodiversity. The ecological value and economic importance of biological resources (plants, animals, lichens, fungi, and microorganisms) have not yet been fully understood by much of the population. These life forms create and maintain the soil, recycle nutrients, play a critical role in maintaining the oxygen and carbon dioxide balance that affects climate and rainfall patterns, contribute to the pollination of plants, serve as barriers against biological soil erosion, and filter water.

These ecological services serve as a basis for sustaining the majority of economic activities, which in turn, provide human well-being through food, medication and housing, employment, recreational activities, landscape and spiritual security.

For all this, decisions regarding the country's development should reflect the ecological, economic, social and cultural values of Biodiversity. Failure in biodiversity conservation, i.e., the loss of native and / or endemic species or the degradation of their respective habitat adversely affect economic development. There is loss of potential opportunities for genetic improvement, development of agriculture and forestry production, animal husbandry, medicine production, industrial development, job creation, and leisure activities.

The latest data on extinct taxa point to 1 reptile (3.6%), 70 Coleoptera (14.9%) 6 Mollusks (12.2%) and 3 Angiosperms (1.3%) (Leyens & Lobin, 1996). Knowing that in the Coleoptera group the majority of them are known as auxiliaries in fighting enemies which affect crops, making it possible for crop production that is less polluted with pesticides and healthier for the environment, it can happen that among these 70 taxa one may lose some species with great potential for biological control of agricultural crops grown in Cabo Verde, thus eliminating a cheaper alternative to the use of some insecticides and enabling the reduction of environmental damages.

According to Aguiar-Menezes et al (2009), sustainable agriculture relies on farming practices that promote agro-biodiversity and natural biological processes. This infers that biological control is the best choice and thus, the conservation of each species should be seen from an environmental and economic perspective. Conservation can result both in a much wider range of beneficial species and in a larger population of each species, leading to improved pest control.

According to Schatz (1990) cited by Artur Campos et al (2010), it is estimated that approximately nine hundred species of angiosperms are unique or mainly pollinated by insects from the class of Coleopteras. Since the service of pollination is essential for fruit formation, it is indispensable that each species has its pollinator in order to guarantee income.

As none of the 80 taxa was subject to a biochemical study to determine the genetic potential, one cannot assess, for example, the economic loss of the *Macrocinctus coctei lizard* but can certainly asses its biological loss, since each species has a role to play in its own ecosystem.

However, there is still much more to be conserved in the Cabo-verdean Biodiversity. Artropodas with 432 endemic taxa, Angiosperms with 83 taxa, Chordata with 15 taxa and Mollusca with 10 taxa (Arechevaleta et al 2005).

In order to achieve true valorizarion of Biodiversity, one must understand that biological resources provide cross-cut support to the entire Cabo-verdean economy. These positive impacts include development of the foreign trade sector through exports, development of the industrial sector through the creation of agro-food industries, development of the tourism sector through eco-tourism activities and capital investment in the hotel industry, of the health sector with the co-participation of active ingredients (essential oils, bitter principles, acid saponin, resin, mineral salts, organic acids, vitamins, alkaloids, flavonoids, etc.) in the production of medicines, and the labor sector through employment generation. These concepts however are being worked on by DGA and the various on the field partners (NGOs) and have already borne some results.

An important indicator within the conservation policies issued by the Ministry of Environment, Housing and Land Management (MAHOT), implemented by the General Directorate of Environment (through the National Parks on ground) is the change in category of some plant and animal species. For example, *Echium hypertropicum* in 1996 was cataloged as being endangered in the islands of Santiago and Brava. Presently, after some conservation measures put in place in Santiago, the population of this species has increased considerably in the Natural Park of Serra da Malagueta (PNSM) and may change to a new category on the IUCN table, since the population is no longer threatened or endangered.

Another indicator, resulting from the same policies implemented by the National Institute of Fisheries Development (INDP) through NGOs involved in fishing, is the reduction, after some measures of environmental awareness and education, of some destructive practices with very negative impact on fishing, thus inducing new forms of behaviors on individuals and the society.

Results from surveys conducted at the national level within the process of preparing the NBSAP also indicate that the populations living around the parks recognize the importance of forests in providing environmental services and are aware of the need to preserve the basic functions of forest coverage.

However, the economic value of Biodiversity is still perceived as being almost exclusively related to the ecotourism sector that is timidly beginning to bear fruits. The development of activities such as observation of turtles, whales, birds and corals on the island of Boa Vista accounted for an estimated gross amount of 59 million Cabo-verdean escudos in the year 2012 (BIOS, 2012).

The agro-industry sector that contributes with a good percentage to GDP is not seen as a contribution of Biodiversity. Grapevine (Vitis vinifera), coffee (Coffea arabica) and sugarcane (Saccharum officinalis) are among the most important cultivated species in agro-industry and there are large numbers of species currently used as ornamental plants in landscaping.

Data from the National Statistics Institute (INE) indicate that in 2000 the export of products from food industries totaled 35,252 million Cabo-verdean escudos and from coffee it amounted to 8,700 million Cabo-verdean escudos. Exports of products in the area of maritime economy (fish, crustaceans, molluscs and other aquatic invertebrates) for the year 2000 amounted to 86,459 million Cabo-verdean escudos.

The economic use of forest products is quite limited. There are few reports of logging for marketing. There are merely some cases of selling of firewood and charcoal. However, 50% (44974.7 ha) of the national forest area is intended for production and 49.7% (44680.6 ha) for protection. In the forest composition, introduced species predominate and have a restricted area (548.5 ha) with the prevalence of more than five endemic species (National Forest Inventory of Cabo Verde, 2014).

In Planalto Leste, on the island of Santo Antao, in 1991, production yielded 270 m3 of service timber, 15,000 logs and 8,000 tons of firewood, totaling an income of 9.575 million Cabo-verdean escudos (PRSA 1991).

Studies from 2007 on the exploitation of the forest area of the Monte Gordo Park in São Nicolau estimate that with proper management an annual yield of 19.78 million Cabo-verdean escudos can be obtained (Bernasconi, 2007).

From April to December 1983, the Association of the Friends of Nature (Associação Amigos da Natureza-AAN) sold 970 million escudos in charcoal and firewood (Ponto e Vírgula, 2006). Among non-timber products, only the leaves of the plants used in the preparation of teas (Chenopodium murale, Foenicum vulgaris, Lavandula rotundifolia, Micromeria forbesii, Rosmarinus officinalis, chalepensis Ruta, gratissima Persea and Cymbopogon citratus) are commercialized regularly and have little economic expression for those who collect and extract these products from forests (Vera-Cruz, 1999).

Statistical data show that much of the employed population (23%) work in the agriculture and livestock sectors (INE, 2012); these job positions are possible thanks to Biodiversity but, however, they are not viewed as such.

Capítulo 4

Estado de conservação da Biodiversidade

4. The State of Biodiversity Conservation

Cabo Verde's biodiversity continues to be under pressure despite the conservation measures referred to in Chapter 8. This tendency is attenuated or reversed in the islands where there are on site conservation *projects*. As for the marine biodiversity, some fish species are particularly threatened by over-exploitation and / or use of destructive fishing practices.

The absence of an index, a set of indicators or data, and detailed studies to regularly monitor Biodiversity in Cabo Verde, makes it difficult to assess the real state of Biodiversity.

However, although there are still no existing tools to monitor the state of conservation of Biodiversity, while conducting on the field surveys, all partners were unanimous in stating that Biodiversity is best conserved in the islands where there are National Parks functioning.

The works to reintroduce endemic species in the Natural Parks of Serra Malagueta (Santiago), Monte Gordo (São Nicolau) and Chã das Caldeiras (Fogo) have contributed immensely to restoring the vegetation, which had been lost to degradation, due both to lack of knowledge on the importance of these biological resources and lack of subsistence alternatives, or simply due to ignorance or curiosity.

In 2011, 22,548 samples of endemic plants of six species that had been quite reduced were planted in the Natural Park of Serra Malagueta (PNSM). Species like the Dracaena draco categorized as extinct on the island of Santiago, in the Red List, was multiplied and reintroduced in significant numbers. Another specie considered threatened in the same list is the *Echium hypertropicum* that currently, at least in the island of Santiago, exists in large amounts and should be subjected to a new assessment and moved to a different category; that of Low Risk (LR).

This practice is being carried out by the managers of the Parks Monte Gordo and Chã das Caldeiras (White Paper on the State of the Environment in Cabo Verde, 2013).
Another important measure has been the removal of invasive plants, thus allowing space for the development of endemic and indigenous plants.

In the same year, 2011, two areas were restored: one of 9.78 ha in the Natural Park of Serra Malagueta (PNSM) and the other of 6.32 ha in the Natural Park of Monte Gordo (PNMG).

In parallel, the parks have played an important role in training and raising awareness of visitors and of the general population. Out of a total of 17.071 people who visited PNSM from 2007 to 2011, 3.500 were students, 1.219 were nationals and 749 foreign visitors. (PNSM Report, 2007).

As a result of the regulations associated with the National Fisheries Management Plan, in the maritime zones around Santa Lucia, São Vicente and São Nicolau one can observe an increase in the size of the black mackerel (FEAPA, 2012). This translates into valuation and increased economic benefits for operators and the population (FEAPA, 2012, INDP, 2009).
2009).

The other resource very much spoken of by the partners is the disappearance of some birds such as the Raven (Corvus ruficollis), the white bird (Neophron percnopterus, Linnaeus, 1766), the kite (Milvus migrans) and the increase of others such as the red heron (Ardea bournei), wild chicken (Numida meleagris), and the land sparrow (Passer iagonensis). The white bird, which was considered rare in recent years, has been observed with greater frequency. In the opinion of the partners, the terrestrial portion is being much better conserved than the marine one.

According to Tosco (Tosco et al, 2005) cited by the White Paper for the Environment (2014), by 2012 a total of 239 bird species, including native and migratory (41 species) species, were identified in the archipelago. Among the native species, 13 are considered endemic taxa (5 species and 8 subspecies) (Tosco, 2005). More than 50% of indigenous bird species are included in the

"Red List of Birds of Cabo Verde" with some degree of threat (Lobin et al., 1996).

However, one should highlight the improvements in the population data of some species, such as:

- The discovery of the endemic species considered endangered, Acrocephalus brevipennis, on Fogo Island (Hering & Fuchs, 2009 & Hering Hering 2005, Diniz, 2010);

- Increase in the populations of the Cabo Verde Shearwater, Calonectris edwardsii) in the islets due to initiatives by the NGO Biosfera I, that camps onsite annually, preventing fishermen conducting mass catches;
- Discovery of the Phaethon aethereus populations on the islands of Boavista, São Vicente and Sal (INIDA, 2006, 2008; Hazevoet, 2010, Fernandes, 2008);
- The rediscovery of new breeding populations of *Ardea pourpurea bournei* in various localities of São Domingos (INIDA, 2011; Rendall 2012, per com) and in the localities of Serra da Malagueta, Curral Vellho and Ribeira de Cuba (Cesarini & Furtado, 2006)
- The exponential increase in the Alauda razae population, mainly associated with improved rainfall in recent years, from 150-250 (Ratcliffe et al., 1999) to 490 individuals, in 2011 (Brooke et al. 2012).

  - 490 individuals, in 2011 (Brooke et al. 2012) 2012). The presence of the species was recorded for the first time outside Ilhéu Raso, in São Nicolau (Hazevoet, 2012).
- Also to note, records of the grey-headed kingfisher, Halcyon leucocefala, found for the first time on the island of Maio and the Lark, Alaemon alaudipes, in Santiago (Hazevoet, 2012).

Concerning the conservation of sea turtles in the archipelago, considerable work has been done in the framework of implementing the National Plan for the Conservation of Sea Turtles. According to information provided by the NGOs BIOS.CV, SOS Tartarugas and Natura 2000, in 2013 traces of the green turtle (Chelonia mydas) were recorded in the archipelago in the island of Boavista . However, in the island of Sal, this same turtle probably spawned on one of the beaches. This is something that had not occurred for several years. Of the five species that occur in Cape Verde, only the loggerhead spawns on the beaches of the archipelago.

Capítulo 5

Análise das causas e consequências da perda de Biodiversidade

5. Review of the causes and consequences of Biodiversity loss

The main threats at the root of biodiversity loss in Cape Verde were identified based on the following documents:

- White Paper on the State of the Environment in Cabo Verde (Semedo et al, 2013);
- Review and Update of the Second National Action Plan for the Environment - NAPA II (Neves et al, 2012)

- 4th Report on the State of Biodiversity in Cabo Verde (DGA, 2009)
- *Invasive Plant Management Strategy* (Mauremootoo, 2012)
- Report on "Diagnosis of the causes and consequences of biodiversity loss and its relationship to human well-being" (Benchimol et al, 2014)

All reports point to the persistence and intensification of six main pressures on Biodiversity and that Biodiversity loss has not shown significant reduction.

The main causes affecting biodiversity in Cabo Verde are identified as:

A. Overexploitation
B. Destruction of terrestrial and marine habitats
C. Introduction of Exotic Species
D. Poor organizational management and legislative enforceability
E. Poor environmental knowledge and awareness
F. Climate changes

To respond to the existing situation and reduce the pressures identified above, seven national priorities action have been established and are presented in Chapter 9.

A. Over-exploitation of Biodiversity

Excessive exploitation or overexploitation of natural resources is one of the main driving forces affecting national biodiversity. It leads to Biodiversity loss and contributes to the breakdown of the functions provided by ecosystems.

Among the main processes responsible for this and that have led to overexploitation, the following stand out: (i) overfishing and illegal fishing, (ii) poaching and (iii) overfishing of vegetable species.

i. Overfishing and illegal fishing

The implementation of fisheries management plans have led to more sustainable practices and there have been improvements in the management of some fisheries (i.e. black mackerel); however, most fish stocks show signs of continuous reduction.

According to INDP docking data, in recent years, a reduction has been observed in the fish catch volume (1% reduction between 1999 and 2012). This reduction is slight because, in recent years, dockings of industrial fishing have increased. In turn, dockings of artisanal fishing, which directly sustain about 3% of Cabo Verde's population, declined 28% during the period in question.

The average yield of artisanal fisheries have also declined. During the period under review, average yield has fallen more than 25%. This is underlined by the testimony of artisanal fishermen who claim to spend more time fishing to catch a volume sometimes smaller of fish that doesn't even cover the costs: a clear indication that many fish stocks, of which of some demersal, background fish, small pelagic fish and crustaceans (coastal lobsters) may be being pressured beyond their ability to repopulate.

This perception is also shared by professionals and supported by some studies, although there are still many gaps in the research. It should be noted that some overexploitation is essentially of localized nature, such as the capture of *goat conch* in Sal, Santiago, Santo Antão and São Nicolau islands.

For some species such as the black mackerel, the imposition of a closed season since 2008 has, in the fishermen's perception, presented positive results because catches have improved in quantity and quality (individual sizes) after the closed season. There was also an appreciation of the product which has been marketed at higher prices.

Stocks assessed over ten years pointed, at the time, to a potential for capture estimated between 36 000 and 40 000 tons per year. Between 1999 and 2012, the annual average of total dockings is about 9.209 tons, but these figures are underestimated because the coverage rate of artisanal fishing points, which represents on average 54% of the total dockings, does not exceed 20%.

When comparing the dockings with the estimated potential power one could conclude that there is an under-exploitation of fishery resources in Cabo Verde. However, one must consider that this estimate needs to be updated and that more than half of the estimated potential refers to tuna (skipjack and yellowfin) which implies that at the outset, there is greater development potential for tuna fishing (Tariche & Gonzalez, 2009).
2009).

This potentiality for tuna catches, however, can be compromised since the information collected by the International Seafood Sustainability Foundation - ISSF show that stocks of Atlantic albacore are already over-exploited (WWF, 2014).

For other resources such as lobsters, background fish and molluscs, the possibilities for expansion of fisheries are limited. These resources are sensitive to high stress levels and have a relatively low resilience when overexploited (Gonzalez & Tariche, 2009).

Some species of shark and conch were identified by the actors as being under strong pressure and possibly endangered. Regarding the shark, there is increasing pressure by the international fishing industry due to declining stocks of other fish species and their highly valued fins in Asian countries.

Sharks, like tunas and other large pelagic species, maintain the balance of the marine ecosystem, as their predatory nature helps keep other populations under control. In the long term, decline in the population of larger predators compromises the ecosystems' ability to meet the needs of the population.

The weak capacity of resource management, the use of equipment and inadequate fishing gear/practices, the continuous use of the same fishing grounds, increased industrial fleet, inobservance of laws (on compliance with sizes and limits set and ban on use of bottles) and the disregard for closed seasons for certain species have also contributed to the overexploitation of the archipelago's fishery resources. To all this we may also add the risk of over-exploitation by illegal vessels that put local fishermen in disadvantage and which may be a source of aggravated poverty in fishing communities in the future.

The protection of marine areas in Cape Verde is far behind when compared to the protection of terrestrial areas, though, since 2010, limits have been approved for 31 protected areas out of the declared areas, that include marine areas. These are the first marine areas to be effectively created. However, the largest of them all, the Protected Areas Compound of Santa Luzia and Ilhéus Branco and Raso, is till now at the approval stage.

ii. Poaching

Fishing of protected and endangered species is prohibited by law (Regulating Decree No. 7/2002). Many of these species are also protected by Conventions ratified by Cabo Verde. However, poaching of protected species is still a reality that affects Biodiversity conservation, leading to the sharp decline of species whose survival is already threatened. This is the case of some emblematic species such as the common turtle (Caretta caretta) (for who the beaches of Cabo Verde are an important spawning area), the Shearwater (Calonectris edwarsii), *Fea's Petrel* (Pterodroma feae), Boyd's Shearwater (Puffinus assimilis boydi) and the Red-billed tropicbird (aethereus Phaeton).

According to Conservation International, although relatively abundant, the population of Caretta caretta in Cabo Verde is among the 11 most endangered population in the world chart, ranking eighth. This is due to its limited distribution, human predation that has been occurring for decades over their meat and eggs, and incidental capture by fishing in Cabo Verde and along the West African coast. Most recently, tourism development along the coastline and harmful recreational activities, such as movement of sand bikes at nesting beaches, were added to the list of threats.

According to the records of the Directorate General of Environment and NGOs operating on the ground, capturing sea turtles on the beaches and at sea is still a threat to the conservation of the species, but has reduced over the last few years, particularly in Sal and Boa Vista islands, the most frequent islands for the appearance of these species. Beach patrols on the main islands where spawning occurs and sensitization activities carried out by NGOs, Community Associations, Municipalities and the Directorate General for the Environment have contributed greatly to reducing captures.

Other species, such as marine and terrestrial birds, have suffered a rapid decline due to poaching and theft of eggs and nestlings or due to predation by species introduced on the country's islands and islets (cats and rats).

One of endemic seabirds that have suffered most from human predation is Cory's Shearwater, whose main colony is located on the Ilhéu Raso. However, since 2008, there have been no records of catches because of the protection campaigns conducted on the islet. Currently, there are an estimated 7 000 breeding pairs and it is believed that in 2014 the number will increase (Melo, pers comm, 2013).

With the awareness raising and conservation activities undertaken by institutions, NGOs, Associations and some Municipalities there has been a significant reduction in the catch of turtles, particularly, the in main islands of spawning (Boavista and Sal) and of shearwaters. However, other species are still being widely captured. However, other species are still being widely captured.

iii. Overharvesting of plant species

Indiscriminate cutting of shrubs for firewood for domestic consumption or harvesting of plant species, including endemic ones for medicinal or cultural purposes, contribute greatly to the loss of plant diversity, further aggravating erosion and soil degradation.

According to MAAP data, in 2003, 430.4 tons of firewood were legally taken from national forests while 10 tons were taken illegally. To note that 25.6% of the Cabo Verde population still use firewood /charcoal as the main source of energy for food preparation (Census 2010). In rural areas, this percentage is of course much higher.

With the establishment and implementation of the Natural Parks of Serra Malagueta, Monte Gordo and Chã das Caldeiras, logging and the collection of plant species, especially endemic ones, were prohibited within the limits of Parks. At the same time, actions to restock extensive areas with endemic species like the Tortolho (tuckeyana Euphorbia), Lorna (Artemisia gorgonum), Lantisco (Periploca laevigata), among others have been carried out by teams of the Parks, where it is possible to verify some recovery of native vegetation (White Paper on the State of Environment, 2013).

B. Degradation and/or destruction of Terrestrial and Marine Habitats

Change and destruction of natural habitats is currently one of the major causes of Biodiversity loss in Cabo Verde.

The main factors causing changes and destruction of natural habitats in the archipelago are: (i) the intensification of farming through the conversion of natural areas into agricultural areas; (ii) extraction of inert materials; (iii) and inappropriate tourism development along the coastline.

i. Intensification of farming and free grazing

Although only 10% of the territory is considered suitable for agriculture, cultivated areas have increased annually, and most often in slope areas (White Paper on the State of the Environment in Cabo Verde, 2013). Intensification of agricultural practices, particularly rainfed agriculture, has a direct effect on the loss of native vegetation which is removed and replaced by crops.

After some harvests, insect pests, weeds and soil depletion force farmers to abandon cultivation areas and repeat the cycle elsewhere. One does not know for sure the percentage of areas of native vegetation destroyed for the benefit of rain-fed agriculture. To this, we can also add the risk of soil and water contamination by the excessive use of agro-chemicals.

According to the National Plan for implementation of the Stockholm Convention on Persistent Organic Pollutants (POPs) in Cabo Verde, there is currently no pesticide containing chemical substances registered as POPs in its composition, not even products such as DDT and Aldrine, which were previously authorized for public health purposes. The main existing risks are due to the use of obsolete and / or expired products, (mis) handling and lack of effective control.

Free grazing is another form of habitat degradation. The way it is done, that is, the loading capacity being superior to production of the space used, has multiple effects on the natural ecosystem of the islands. This is especially true for goats given the easiness with which they use any and all types of vegetation. By defoliating the vegetation, animals affect the growth, vigor and reproduction of the species resulting in vegetation loss and soil exposure. Ground stomping by animals reduces the density and infiltration rates, increasing runoff and erosion which can lead to desertification.

ii. Extraction of inert

Illegal extraction of inert in riverbeds and beaches is a social, economic and environmental problem that has assumed alarming proportions in almost all the islands of the archipelago and requires alternative solutions that harmonize economic growth with the need to protect vital ecological functions of beaches and creeks.

Consumption of inert has increased considerably in recent years, driven by the increase in road and airport networks as well as population and urban growth. This increasing demand enabled the development of inert marketing and, as a result, the spontaneous exploitation of inert in riverbeds and beaches.

Although Decree-Law No. 2/2002 prohibits "the extraction and exploitation of sand dunes, beaches and inland waters, coastlines and the territorial sea", there has been a progressive increase in the consumption of sand after the approval of the creation Decree-Law. This shows the inefficiency of the Decree-Law in addressing the problem of illegal exploitation of inert (Lopes, 2010).

In reality, the economic conditions in which much of the Cabo-verdean population lives only helps the economic aspect prevail over the environmental aspect. On the other hand, poor supervision and lack of enforcement also contribute for the decree-law to lose its effectiveness.

In 2010, an estimate pointed to a consumption of 569 000 tons of legal sand in Cabo Verde. However, considering the existing data on cement imports, consumption should be higher, at around 800 tons, at least. In many locations on the island of Santiago, sandy beaches have been completely explored, with the "extractors" invading the sea.

This silent and accelerated degradation of beaches and creeks nationwide cause a chain of environmental impacts. If not minimized and reversed, these impacts will have irreversible consequences on associated ecosystems functions, which will contribute to increase poverty among the coastal and agricultural communities in future. In addition, there are also the added health costs for people engaged in the illegal extraction of inert given they way extraction is done. Therefore, it is necessary to study feasible alternatives (import, mining, recycling of construction and demolition waste, development of new construction techniques, use of other types of materials, among others) to solve the problems of inert supply for construction and livelihood for the labor-force involved in illegal extraction.

iii. Inadequate tourism development on the coastline

Tourism activity in Cabo Verde has shown highly positive performance since 2000 and during this period tourism revenues accounted for 7% of GDP. Twelve years later, in 2012, tourism revenues accounted for 24.3% of GDP (BCV, 2013).

Tourism increment in recent years, particularly in the Sal and Boa Vista islands, has not always being done in a structured, coordinated way. This concurs to increasingly augment the pressure on coastal and marine habitats (namely, spaces for construction of tourist infrastructure (beach zones, dunes and wetlands, sand extraction) and on the fauna and flora, and often in an irreversible manner (2010 - 2015 Public-Private Partnership for Sustainable Tourism in Cabo Verde, 2010).

The development of tourism infrastructures in beach and dune zones and the development of harmful recreational activities (i.e. moto quads) have contributed to the change and the degradation of these zones, with consequent modification of habitats and changes to environmental functions.

The circulation of sand bikes in the nesting areas of sea turtles endangers the birth of the little turtles and destroys existing vegetation. There are still many establishments do not respect the limit of 80 meters distance from the seafront defined in the legislation or sometimes ignore the recommendations provided by the evaluation of Environmental Impact Assessments (EIA), particularly if the project is to be developed in an area adjacent a PA.

C. Introduction of Exotic Species

Most existing plants in Cabo Verde were introduced by man. The exotic component (introduced accidentally or deliberately through agriculture or reforestation programs) largely supplants the endemic one which is represented by only 83 taxa (Arechavaleta et al, 2005). After propagating in an uncontrolled fashion, exotic species can acquire invasive behavior, causing large imbalances on the natural ecosystem and bringing on enormous ecological and economic damage.

Many invasions by exotic species can be stopped, controlled and even reversed. But for this to happen, control and management measures need to be implemented.

In 2012, an Invasive Plants Management Strategy was prepared under Consolidation of Protected Areas Project for the terrestrial parks Fogo, Santo Antão and São Vicente with proposed actions, control methods and guidelines preparing environmental impact assessments for the use of herbicides.

Invasive plants are considered a major threat to native Biodiversity in Cabo Verde (Mauremootoo, 2012).

On the island of Santiago, species like teh Espinho-catchupa (catchupa-thorn) in the Ribeira Seca Watershed (Dichrostachys cinerea) which has been used as firewood and Leucaena leucocephala have shown invasive behavior, occupying, in recent years, larger areas at the expense of other neighboring species (White Paper on the State of the Environment in Cabo Verde, 2013).

The same happens with the American acacia (Prosopis juliflora) introduced in the archipelago as part of reforestation programs, and which has demonstrated an invasive nature on the island of Boa Vista, in the Ribeira de Rabil and some dune areas, competing for space and water with the Tarafe (Tamarix senegalensis) and Date-palm trees (Phoenix dactylifera). The Ministry of Rural Development, through its delegation in Boa Vista, has a project that aims to eliminate the American acacias and repopulate the Ribeira de Rabil and dune areas with unique species and Tarafe Tamareiras.

In the Natural Parks of Serra Malagueta, Monte Gordo and Chão das Caldeiras reforestation programs with native species and control measures of exotic species have been implemented with some success. Notorious is the example of the recovery in some areas in the Serra Malagueta Natural Park (White Book on State of the Environment in Cabo Verde, 2013).

Invasive animals such as cats and rats are also targeted by eradication projects. The introduction of cats and rats on the islets and on the island of Santa Luzia has had a devastating effect on existing reptiles and birds. There is a project idea aimed at eradicating wild cats on the island of Santa Luzia for the eventual reintroduction of the giant lizard.

Among other introduced species, we highlight the Agama agama lizard, believed to have entered through the timber imported in to Cabo Verde. First identified in 2009, in Santo Antao, this species can also be found on the islands of São Vicente and Santiago. On the latter, the existing populations is estimated at more than 200 individuals (INIDA, 2011). This lizard is a danger to the endemic species of lizards and insects, as they form the basis of its diet.

Regarding the aquatic invaders, there is little or no information (4th Report on the State of Biodiversity, 2009). Navigation is the main mode of introduction and spread of exotic marine invasive species. The associated key aspects include ballast water and sediments, bilge water and hull encrustations and in other parts of the vessel.

D. Poor organizational management and legislative enforceability

There is a considerable number of institutions linked direct or indirectly to Biodiversity conservation. Because of the insularity and the costs associated with institutional management in island countries, not all islands have representations of key institutions, as is the case of the environment, tourism, fisheries, among others. There are conflicting mandates and accountability issues in regards to issues related to the environment. This is aggravated by poor interagency coordination, which explains the reason why Cabo-verdean institutions tend to work in isolation and in a compartmentalized way (Benchimol, 2009).

Legislation and oversight are also instruments of control that are essential to Biodiversity conservation and management. Cabo Verde has a set of legal instruments in the area of environment, fisheries, tourism, agriculture and water that are intended to govern economic activities and protect natural environments. One of the major current challenges regarding the protection of these natural environments resides in compliance with this legislation which is considered "excessive, fragmented, not always complementary, sometimes contradictory and unclear applicability" (Medina, 2007).

There are frequent administrative delays in decisions that result from the large number of institutions involved. In this particular case regarding the shoreline, there is an overlap of higher authority figures and a large number of entities involved, which complicates the implementation of some legislation.

In Cabo Verde, oversight is poor due to several factors: fragmentation of the territory, scarce financial and technical resources, and insufficient institutional coordination, among others. Many conservation projects are limited in time and financial resources and, thus, it is not possible to provide ample funds for oversight. Only campaigns for the protection of sea turtles have been able to engage volunteers and mobilize some funds to ensure patrolling of nesting beaches and research. It should be mentioned that the Municipality of Sal island seems to be the only municipality to include a budget for the protection of sea turtles in its annual budget.

E. Poor environmental knowledge and awareness

The major challenge at hand is to promote a sustainable development that quickly and efficiently satisfies current and future generations. The ecosystems of Cabo Verde are at the basis of all life and economic activities developed and their maintenance ensures economic growth and the well-being of the population. However, certain socio-economic activities (referred to in previous chapters) are destroying biodiversity and changing ecosystem functions, which in the long term may jeopardize the sustainability of the country.

Despite several conservation initiatives developed in recent years, degradation continues, and, in some cases, rapidly. In addition to the legal measures and conservation initiatives that are necessary to ensure the integrity of the country's natural resources, it is necessary that all actors (population, NGOs, policy makers, private sector, etc.) are aware and understand the real value of the Cabo-verdean biodiversity as well as the associated vulnerability. The numerous projects implemented and awareness raising activities undertaken by NGOs and associations have contributed to create an environmental conscientiousness and positive changes in environmentally damaging practices, but there is

still a lot of ignorance and lack of action against biodiversity loss.

F. Climate changes

Climate change is the greatest threat to Biodiversity worldwide. Climate change will affect biodiversity either directly, by threatening the survival of the species, or indirectly, through the increase of extreme weather events (i.e., droughts, storms, etc.).

Increase in temperature will have a direct effect on numerous species. It is estimated that most of the corals will be lost by mid-century, with adverse impacts on commercial and subsistence fisheries, coastal protection and with economic losses. It is also expected that 20% of all lizards in the world may become extinct by the end of the century, if predictions of temperature increase materialize.

Increased ocean temperatures affects migratory and reproductive processes of species. An example is the advancement of the sea turtles' reproductive period on the Atlantic coast of Florida (between 1989 and 2003) which is associated to an increase in temperature of 0.8 degrees of the sea surface (White Paper on the State of the Environment in Cabo Verde, 2013).

If the trend of biodiversity loss persists and the underlying factors are not properly reduced and / or eliminated, mitigation measures will not be sufficient to increase the resistance and resilience of national ecosystems, with direct consequences on the welfare of the Cabo-verdean population.

G. Reviewing the underlying causes of Biodiversity loss

The factors that threaten the Cabo-verdean biodiversity are many and derived mainly from the fact that the country depends heavily on the exploitation of its natural resources be it agriculture, forestry, fishing or tourism.

Underlying the causes given above are macroeconomic factors such as economic growth, population growth and food demand, poverty, national policies that promote tourism and fail to incorporate environmental values in decision processes, culture and religious beliefs. In addition, there is a lack of education and environmental awareness among the population and decision-makers.

The loss of biodiversity and ecosystems is a threat to the survival of the planet, economies and human societies. Ecosystem degradation tends to harm rural populations more directly than urban, with greater impact on the poorest.

Capítulo 6

Quadro legal e institucional ligado à conservação da Biodiversidade

6. Legal and institutional framework on Biodiversity conservation

The existence of an adequate legal and institutional framework is essential for good environmental governance. Management of natural resources requires considerable legal arsenal that reflects, on the one hand, a strong political will committed to the problems of natural resource management and confirms, on the other hand, a commitment to ensure the rational and sustainable use of the natural heritage for future generations, while allowing the socio-economic development of current generations. Cabo Verde, as an island country with specific characteristics, requires an appropriate organizational structure.

6.1 National institutional framework on Biodiversity

The management of natural resources in Cabo Verde is under the responsibility of various actors and institutions distributed among government agencies, municipalities, civil society organizations and private sector.

Environmental policy is implemented through the General Directorate of Environment, Ministry of Environment, Housing and Territorial Planning, Environment, Housing and Territorial Planning.

The main ministries involved in the management of natural resources are: the Ministry of Environment, Housing and Territorial Planning (MAHOT), the Ministry of Rural Development (MDR), the Ministry of Infrastructure and Maritime Economy (MIEM), the Ministry of Education and Sport, the Ministry of Higher Education, Science and Innovation (MESCI), the Ministry of Tourism, Industry and Energy and the Ministry of Finance and Planning. Given their direct involvement and responsibility in the conservation of terrestrial and marine biodiversity, the first three ministries above stand out.

The Ministry of Environment, Housing and Land Management (MAHOT) coordinates and implements policies relating to the environment, decentralization, regional development, urban planning, housing and land management, as well as the relationships with local authorities.

The Ministry has oversight over the Directorate General for Environment (DGA), the General Directorate of Land Management and Urban Planning (DGOTU), the National Water Supply and Sanitation Authority (ANAS) and the National Institute of Meteorology and Geophysics (INMG), the institution that implements national policies on climate change.

The Ministry of Infrastructure and Maritime Economy (MIEM) coordinates and promotes public works, civil construction, infrastructure, transport, shipping and aviation and maritime security, ports and airports, telecommunications and postal communications, policy development, protection and conservation of marine resources as well as all activities related to the use and exploitation of the sea, coastal zones, continental shelf and the exclusive economic zone. This Ministry has oversight over the General Directorate of Marine Resources that replaces the former Directorate General of Fisheries (DGP) and the National Institute for Fisheries Development (INDP) which has expertise in the field of scientific research, studies of biological and ecological nature, and formulation of recommendations for the sustainable use of marine resources and conservation of marine Biodiversity.

The Ministry of Rural Development (MDR) coordinates the management of water resources, meteorology and geophysics, agriculture, forestry and livestock, and food security. This Ministry has oversight over the Directorate-General for Agriculture and Rural Development (DGADR), the National Institute for Agricultural Research and Development (INIDA) and the National Institute of Agricultural Engineering and Forestry (INERF).

The remaining ministries have a less direct role in matters relating to Biodiversity. The Ministry of Education and Sports and the Ministry of Higher Education, Science and Innovation coordinate and execute policies for education and scientific research. The Ministry of Tourism, Industry and Energy proposes, coordinates and implements public policies linked to economic activity for the production of goods and services, tourism and handicrafts and the Ministry of Finance proposes, coordinates and implements policies for the management of state finances.

It is believed that Cabo Verde's institutional framework is very burdensome. The existence of a large number of ministries and institutions with direct and indirect action on issues related to biodiversity and the management of natural resources translates into a very complex system. The coordination and inter-institutional relations are insufficient. Due to insularity, the country's natural resources require a balanced spatial distribution of institutions and services. This increases the cost of management services without making coordination effective, leading to serious implications for environmental management.

There is a trend of institutional centralization of the State on the main islands, Santiago and São Vicente, in opposition to the near absence of environment and biodiversity related institutions in the other islands. Likewise, there is a weak institutional presence in the islands associated to the fisheries, tourism and infrastructure sectors.

As part of the government decentralization and planning policy, municipalities play an important role in the implementation of these policies on the ground. Municipalities are responsible for promoting socio-economic development and the management, conservation and management of natural resources in their area of jurisdiction, in coordination with ministries and other services.

To strengthen the participation of municipalities in Cabo Verde, the National Association of Municipalities of Cabo Verde (ANMCV) was created September 22, 1995, with the aim of promoting dialogue and coordination between the various municipalities and the government.

Cabo Verde currently has 22 municipalities, across nine inhabited islands. It is a complex system of land management units for a small island country with limited resources. Due to existing challenges and available resources, the government is forced to contribute significantly to the municipal management of most municipalities unable to survive independently. Aside from the lack of financial resources, there is a lack of technical and human resources in the areas of Environment and Biodiversity. This greatly limits the involvement municipalities in the biodiversity conservation and environmental management

programs. Despite the difficulties, in recent years, there has been increased adherence and involvement of municipalities in programs related to biodiversity preservation, environmental education and, generally, in the management of natural resources.

In addition to the ministries and municipalities, the private sector and Civil Society Organizations (CSOs) are also involved in managing natural resources.

Private sector representatives who profession-wise are more associated to Biodiversity, both marine and terrestrial, are the operators of agribusiness, fisheries, nature tourism and some are representatives of economic operators such as Business and Industrial Associations. In general, businessmen consider environmental preservation as a factor of extra cost, which constitutes a restriction to economic activities that are established by the existing legal instruments. Biological resources and the environment are not yet seen as an opportunity, safe for minor exceptions such as tourism associated to the observation of whales and turtles on the islands of Sal and Boavista.

Interventions by the businessmen are generally limited to actions or reactions associated with the legal aspects or environmental constraints. The Cabo-verdean private sector still participates in a very incipient way in biodiversity preservation, environmental management and the promotion of eco development initiatives. Although there is some participation and concerns by some companies regarding environmental issues, such as the tendency to reduce the consumption of paper invoices and promotion of electronic payments, private sector initiatives are still very timid.

Just like the private sector, civil society still has a low environmental awareness. Often, low participation and environmental awareness are explained by the lack of comprehensive dissemination of and /or lack of access to specific information on environmental issues (NAPA II, 2003). Despite the implementation of the government's environmental policies and the efforts toward environmental education and awareness, the common citizen is not very environmentally conscious. The common citizen does not recognize himself as an active and important actor in environmental management, which explains the low participation in debates and initiatives of environmental nature.

According to NAPA II (2003), in recent years, several NGOs and national and regional associations have been created with the aim of protecting the environment, promoting the fight against poverty and participation in local or community development.

It is estimated that over forty NGOs and community associations are operating in various sectors of environmental, economic and social development. According to the survey conducted under this paper, among the various existing organizations in the country, we can highlight the following: Association of Friends of Nature (AAN), the Association for the Defense of the Environment and Development (ADAD), the Organization of Women of Cabo Verde, Citi-Habitat, SOS Tartaruga, the NGO BIOS.CV, the Flora and Fauna Association of San Francisco in Santiago, Natura 2000, Biosphere I, Turtle Foundation, Maio Biodiversity Foundation, the Federation of Fishermen of the AMP of Santa Luzia (FEAPA), the Association of Fishermen of May, the Association for the Self-Promotion of Women in Development (Morabi) (PANA II, 2003), among others.

The National Platform of NGOs was established in June 1996 and is a forum for dialogue and consultation among the various NGOs and Associations.

According to Medina (2007), a positive trend is being observed in terms of the number and responsiveness of national NGOs. These are very important partners in the implementation of national plans for the environment at the local level and play a key role in disseminating information and environmental education, skills training, community outreach, in promoting local community development and in the fight against poverty and in supporting the planning and implementation of local projects.

Despite the advances made in Cabo Verde, the role of NGOs and associations as a force of balance and counterbalance in the environmental sector remains an untapped potential, poorly organized and that is not yet taken into account.

6.2 Legal framework for Biodiversity preservation

If on the one hand the organizational framework is important, on the other, it cannot work competently without the existence and implementation of an appropriate legislative framework. Legal aspects are the basis of the organizational structure, the creation of mandates and regulatory provisions required for the implementation of actions and measures.

In the section below presents the legal aspects related to internal environmental management and international commitments.

According to Article 12 of the Constitution of the Republic of Cabo Verde, the general international law is part of the Cabo-verdean law, since it is in force in the international legal order. Approved or ratified International treaties and agreements enter into force in the Cape Verdean law after its official publication and entry into force in international law to which the Cabo-verdean state associated. Considering the recent nature of environmental legislation in Cabo Verde, the existing international legal mechanisms have played a pivotal role in the consolidation and strengthening of the national environmental legal system that seeks to follow international guidelines on Biodiversity and Environment (NAPA, 2003).

The legal system incorporates a set of legal provisions that regulate environment related issues, including environmental policy instruments, nature conservation and preservation, air, water, soil and pollution control.

Cabo Verde has ratified the major international conventions and agreements on the management of environmental and natural resources such as those on Biological Diversity, Combating Desertification and Climate Change. Cabo Verde signed the Convention on Biological Diversity in June 1992 and ratified it in March 1995.

The country is part of the Convention on the Conservation of Migratory Species of Wild Animals - Bonn Convention, since 2006, the Convention on Wetlands - Ramsar Convention and the Convention on International Trade in Endangered Species of Wild Fauna and Flora - CITES since

2005, among other treaties and conventions. However, due to the country's lack of financial and technical resources, aggravated by the insular nature of the territory, the implementation of these conventions and treaties is facing some difficulties.

Currently, there is legislative framework of recognized quality, which absorbs the main rules and principles in terms of environmental law, is comprehensive in scope, touching on major issues concerning defense and preservation of the environment. It also shows constant preoccupation in defining the mechanisms and methods of supervision, despite the existence of many aspects yet to be regulated and other areas that require legislative action.

There has also been on the part of various governments the concern to follow the worldwide trends and developments, and to this end, the country has adhered to a number of international conventions in the field of environmental protection and nature conservation. Despite these positive aspects, practice has shown that the monitoring of measures and legislation adopted is not efficient, and Environmental Law is the weakest link in Cabo Verde (Medina, 2007).

The level of compliance with legislation relating to Biodiversity is very low. This worrisome situation is due in part to the inadequacy of laws in regards to the populations' socio-economic and educational problems and the lack of effective oversight. The first aspect can be minimized by creating mechanisms to encourage participation by the population in the processes leading to the preparation of legal instruments. As for the second, it is urgent to combat the widespread perception of impunity in relation to non-compliance with legislation through the application of appropriate monitoring tools (Medina, 2007).

The current legislative framework on the environment is too dispersed and clearly needs a new effort for coordination and integration. The vastness of the regulatory legislation, and the fact they are quite loose, does not reflect but rather harms, a strategic vision for the Biodiversity management and conservation.

From the foregoing, it also follows that the institutional framework supporting Biodiversity conservation is complex. There are numerous cases of overlapping administrative responsibilities, unclear responsibilities, and excessive dispersion of authorities and responsibilities among various

ministries. Although there is a recognized effort in recent legislation to clarify the competences attributed to various institutions, there are still overlaps, gray areas and lack of coordination (R. Medina 2007).

Capítulo 7

Principais iniciativas de conservação da Biodiversidade em Cabo Verde

7. Key Initiatives for Biodiversity conservation initiatives in Cabo Verde

Overall, one can say that today, the environmental policy is more comprehensive, covering various pillars of the environment and not only soil, water and reforestation.

From 1975 to 1991, the environment conservation policy in Cabo Verde was mostly focused on rural areas, with significant investments in the fight against erosion and desertification, vegetation recovery and mobilization and enhancement of water resources. This can be attested by the successive government programs and national development plans.

Between 1986 and 1990, concerns about the reorganization of the territory, integrated development and the continued development of new and renewable energy policies come into play with some force.

Since 1991, the Government started giving particular importance to the environment in the respective governing programs, with special emphasis on ecology, environment and natural resources, aimed at environmental preservation and the quality of life for citizens. Likewise, the 1996-2001 government program gave highlighted in particular marine environment and coastal areas. For land issues, the program adopted protection and planting of forests, enhancement of the urban environment and all its surroundings, and the promotion of international cooperation as main guidelines.

The Government program for the VI Legislature (2001-2005) held that "*the conservation of ecosystems and the development of the islands were a central concern of the Government, which should be translated into a crosscut political orientation and fully taken into account in all other sectoral policies*". In the marine environment, the Government took it in order to protect marine ecosystems and the coastal areas so as to ensure the sustainable exploitation of its resources.

The Government program for the VII Legislature (2006-2011) continued to promote development with environmental quality based on the following strategic areas such as sustainable management of natural resources, conservation and enhancement of nature and the territory, protection of biodiversity and landscape, strengthening environment integration into sectoral and regional and local development policies, improved environmental information and training, and human resource development. In this program, the sea is classified as a "strategic asset, source of wealth and progress for Cabo Verde" even considered as "an area in which to invest with view to promoting the interests and values of Cabo Verde beyond its own borders.

During the last four legislatures the government clearly chose the environment as an important sector in the development of the country; however, the 2011 - 2016 Government program for the Eighth Legislature does not cover the sector in a clear and unambiguous environment but rather mixed in the Tourism sector. *"It will promote sustainable and responsible development tourism, through planning, coordination and harmonization of cross-cutting policies, taking into account the need to reconcile the environmental preservation and historical and national cultural heritage, management of primary resources and land management in order to ensure sustained growth of the economic sector capable of meeting the needs of present and future generations"*

Cabo Verde has sought to follow the global dynamics associated with biodiversity conservation and the environment, not only through the ratification of international conventions and treaties, but also through the implementation of plans and programs; substantial changes in the environment are already evident.

The First National Biodiversity Conservation Strategy and Action Plan for was prepared in 1999. In 2003, the Inter-sectoral Action Plan was prepared for Biodiversity Conservation for the period 2004-2014, as an integral document of PANA II - Second National Action Plan for the Environment. The importance of biodiversity conservation and enhancement, especially through in situ conservation, is recognized at the same time that a number of priority sites were identified for conservation in Cabo Verde. In this context, in 2003, Decree-Law 3/2003 was published creating a national network of 47 protected areas.

Despite the difficulties associated with insufficient human and financial resources, specifics of the legal and institutional framework, and the difficulty of integrating conservation and socio-economic development, there is a significant advancement in terms of biodiversity conservation initiatives. These include legal and institutional improvements, such as the proposal to establish an Autonomous Body or Authority for the

Management of Protected areas (OAAP) to ensure the revitalization of the network of protected areas.

In recent years, there have been several projects and programs on biodiversity conservation and enhancement, strengthening of technical capacity, strengthening of legislative and institutional framework, and environmental education.

In addition to initiatives translated into the concrete projects mentioned above, there are other initiatives linked to wetland conservation and creation of biosphere reserves. In 2005, under the Ramsar Convention, Cabo Verde designated three sites as Wetlands of International importance: Curral Velho and Lagoa de Rabil located on the island of Boavista and Lagoa de Pedra Badejo on the island of Santiago (IV Biodiversity Report, 2009). The Salina of Porto Inglês, on the island of Maio, was included in the international list of Ramsar Sites in 2013.

In the area of conservation of endangered species one should highlight the work done by civil society organizations such as the NGO Biosphere I that implements the conservation program of the islets Ilhéu das Cagarras and Raso. Likewise, various state institutions, civil society organizations, research centers and international partners have done a remarkable job in terms of conservation of the species in spawning areas during the breeding period, through the National Network for the Protection of Sea Turtles (TAOLA).

In the conservation of endangered species one should highlight the work done by civil society organizations as exemplified by the NGO Biosphere I, which implements the Cagarras conservation program in the islets Ilhéus Raso e Branco. Likewise, various state institutions, civil society organizations, research centers and international partners have done a remarkable job in terms of conservation of the species in spawning areas during the breeding period through the National Network for the Protection of Sea Turtles (Taola).

Cabo Verde is also working toward the recognition of Biosphere Reserves, inserted in the UNESCO Man and Biosphere program. A process was begun in 1999 with the Canaries and later, in 2005 with UNESCO, a process to prepared the application file of the first Biosphere Reserve of Cabo Verde which was resumed in 2011 (IV Biodiversity Report, 2009).

In recent years, several papers on Biodiversity conservation and enhancement, including conservation and management plans / conservation of protected areas and endangered species have been developed a result of the various projects and interventions.

Overall, Cabo Verde has fulfilled the international commitments in the field of biodiversity conservation. There have been major advances such as: recovery of some endangered species and degraded areas, increased involvement of both central and decentralized national institutions, greater information and awareness on environmental issues and increasing knowledge about the state of Biodiversity and its national and international importance.

Capítulo 8

A implementação da CBD relativamente às Metas de 2010

8. Implementation of the CBD in relation to the 2010 Targets

To assist in the implementation of the CBD, the Convention, in its Article 6, urges Contracting parties to develop strategies, plans or programs on biodiversity conservation and promotion of its sustainable use. In this context, Cape Verde drafted its first National Strategy and Action Plan on Biological Diversity in 1999, which has guided the implementation of actions on national Biodiversity conservation from the beginning in 2000 and has served to evaluate the commitments made.

In 2002, during COP 6 in The Hague, the Parties adopted, for the first time, the Strategic Plan to guide the implementation of the Convention, and established a first set of targets for biodiversity conservation for 2002-2010, known as the 2010 Targets.

The Strategic Plan was aimed at significantly reducing biodiversity loss by 2010. Unfortunately, surveys show that the vast target agreed to by governments of the countries of the world was not achieved. In other words, "*to achieve by 2010 a significant reduction of the current rate of Biodiversity loss at global, regional and national levels as a contribution to poverty alleviation and to the benefit of all life on Earth*", thus becoming necessary to assess the strengths and weaknesses of the implementation of these goals so that they can be properly resized in new strategy to be developed.

Thus, gathered in Nagoya, during the Tenth Conference of Parties to the Convention in 2010, the Parties approved the new Strategic Plan and new targets for 2020. With the adoption of the Nagoya Protocol, and since Cabo Verde is one of the Contracting Parties, the country must develop a new strategy and present the current status of implementation of the 2010 Targets.

Table 1 below presents the status of implementation of national objectives in relation to biodiversity conservation 2010 Targets established by the Convention.

This table was prepared based on information on the evaluation of CBC implementation in Cabo Verde, taken from the 2009 4th report on the state of implementation of Biodiversity.

Table 1 Status of implementation of national conservation objectives in relation to the 2010 Targets

Focal Areas of 2010 Targets 2010	*Evaluation in comparison to the country's objectives*	*State of Implementation*
Focal Area 1: Protection of Biodiversity components	The main areas with ecological value of global and national importance protected by law, represent more than 10% of the country's total land area.	
Focal Area 2: Promote sustainable use	All of the country's fauna and flora species protected by law and awareness campaigns to reduce Biodiversity loss in the various aspects nationwide.	
Focal Area 3: Addressing Biodiversity threats	The most important habitats are being Protected by law as well as through conservation and recovery initiatives with the purpose of controlling the introduction of exotic species, addressing climate change threats, pollution and	
Focal Area 4: Maintain Biodiversity goods and services for human sustainability	Biodiversity conservation initiatives were conducted aimed at the well-being of the population, food security and quality of life.	**"?"**
Focal Area 5: Protect knowledge, innovations and traditional practices	Socio-cultural diversity, knowledge and traditional practices of local communities are promoted through the development of various environmental projects	
Focal Area 6: Ensure fair and equal distribution of benefits from the use of genetic resources	The country's genetic resources are not overexploited and over-commercialized, and therefore there are no conflicts or paybacks.	

Focal Area 7: Ensure availability of adequate resources	Cabo Verde has benefited from funding mainly from international cooperation	

 Indicates insignificant progress or no progress;  Indicates target not achieved, but some progress made;  indicates target not achieved, but with important progresses;  Indicates significant progresses; Indicates fully achieved target; and "?" Indicates insufficient information to define the target level reached.

Source: Adapted from the 4th Report on the State of Biodiversity Conservation

From the analysis of the table above, it appears that implementation of the 2010 Targets was overall poor However, although the majority of targets have not been reached, implementation of the CBC did make significant progress over the years. namely: approval of legislation, on site conservation, conservation plans for endangered species, engagement of local communities in conservation, pilot-projects for Biodiversity valuation, scientific research, among others.

Unfortunately, these advances are not consequential due to the lack of integration and continuity of conservation actions, the weaknesses inherent to territorial discontinuity and lack of assumption of the value of Biodiversity by the different actors.

Capítulo 9

Prioridades nacionais e metas de conservação da Biodiversidade 2014 - 2025

9. 2014-2030 National Biodiversity Conservation Priorities and Goals

9.1 National Priorities

The national priorities on which conservation actions should focus were selected in a participatory manner, during two regional workshops with key sectors of society, in addition to face-to-face meetings held during on-the-field visits.

During the workshops, the sectors developed proposals of national priorities, based on their knowledge and perception of the current state of conservation of the Cabo-verdean Biodiversity and the main problems and threats at the source of Biodiversity loss.

As a result of workshops in Praia and Mindelo, 32 national priorities were initially identified in the two islands. Afterwards, these were synthesized and grouped into seven major national priorities, namely:

1. Involvement of the society in biodiversity conservation (population, public and private organizations, NGOs and associations);
2. Integrate the importance of biodiversity in strategies, plans, policies and programs of action;
3. Reduce pressures and threats on marine and terrestrial Biodiversity;
4. Conservation of priority habitats and sustainable management of natural resources;
5. Valorization and increased resilience of ecosystems;
6. Enhance knowledge, monitoring and assessment of biodiversity;
7. Mobilization of funds.

These priorities reflect the needs of the country on issues related to conservation and enhancement of national Biodiversity in its various aspects and they were proposed based on the "Diagnosis of the causes and consequences of Biodiversity loss in Cabo Verde and its

relationship to human well-being" (2014) developed to support this Biodiversity Strategy and National Action Plan.

National Priority 1. Involvement of the society at large in biodiversity conservation (population, public and private organizations, NGOs and associations)

The welfare of all Cabo-verdeans depends entirely on biodiversity, which supports the ecosystems and a wide range of essential services that provide availability of food, drinking water, raw materials for various economic activities, natural disaster protection, health and leisure, among others.

The involvement and participation of all sectors of society in Biodiversity conservation is essential to halt the ongoing degradation and ensure the preservation and maintenance of the biological diversity of the country.

It is of general consensus that the population and the different sectors of activity (i.e. agriculture, fishing, forestry, construction, tourism and services) that exert pressure on biodiversity should be aware of the importance and value of Biodiversity in order to improve their attitude and actions towards Biodiversity. Communication, awareness and education are key to achieve this.

It is necessary to strengthen communication and the effective participation of all sectors of society, in particular, of those who are closest to the resources that they themselves should protect. The best available information on biodiversity in the country should be disclosed and made accessible to enable good decision-making.

Special attention should be given to the private sector which should be encouraged to engage in Biodiversity conservation efforts.

National Priority 2. Integrating the importance of biodiversity in strategies, plans, policies and programs of action;

Effective biodiversity conservation can only be guaranteed if environmental awareness and the involvement of people and various economic sectors are enhanced. In order to be better managed and conserved, Biodiversity must be fully integrated into national strategies, policies (i.e. poverty reduction) and broader planning processes.

Biodiversity should be cross-cut to all levels and should be an important factor in the decision making of various sectors and economic activities. In order for Biodiversity to be cross-cut and mainstreamed into decision-making processes, on the one hand, it is necessary to know the value of Biodiversity and, on the other, there should be better communication and cooperation among the different ministries and sectors.

One way of strengthening communication and cooperation among the various ministries is to develop and implement integrated sectoral plans. And this should commence with the key ministries that oversee agriculture, forestry, fisheries, education, tourism and construction. Another way to mainstream biodiversity is to promote the implementation of the strategic environmental assessment.

Society at large and economic activities such as tourism, fisheries, agriculture and construction all benefit from Biodiversity and ecosystem services. However, these benefits and the cost of degradation and Biodiversity loss are not fully reflected in the national economic system. Economic valuation of Biodiversity and ecosystem services can be difficult to accomplish, but it allows assigning a price to the value of Biodiversity.

Establishing and developing a market for Biodiversity and ecosystem services can also be a means of enhancing and valuing biodiversity. There is already a market for the observation of species such as turtles, birds and whales.

In addition, it is equally important to develop mechanisms to encourage investments by and the interest of economic operators when implementing projects that integrate the rational use and conservation of natural resources.

National Priority 3. Reduce pressures and threats on marine and terrestrial Biodiversity;

Despite the efforts and numerous conservation initiatives developed over the past years, pressures and threats on biodiversity have remained and, in some cases, have even increased.

Currently, the main threats to biodiversity in Cabo Verde are: overexploitation of marine and terrestrial resources, destruction and degradation of habitats, existence of invasive species, poor organizational management and legislative applicability, poor environmental knowledge and awareness and climate changes.

Reducing pressures and threats entails behavior change, adopting good practices and recognizing the importance of biodiversity. The scope of this national priority is therefore dependent on the success of the Priority 1.

National Priority 4. Conservation of priority habitats and sustainable management of natural resources

The extension of areas deemed priority areas and which were designated as protected areas has increased in recent years. Currently, of the 47 areas designated in 2003, 34 protected areas have now been delimited and 3 have approved management plans.

However, coverage is still insufficient for the number of ecosystems and species representative of national biodiversity that need to be preserved, particularly regarding marine areas. There are still other 26 protected areas waiting approval, including the one estimated to be the largest marine protected area in the country: Santa Luzia and islets of Ilhéu Branco and Ilhéu Raso.

Consolidation of the protected areas network is one of the privileged forms of conservation that will require the Government to establish new mechanisms to support the implementation of effective protected areas management in partnership with communities, NGOs, private sector and international partners.

For certain priority species threatened with extinction, their conservation status should be improved and focus should be placed on monitoring and valuation of such species.

Particular attention should be given to improving the genetic heritage of species of economic and cultural value associated with farming and animal breeding.

National Priority 5. Valorization and increased resilience of ecosystems

Resilience is defined as the ability of an ecosystem to regain balance after the occurrence of a disturbance. Healthy ecosystems can self-organize themselves and are able to recover and adapt to changes. However, degraded ecosystems are less resilient and, as a result, are slower to recover which ultimately compromises their functions.

Biodiversity and ecosystems in Cabo Verde are subject to many pressures, and some important ecosystems are already degraded (see Chapter 6 in this regard) and, most likely, with part of their functions already compromised.

It is important to invest in strengthening the resilience of key natural ecosystems in Cabo Verde in order to ensure the maintenance and increase of the benefits of essential services their offer to the economy and welfare of the population (i.e. food, raw materials for economic activities, health, and leisure). But to maintain and restore the ecosystems identified as a national priority is necessary to know them and recognize the importance of both services rendered and potential services.

On the other hand, maintenance and recovery of priority ecosystems as part of an eco-systemic approach will enhance and strengthen connectivity between the various ecosystems and natural spaces, preventing them from being managed in an isolated and compartmentalized manner, thus providing biodiversity conservation and persistence.

Other important factors that influence the biodiversity resilience is climate change which affects the habits of species, forcing them to adapt or pushing them to extinction. Thus, all approved national conservation strategies and plans will integrate elements of resilience and adaptation to climate change

Reducing the direct causes of biodiversity loss will contribute to the maintenance of essential ecosystems and prevent them from becoming degraded. The major challenge will be to invest in the prevention of ecosystems rather than allocate significant amounts to their recovery. Local communities that make direct use of biodiversity as well as NGOs and community associations will be important actors to get involved in the protection and management of conservation areas.

National Priority 6. Enhance knowledge, monitoring and assessment of biodiversity

The efficiency of biodiversity conservation actions is closely related to the knowledge one has of them. We give more value and protection to what we know than to what we don't know. Knowledge, be it traditional or scientific, enables us to prioritize the areas and species to be conserved and to invest efficiently in actions that contribute to biodiversity conservation in the long-term.

Despite the various studies conducted under conservation projects, school-works, master's dissertations and doctoral theses that were mentioned in the Analysis Document and this Strategy paper, there is a huge void of information on national biodiversity, with particular relevance for marine biodiversity as it is considerably more expensive to obtain. It was only very recently (with the processes of creating the marine areas of Murdeira, Santa Luzia and Ilhéu Branco and Ilhéu Raso) that national capacity on the matter was put in place.

On the other hand, various studies and researches are scattered and, very often, not known of because they are not available in a continuously updated database platform. There is therefore the need to systematize and disseminate all existing information on national biodiversity and Biodiversity conservation, to prevent unnecessary waste of resources on similar topics. The information should be equally accessible to all and in a language that ensures understanding and promotes improved behavior and decision making.

Currently, there are several entities such as research institutes, universities, NGOs, municipalities and State institutions that conduct studies and research on endangered species and representative areas of national biodiversity, but not in an aligned and systematic manner. In the case of sea turtles, the methodologies for collecting, processing and analyzing data vary from entity to entity.

This Strategy will henceforth guide all actions on Biodiversity conservation and enhance collaboration and cooperation among the various entities involved, to the benefit of better results in the conservation of the species.

Some baseline studies and research on the Cabo Verde biodiversity have already been conducted, but the vast majority remains yet to be done. Research involves considerable sums of money and technical ability. We should then prioritize the needs of knowledge on Biodiversity to better define and prioritize conservation and management measures that will ensure continued long-term results. We should also favor the training of professionals working in the field, thus promoting the principle of "*learning by doing*".

Traditional knowledge should be equally valued and integrated into national biodiversity conservation.

In order to know if conservation efforts are effectively generating results and if they do not require adjustments and a new priority, a monitoring system should be implemented and include key indicators to assess the state of biodiversity.

National Priority 7. Mobilization of funds

The country should put in place mechanisms to mobilize national and international resources to ensure the implementation of the Strategy. Presently, most resources for the environmental and biodiversity conservation have been directed to Cabo Verde through multilateral funds, bilateral cooperation and international NGOs.

The Global Environmental Facility (GEF) is a multilateral fund that has contributed the most to Biodiversity conservation in Cabo Verde. GEF has funded two projects a total of over 8 million USD for the creation and consolidation of the network of protected areas in the country.

In addition, through its Small Grants Program to NGOs (GEF SGP), more than one million eight hundred thousand dollars have invested, to date, in projects spanning over several focal areas.

Table 2. Number of Projects funded by GEF-SGP by Focal Area, in USD, between 2009 and 2013)

Focal Area	Projects	Amount (in USD)
Biodiversity	35	474 594
Climate change	15	395 100
International waters	3	75 500
Multifocal areas	6	80 409
Chemicals	3	38 300
Land degradation	39	565 888
Adaptation to climate changes	7	133 385
Capacity-building	5	88 000

Source: GEF-SGP, 2014

In addition, there are funds from the United Nations Development Program (UNDP), the United Nations Environment Program (UNEP) and UNESCO for the establishment of biosphere reserves.

Similarly, bilateral cooperation with countries like the Netherlands and Spain have resulted in funds being allocated to the environment through budget support. Between 2005 and 2007, the Netherlands Government provided Cabo Verde with approximately 10 million Euros for the implementation of the second National Action Plan for the Environment (PANA II) and to the Education sector.

The budget support provided by the Government of Spain for the same period amounted to at least 3 million dollars. This amount was distributed to the implementation of PANA II, particularly for water and sanitation. More recently, in 2013, the Spanish Cooperation funded the preparation of management plans for protected areas in Maio.

Several conservation projects were also implemented with funds from bilateral and international NGOs. One example of such projects is the Marine and Coastal Conservation Project, implemented by WWF - WAMER and funded by the Dutch government.

National funds are much more modest, but equally important because they cover actions related to sanitation, conservation of species, and conservation of soil and water resources, among others. Still in regard to water and sanitation, there are projects funded under the Millennium Challenge Account and the Luxembourg Cooperation indirectly contributing to biodiversity conservation.

However, international cooperation funds show signs of decline. The problem arising from this type of financing is that once the amounts finish so do the conservation projects and activities, which must be continuous.

This Strategy will have a plan for the mobilization of funds that encompasses the search for international partners and the involvement of key institutions in their application. These institutions should include activities to implement the Strategy in their annual plans.

9.2 Goals

Of the goals identified along the NBSAP preparation process, 15 goals were retained for Cabo Verde.

The goals presented have been prepared in accordance with the context and national priorities of the country. The intention was also to reach a set of goals that were achievable and capable of being monitored. These are distributed among the 5 Strategic objectives proposed by the Convention on Biological Diversity, and aligned with the CBD Aichi Targets.

STRATEGIC OBJECTIVE A. Address the underlying causes of biodiversity loss by mainstreaming biodiversity across all levels of government and society Address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society

1. By 2030, society at large will be aware of the importance and values of Biodiversity and the measures required for its conservation and sustainable use;
2. By 2025, the ecological, economic and social values of biodiversity will have been integrated into national and local strategies and planning, and poverty reduction processes, and duly incorporated in national accounts

3. By 2025, the government, businesses and civil society will have implemented plans and measures to ensure the sustainable production and consumption, while maintaining the impacts of use of natural resources well within safe ecological limits

STRATEGIC OBJECTIVE B. Reduce the direct pressures on Biodiversity and promote its sustainable use Reduce the direct pressures on biodiversity and promote sustainable use

4. By 2018, pollution will be reduced, its sources identified and controlled to levels that are not detrimental to the normal functioning of ecosystems
5. By 2020, marine resources of economic interest will be managed sustainably

STRATEGIC OBJECTIVE C: Improve the state of Biodiversity by safeguarding ecosystems, species and genetic diversity. To improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity

6. By 2025, at least 20% of terrestrial areas and 5% of coastal and marine areas, especially those of ecological relevance and importance will be conserved through a coherent system of PAs and managed effectively and equitably through the implementation of Special Management Plans for Protected Areas (SMPPA)
7. By 2025, endangered and priority marine and terrestrial species will be conserved and enhanced
8. By 2025, improve the genetic heritage of cultivated plants and domesticated animals with economic and cultural value

STRATEGIC OBJECTIVE D. Increase the benefits of Biodiversity and of ecosystem services for all

Enhance the benefits to all from biodiversity and ecosystem services

9. By 2025, Cabo Verde will have strengthened protection, improved connectivity and recovered key ecosystems so that they will continue to provide essential services to the economy and the welfare of the population
10. By 2018, thus, all approved national conservation strategies and plans will integrate elements of resilience and adaptation to climate change
11. The Nagoya Protocol will have been implemented by 2015

STRATEGIC OBJECTIVE E. ***Increase implementation through participatory planning, knowledge management and capacity building*** Enhance implementation through participatory planning, knowledge management and capacity building

12. By 2015, Cabo Verde will have adopted the NBSAP as policy instrument and will have commenced implementing it with the broad participation of all key sectors of society
13. By 2025, local communities will have full and effective participation in the implementation of conservation programs and their traditional knowledge valued
14. By 2025, scientific and empirical knowledge will contribute to the conservation of Biodiversity in Cabo Verde
15. By 2025, Cabo Verde will have mobilized the necessary financial resources to implement the Strategy.

Capítulo10

Implementação da Estratégia e Plano de Ação

10. Implementation of the Strategy and Plan of Action

With the organizational structure of the Ministry of Rural Development, published in the Official Bulletin No. 12, 1st Series, of February 26, 2013, the Directorate General of Environment ceased to exist. The National Directorate of Environment was created in its place, under the Ministry of Environment, Housing and Territorial which the following responsibilities in the environment and natural resources sector:

- Plan, study, propose, implement and coordinate policies for the sectors of the environment, housing, decentralization and regional development, urban and land management;
- Participate in the definition and implementation of natural resource policy, and actions for the protection of environmental components and natural heritage;
- Promote and coordinate the preparation of the environmental policy national plan;
- Prepare and execute the national strategy for nature and biodiversity protection and conservation.

The organizational structure provides that the Minister has the power to articulate with ten other Ministers. However, with regard to the environmental aspects he/she articulates only with the Minister of Rural Development, on the management of natural resources, and with the Minister of Infrastructure and Maritime Economy on management of the coastline.

From the institutional point of view, there are several entities (MAHOT, MDR, MIEM, MTIE) with direct involvement in the management of natural areas and with competences in the environmental area. However, it must be noted that coordination in most cases is insufficient or absent, without enough care for the alignment and coordination of the various existing legal instruments that so require it. There are examples of conflicts between policies related to biodiversity conservation and development policies or sectoral policies such as tourism that have limited some of the effectiveness of protected areas.

Despite the legislative consolidation effort that has been observed and the fact that the legislation in effect does mention that the above ministries should articulate among themselves, environmental policies are still not understood as cross-cut to all sectors of productive activity. This only favors the development of projects and or activities that rather than complement each other, sometimes obstruct harmonious and sustainable development.

Law No. 86 / IV / 93 of June 26, which defines the bases of Environmental Policy, established the broad guidelines of environmental policy and constitutional norms that should govern relations between Man and the environment, in order to ensure effective protection of its various components. In terms the limiting conditions of the Act, both public administration and private institutions are required to comply with the provisions of the Law. Decree-Law No. 2/2002, of January 21, prohibits the extraction and exploitation of sand from dunes, on beaches and inland waters, coastal waters and in the territorial sea. However, there is an unbridled extraction of inert/sand taking place by both municipalities and private operators without obeying any plan or law, with direct implications on the degradation of biodiversity and its habitat, thereby undermining the country's economic development.

Since one of the objectives of the NBSAP is to define a strategy to eradicate the sources of the causes and consequences of biodiversity loss identified during its preparation phase and as integration and accountability of the various partners is the only way to put into practice the discourse of interdisciplinary approach, it is essential to develop and implement policies, plans, legislation and integrated management of biological resources that articulate the areas of Agriculture, Forestry, Livestock, Fisheries, Tourism, Industry, Health and Civil Construction.

In order to reconcile the different actors in an integrated policy it will be necessary to reorganize the definition and implementation of environmental policy so as to establish a participatory process with all these partners in defining and determining uses of enhancer, preventive, corrective or monitoring aspects.

Failure in the inter-disciplinary and co-accountability nature of policies that regulate the environment will compromise economic development the short-term and survival of Cabo-verdeans if biological diversity and socio-environmental relationships are not integrated into the country's development process.

The governmental structure established by Decree-Law No. 5/95 of 6 February, where the Executive Secretariat for the Environment and the Advisory Committee comprised the Presidency of the Council of Ministers, safeguarded the integration of public actions for protecting the environment for sustained economic development and aimed at important aspects such as maintenance of ecosystems, preservation of genetic heritage, the existence of a new living environment compatible with the sustainability of natural systems. These aspects are being emptied from new policy instruments.

Knowing on the one hand that training, information, and awareness alone are not sufficient to promote biodiversity conservation, and secondly that the disjointed manner in which the various sectors of the national economy have been working does not contribute for improvement in the sector, it is necessary to have an eco-systemic approach in the implementation of any environmental program.

To implement Government policies and programs, the Ministry of Environment, Housing and Land Management should have several partners that include government institutions, research institutions, private sector, higher education institutions, environment protection associations, non-governmental organizations and donors. Permanent or temporary inter-departmental and multidisciplinary working groups should be created under the direction of the Environmental Authority to perform the functions assigned to the Ministry.

The duties of the Directorate General of the Environment should focus on four pillars: a) Develop policies specifically related to the use of natural and environmental protection for all sectors (Tourism, Industry, Agriculture, Forestry, Health, Construction,) that directly interfere with the Environment; b) Oversee the implementation of these policies; c) Promote Education and Training (increase the population's level of environmental awareness);

d) Produce Information and Documentation (compile and distribute environmental information produced in any development sector in the country).

The purpose of the institutional and responsibilities framework is to detail the manner how the social actors of the government and civil society and private sector representatives should articulate with each other in implementing the proposed actions. The intention of the implementation system is to supplement the environmental factors with socio-economic ones since, given the cross-cut nature of biodiversity, each one plays its role in ensuring sustainable development.

Coordination of the implementation of the National Biodiversity Conservation Strategy and Action Plan should be the responsibility of the DGA. Implementation should be led by the entity responsible for the environmental area (EA), with the participation of several ministries that direct or indirectly intervene in the environment. Although at another level, the Private Sector, Municipalities, NGOs and Community Associations should also be involved. Each ministry will ensure the preparation of and oversee sectoral plans but the team will have the direct participation of all the components that intervene in the plan.

The implementation of the different activities proposed under the NBSAP should be the responsibility of the following institutions:

The entity responsible for Protected Areas should lead the process of *on site* conservation of ecosystems biodiversity in conservation units, maintaining the ecological and evolutionary processes, the sustainability of environmental services and the integrity of ecosystems through the Marine and Terrestrial Protected Areas. The following ministries should be involved in the process: MAHOT, MDR, MIEM, MTIE, MESCI, Municipalities, NGOs and community associations;

The entity for the Protected Areas must ensure *ex situ* conservation by joining the natural advantages to tourism investments through INIDA, INDP, Museums and National or Municipal Aquarium. The following ministries should be involved in the process:

MAHOT, MDR, MIEM, MTIE, MESCI, NGOs and Community Associations. Resources from these initiatives can boost the local economies of many municipalities.

The entity for the Protected Areas must ensure the conservation, management and exploitation of forests through protected terrestrial areas and the Directorate General for Agriculture and Rural Development. Municipalities, NGOs and Community Associations should be involved in the process;

The Ministry of Rural Development should ensure genetic improvement through INIDA, INDP and different universities in the country. The MAHOT, MIEM, and MED should be involved in the process;

The Ministry of Infrastructure and Maritime Economy should ensure the production and exploitation of marine resources, as well as all activities related to the use and exploitation of the sea, coastal zones, continental shelf and exclusive economic zone, through the INDP, DGRM, IMP, Shipowners Association , fishermen, while involving the MAHOT, MTIE, MESCI, Universities and research institutions in the process.

The National Directorate of Environment should design the Environmental Education Plan and its implementation should be ensured by schools, NGOs, Community Associations, Municipalities, Radios, Televisions, and should involve the MAHT, MIEM, MTIE, and MESCI.

A platform of institutions could also be created the level of each island and or municipalities with view to an optimal management of natural and human resources. Under appropriate circumstances, these platforms can be interconnected to form networks capable of macro-interventions.

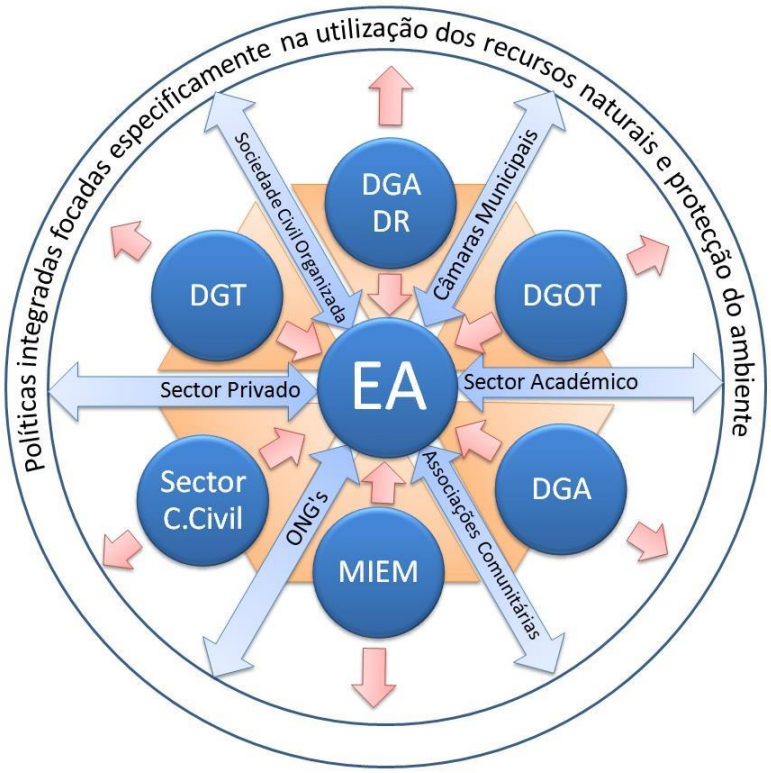
Since Cabo Verde is a young country, this collaboration could also be extended to counterpart institutions abroad and international NGOs with extensive experience in the environmental field.

The importance of true integration among institutions (setting formal rules and standards to build bridges between institutions) with direct impact on the environment has been presented here as a potential to be developed to improve management of biodiversity and resolve current conflicts between institutions in the use of natural spaces.

Articulation between these six sectors and other partners will enable the institution responsible for protected areas to acquire the tools capable of implementing actions that bring balance among environmental components and thus make it possible for the country to have a sustainable economic development.

The following diagram summarizes how we intend to interconnect the various partners in implementing the NBSAP Action Plan.

Figure 3. Articulation system of actors in the implementation of the NBSAP



The successful implementation of the strategy will depend largely on the degree of involvement of all partners in adopting its vision and achieving its goals through the Action Plan, so that the value and importance of biodiversity are reflected in the actions and decisions of all sectors of society.

Given the broad scope of the Strategy, it becomes necessary to prioritize actions to be developed. This requires an assessment of urgent interventions and / or those that should be prioritized because they deal with strategic and cross-cutting issues.

The manner in which the NBSAP was designed and prepared, always bearing in mind the inter-institutional and interdisciplinary approach, will allow participation of several ministries in co-financing the overall budget.

This contribution also involves taking into account the various ongoing projects and all human resource that each partner will allocate in order to fully implement them. For this reason, the implementation phase will be accompanied by procedures resulting from the coordination among the various partners.

Actions

Below are the actions identified in order to achieve the seven national priorities and targets. Some of the actions allow for continuity of conservation activities that precede this Strategy.

Table 1. Priorities, targets, actions and responsable entities

National Priority 1. Involvement of the society at large in biodiversity conservation (population, public and private organizations, NGOs and associations)		
Targets	**Actions**	**Responsibilities**
1. By 2030, society at large will be aware of the importance and values of Biodiversity and of the measures required for its conservation and sustainable use	A1. Raise awareness among various sectors of society (population, public and private agencies, communities and media) on the importance and value of biodiversity and involve them in conservation activities	▪ All government areas ▪ Municipalities ▪ NGOs ▪ Private Sector
	A2. Develop and implement training programs to enhance knowledge on biodiversity and its conservation (government agencies, communities, NGOs, media)	▪ Government, Education sector ▪ NGOs
	A3. Develop strategy to encourage and increase private sector involvement in biodiversity conservation	▪ Government ▪ Private Sector
National Priority 2. Integrating the importance of biodiversity in strategies, plans, policies and programs of action		
2. By 2025, the ecological, economic and social values of biodiversity will have been integrated into national and local strategies and planning, and poverty reduction processes, and are duly incorporated in national accounts	A4. Prepare and implement integrated sectoral plans (agriculture, forestry, fisheries, education, tourism and construction) thus minimizing negative impacts on Biodiversity	▪ Government ▪ Municipalities ▪ NGOs ▪ International Partners (donors)
	A5. Promote the adoption of Integrated Area Management Approach (IAMA)	▪ Government ▪ Municipalities
	A6. Conduct an economic assessment of Cabo Verde's priority biodiversity and ecosystems (example: Millennium Ecosystem Assessment)	▪ Government, Environment sector ▪ Municipalities ▪ NGOs ▪ Private Sector ▪ International Partners
3. By 2025, government, businesses and civil society will have implemented plans and measures to ensure the sustainable production and consumption, while maintaining the impacts of use of natural resources well within safe ecological limits	A7. Develop mechanisms to encourage investments and interests of economic operators in the implementation of projects integrating the rational use and conservation of natural resources	▪ Government (Econom, Environment, Tourism, Infrastructures, Cabo Verde Investment Agency) ▪ Private Sector
	A8. Promote and implement Strategic Environmental Assessment (SEA)	▪ Government ▪ Municipalities

	A9. Promote and develop a system to award product quality seal	▪ Government ▪ Private Sector ▪ International Partners (donors)
	A10. Develop mitigation and/or preventive measures to address cases of industrial or tourism development that can have destructive impacts on ecosystems and species.	▪ Governno ▪ Private Sector
	A11. Develop compensation strategies (biodiversity offsetting) for the inevitable development or cases of mining industry, which may have negative, destructive and irreversible impacts on biodiversity.	▪ Government ▪ Private Sector ▪ International Partners
National Priority 3. Reduce pressures and threats on marine and terrestrial Biodiversity		
4. By 2018, pollution will be reduced, its sources identified and controlled to levels that are not detrimental to the normal functioning of ecosystems	A12. Eliminate or reduce sources of marine and land pollution	▪ Government ▪ Municipalities ▪ NGOs ▪ Private Sector
	A13. Prepare and implement an environmental quality monitoring system	▪ Government (Environment, Research Instituions, Universities) ▪ Municipalities ▪ Natural Parks
5. By 2020, marine resources of economic interest will be managed sustainably	A14. Develop and implement marine resources exploitation and monitoring plans	▪ Government, ▪ Communities and NGOs ▪ Private Sector
	A15. Promote the prospection of new marine resources including those of economic importance that are sensitive and or threatened.	▪ Government (INDP, Fisheries, Environment) ▪ International Partners
	A16. Promote an ecosystem approach to marine resources management in identified areas	▪ Government (Fisheries, INDP) ▪ NGOs and Representatives from fishing communities ▪ Private Sector
	A17. Promote and regulate activities that value marine resources	▪ Government (Fisheries, Environment, Tourism ▪ NGOs and Associations

National Priority 4. Conservation of priority habitats and sustainable management of natural resources		
6. By 2025, at least 20% of terrestrial areas and 5% of coastal and marine areas, especially those of ecological relevance and importance will be conserved through a coherent system of PAs, managed effectively and equitably through the implementation of Special Plans for Management of Protected Areas (SPMPA)	A18. Improve efficiency of Protected Areas management	▪ Protected Areas Management Entities ▪ Government (Environment) ▪ NGOs and
	A19. Identify and designate new PAs	▪ Government ▪ Universities and Research Instituions ▪ NGOs and Communities ▪ International Partners
	A20. Promote inclusion and valuation of protected areas in the context of national development	▪ Government (Environment, Turismo,...) ▪ Protected Areas Management Entities ▪ NGOs and Communities ▪ Private Sector
7. By 2025, endangered and priority marine and terrestrial species will be conserved and enhanced	A21. Develop and implement on site conservation programs for main endangered species	▪ Protected Areas Management Entities ▪ NGOs and Communities
	A22. Develop and implement monitoring programs for priority habitats	▪ Protected Areas Management Entities ▪ Universities and Research Instituions ▪ Government (Environment)
	A23. Increase forestation activities with native species	▪ Government ▪ Protected Areas ▪ NGOs and Communities
	A24. Develop a new list Red of Cape Verde and update it every five years	▪ Government ▪ Universities and Research Instituions ▪ International Partners
	A25. Develop and implement national conservation and monitoring plans for threatened species or groups of species	▪ Government ▪ Universities and Research Instituions ▪ NGOs and Communities
	A26. Develop and implement control program for invasive species	▪ Government ▪ Protected Areas ▪ NGOs and Communities
	A27. Develop and implement pilot projects for valuation of threatened species	▪ Government ▪ NGOs e Communities
8. By 2025, improve the genetic diversity of cultivated plants and domesticated animals with economic and cultural value	A28. Develop and update inventory on genetic resources (phyto-genetic and agro-genetic)	▪ Government ▪ Universities and Research Instituions
	A29. Develop / support and implement a conservation program for genetic	▪ Government ▪ Universities and

	resources (phyto-genetic and agro-genetic)	Research Instituions ▪ Communities
	A30. Encourage the implementation of cross-breeding programs for domestic animals and cultivated varieties to improve these biological resources without losing the best features of existing local genetic heritage	▪ Government ▪ Universities and Research Instituions ▪ Communities
	A31. Promote exchanges and establish protocols with institutions associated to genetic preservation	▪ Government ▪ Universities and Research Instituions
National Priority 5. Valorization and increased resilience of ecosystems		
9. By 2025, Cabo Verde will have strengthened protection, improved connectivity and recovered key ecosystems so that they will continue to provide essential services to the economy and the welfare of the population	A32. Identify biodiversity and ecosystem providers of priority essential services, of particular value for biodiversity and vulnerable populations (women and the poor) and promote their protection and monitoring	▪ Government ▪ Universities and Research Instituions ▪ International Partners ▪ Private Sector ▪ NGOs and Communities
	A33. Conduct a diagnosis of degraded ecosystems and select the key ones to be recovered, for the benefit of biodiversity conservation and mitigation of climate change effects	▪ Government ▪ Protected Areas ▪ Universities and Research Instituions ▪ NGOs
	A34. Develop and implement an action plan for control and sustainable extraction of inert	▪ Government ▪ Universities (nacionais e internacionais) ▪ Private Sector
	A35. Enhance connectivity existing among the priority ecosystems through ecological corridors	▪ Government ▪ Protected Areas ▪ NGOs and Communities
	A36. Strengthen participatory management programs and projects of protected areas for the benefit of local communities, particularly women	▪ Protected Areas ▪ NGOs and Communities
	A37. Implement training Programs on participatory management for professionals and local communities	▪ Protected Areas ▪ NGOs and Communities ▪ International Partners
10. By 2018, all approved national conservation strategies and plans will integrate elements of resilience and adaptation to climate change	A38. Include elements of resilience to climate change in the development / revision of Conservation Management Plans and Plans of Action	▪ Government ▪ Protected Areas ▪ NGOs and Communities

	A39. Develop initiatives to increase Biodiversity's contribution to ecosystems resilience	▪ Government ▪ NGOs and Communities ▪ Private Sector
	A40 Develop and implement a soil and water conservation (SWC) program aimed at combating erosion, increasing water availability and preventing Biodiversity loss in protected areas	▪ Government ▪ NGOs and Communities ▪ Private Sector
	A41 Improve and implement the monitoring system for climate change effects on Biodiversity	▪ Government ▪ Universities and Research Instituions ▪ NGO and Communities
11. The Nagoya Protocol will have been implemented by 2015	A42 Ratify the Nagoya Protocol	▪ Government ▪ NGO and Communities
	A43. Conduct inventory of the country's genetic resources and possible uses in compliance with Protocol guidelines	▪ Government ▪ NGO and Communities ▪ National and international Universities ▪ CBD
	A44. Harmonize national legislation with the Nagoya Protocol	▪ Government
	A45. Implement awareness activities targeting users of genetic resources	▪ Government ▪ NGOs and Communities
National Priority 6. Enhanced knowledge, monitoring and assessment of biodiversity		
12. By 2015, Cabo Verde will have adopted the NBSAP as an instrument of policy and will have commenced implementing it with the broad participation of all key sectors of society	A46. Evaluate implementation of the NBSAP - Monitor and evaluate proposed case studies	▪ Government ▪ NGOs and Communities ▪ International Partners
	A47. Review, update, adjust and implement all environment relevant legislation	▪ Government
13. By 2025, local communities will have full and effective participation in the implementation of conservation programs and their traditional knowledge valued	A48. Compile and analyze the relevance and value of all existing information and traditional knowledge on Biodiversity use (study on indigenous knowledge and traditional practices)	▪ Government ▪ NGOs e Communities ▪ Universities and

		Research Instituions
	A49. Promote the exchange of (traditional and scientific) knowledge in order to enhance the role of traditional knowledge in BD conservation	▪ Universities and Research Instituions ▪ NGOs and Communities
	A50. Implement capacity-building plan for associations, NGOs and most vulnerable groups	▪ NGOs ▪ Protected Areas ▪ GEF-SGP
	A51. Increase employment opportunities for local communities in biodiversity conservation	▪ Government ▪ NGOs ▪ Private Sector
14. By 2025, scientific and empirical knowledge will contribute to the conservation of Biodiversity in Cabo Verde	A52. Compile and disseminate all existing information on biodiversity, the causes and consequences of its loss, ecosystem services and other relevant aspects	▪ Government
	A53. Assess and prioritize needs of knowledge on biodiversity and of training for professionals in the area, to better define conservation measures	▪ Government ▪ Universities and Research Instituions ▪ NGOs
	A54. Develop and implement a strategy to foster research applied to national biodiversity (terrestrial and marine components) and the sustainable use of resources	▪ Government ▪ Universities and Research Instituions ▪ Private Sector
	A55. Implement capacity-building plan for professionals by applying the principle of "learning by doing"	▪ Government ▪ Universities and Research Instituions
National Priority 7. Mobilization of funds		
15. By 2025, Cabo Verde will have mobilized the necessary financial resources to implement the strategy.	A56. Develop and implement a plan for mobilization of resources to implement the Strategy	▪ Government ▪ Municipios ▪ NGOs ▪ International Partners
	A57. Incorporate activities to implement the Strategy in the budget of the Ministry of Environment and other relevant ministries (i.e. fisheries, agriculture, tourism, infrastructure)	▪ Government

	A58. Promote the establishment and operation of a platform of institutions, by island, seeking the optimal management of resources	▪ Government ▪ Municipalities
	A59. Promote convergence / integration of Plans, Programs and Projects and analyze the allocations provided in similar activities to reduce costs and ensure additional resources ti implement the Strategy	▪ Government ▪ Municipalities ▪ NGOs ▪ International Partners

Capítulo11

Seguimento e monitorização

11. Follow-up and monitoring

Implementing a National Biodiversity Strategy and Action Plan entails challenges of both financial, institutional, and technical nature. Often during implementation, one encounters obstacles and situations that hinder or impede its realization, jeopardizing the achievement of proposed goals.

Thus, the follow-up and monitoring system is a key tool in ensuring interaction between planning and execution, enabling correction of deviations, and ongoing feedback throughout the planning process, thus maximizing the experience gained with the implementation of the Plan.

Due to changing situations on the ground and the possible changes to the implementation environment, the National Biodiversity Strategy and Action Plan is a guiding tool for actions related to biodiversity conservation and enhancement. Therefore, the NBSAP should be designed in a flexible and dynamic way, as a gradually improving process.

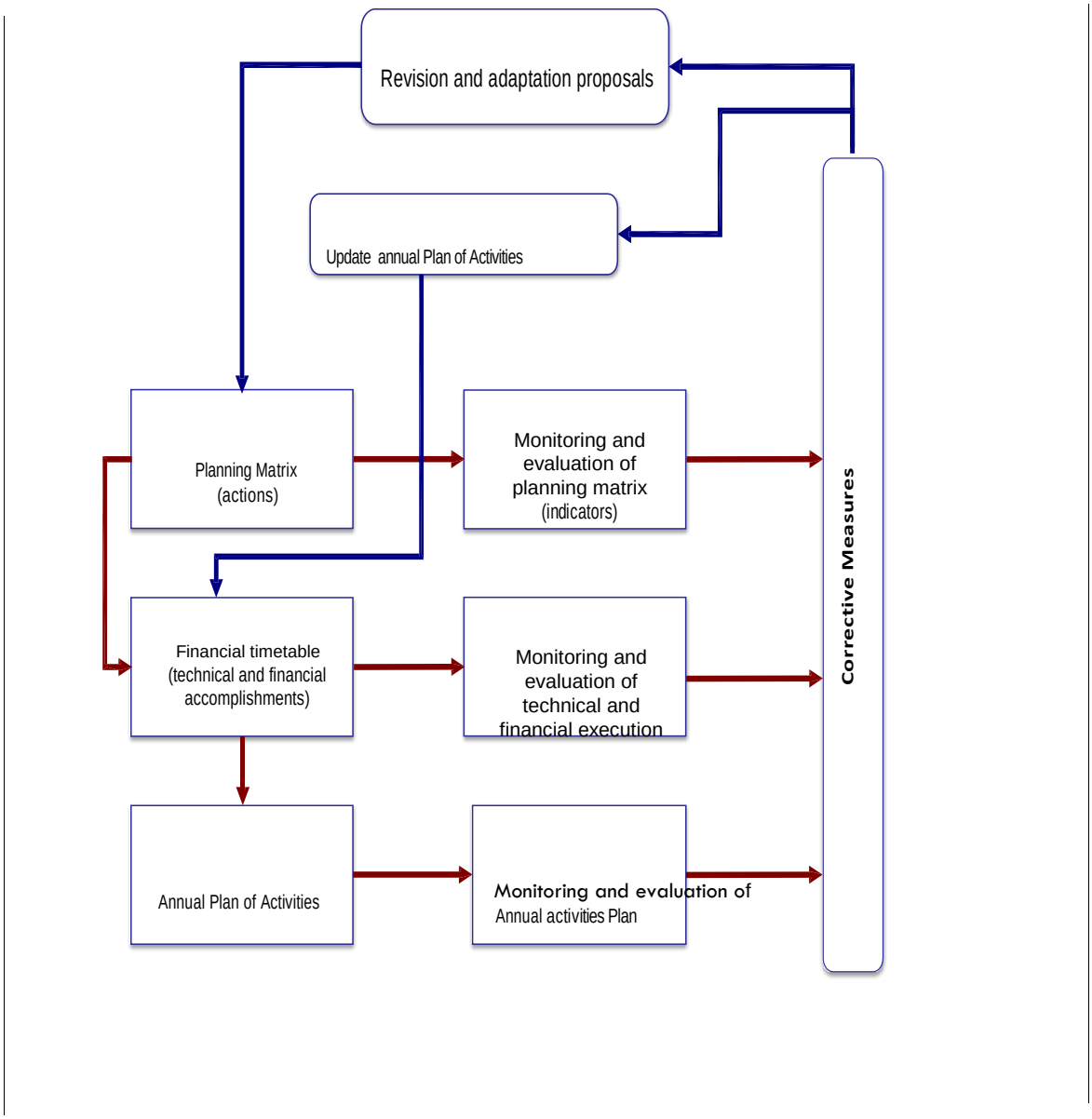
In this sense, the role of the follow-up and monitoring system goes beyond simple monitoring of implementation. In addition to systematically documenting the process, it also evaluates the deviations in the implementation of proposed actions, provides a diagnosis of the possibilities of achieving the objectives and targets set, and recommends corrective actions for adjustment or re-planning. The follow-up and monitoring system should firstly ensure compliance of planned actions and, on the other, must be able to propose adjustments to the Action Plan prepared, in case of any changes that may arise in the context and/or in the external environment.

Follow-up and monitoring of the National Biodiversity Strategy and Action Plan should ensure ongoing and systematic coordination of the implementation team as well as integration of actions planned in the NBSAP with other national plans and policies and the various stakeholders involved.

Moreover, an external follow-up should also be conducted periodical or circumstantially, by the National Follow-up Committee designated by the National Council of Ministers responsible for the Environment sector.

The proposed follow-up and monitoring scheme is as follows in the figure below:

Figure 4. NBSAP Follow-up and monitoring scheme



Evaluation of the implementation of the National Biodiversity Strategy and Action Plan should be performed annually and systematically by the technical coordination team or by the proposed monitoring committee, based on follow-up reports produced.

The Coordinating Committee shall submit an annual technical follow-up report in the first quarter of each year. This report should allow identifying: the level of achievement of the annual implementation plan, the progress made toward the NBSAP goals, and proposed guidelines for the annual implementation plan for the following period. After considering the report and the proposals presented therein, governmental entities involved shall decide on the guidelines and priorities for conservation actions.

To allow for the necessary regular adjustments and compliance with recommended goals, the implementation of this Strategy should be subject to evaluation every three years, based on a report prepared with contributions from different sectoral ministries and other entities involved.

These evaluations every three years should be coordinated by the Directorate General of Environment and must be approved by the Inter-ministerial Coordination Committee, established by prior opinion of the National Environment Council. The evaluations should consider, among other things, the implementation rates, availability of resources, and the contribution to the effective conservation of biological resources in Cabo Verde and its rational use. Contributions from the different ministries to this evaluation process shall include an expressed reference on the appropriateness or necessity of revising existing sectoral strategic planning instruments, as well as the relevance of developing plans for further action.

This assessment should be coordinated, whenever possible, with the evaluation promoted under the Convention on Biological Diversity and shall take into account the Annual Reports on the State of the Environment, submitted by the Government to the National Assembly of the Republic, reflecting the evolution of the situation, and shall include a specific reference to the development of this Strategy. The evaluation should, whenever possible, be based on an analysis of indicators that allow objectively assessing the evolution of the state of biodiversity conservation, the state of species, habitats and ecosystems, as well as the

effectiveness of plans and programs implemented.

Evaluation of the implementation of the National Biodiversity Strategy and Action Plan should take into account the indicators presented, giving special attention to indicators relating to the effective rate of conservation and restoration of endangered species habitats and populations, the decentralized initiatives for conservation and management as well as the promotion of activities that use biodiversity sustainably.

The assessment should be able to converge in order to formulate recommendations to improve the implementation of the Strategy and, where possible, indicate the appropriate measures to be adopted, revised or enhanced in order to pursue the expected objectives.

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Integrada e Participativa dos ecossistemas nas Áreas Protegidas, Fase I Ministério do Ambiente e Agricultura da Republica de Cabo Verde

13. Attachments

Annex 1. Strategic Framework on Objectives, Targets, and Indicators

Strategic Framework on Objectives, Targets, and Indicators					
Objectives	**Goal**	**Indicator**	**Reference Values**	**Verification Means**	***Risks and Assumptions***
Objective A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across all levels of government and society	1. By 2030, society at large will be aware of the importance and values of Biodiversity and the measures required for its conservation and sustainable use	– 60% of sectors (media, NGO, private sector) with skills in Biodiversity conservation – Number and quality of programs and/ or education material implemented - Number of people (individual and collectivelly) participatig in Biodiversity conservation activities		Annual assessment by the Communications Department Annual Report by the Environment Authority National TV and Radio Progras Results from the national survey	That DGA has an updated database on Biodiversity in Cape Verde That necessary resources are allocated to the Communications Department That appropriate means are used for each target audience That the population is receptive to awareness and training
	2. By 2025, the ecological, economic and social values of biodiversity will have been integrated into national and local strategies and planning, and poverty reduction processes, and duly incorporated in national accounts	- Establishment of a legal framework for Strategic Enviornmental Assessment - SEA - Implementation of the SEA at all Biodiveristy related planning levels - Economic assessment of Biodiversity in priority ecosystems - Integration of Biodiversity values in National Plans and Strategies		Reports from SEAs conducted Report on economic Biodiversity assessment of priority ecossystems National plans and Strategies integrating biodiversity	

Strategic Framework on Objectives, Targets, and Indicators					
Objectives	**Goal**	**Indicator**	**Reference Values**	**Verification Means**	***Risks and Assumptions***
Objective A: Address the underlying causes of biodiversity loss by mainstreaming biodiversity across all levels of government and society (Cont.)	3. By 2025, government, businesses and civil society will have implemented plans and measures to ensure sustainable production and consumption, while maintaining the impacts from the use of natural resources well within safe ecological limits	– # of businesses with a quality and /or environment management system implemented – # of plans/strategies submitted to a Strategic Environmental Assessment (MMP/UMP/ITDZ) – 50% penetration of renewable energies nationwide – Fisheries / Protected Areas Management Planos strategically assessed	At least 7 companies with ISO 9001: 2008 and environmental certification, as well Pelo menos 7 empresas certificadas ISO 9001:2008, tendo uma também certificação ambiental Electra (2012): 0,8% wind; 6.5% solar	Annual reports from the Institute for Quality Management SEA Reports on MDP/UPU/ITDZ Anual Reports from Caboeólica and Electra	

Strategic Framework on Objectives, Targets, and Indicators					
Objectives	**Goal**	**Indicator**	**Reference Values**	**Verification Means**	***Risks and Assumptions***
Objective B: Reduce the direct pressures on Biodiversity and promote its sustainable use	4. By 2018, pollution will be reduced, its sources identified and controlled to levels that are not detrimental to the normal functioning of ecosystems	– At least 1 environmental audit inspection performed per year – An environmental quality monitoring system developed and implemented – At least 3 concrete sources of pollution identified		Annual Audit Reports Environment Montoring Reports Implementation Reports on actions and programs to Control Pollution Sources	Discontinuation of funding
	5. By 2020, marine resources of economic interest will be managed sustainably	– At least 4 sensitive marine ecosystems monitored (1 MPA in Sal; 1 MPA in Maio; 1 MPA in Boavista; Santa Luzia MPA); – At least 6 populations and / or under-exploited species (large pelagic / small pelagic / lobster / whelk) identified; – 5 destructive fishing practices eliminated (explosives; bottle; fining; trawling; closed season captures); – 4 MPA operational (Santa Luzia/Sal/Boavista/Maio); – 8 fisheries resources with adequate management measures (tuna, pink lobster, mackerel, horse mackerel, goldfish, Shark, demersal, whelk)		PMA Monitoring Reports Follow-up Reports on Implementation of Fisheries and Priority Species Management Plans Annual Reports on the Management of Santa Luzia, Sal, Boavista and Maio MPA	

Strategic Framework on Objectives, Targets, and Indicators					
Objectives	**Goal**	**Indicator**	**Reference Values**	**Verification Means**	***Risks and Assumptions***
Objective C: Improve the state of Biodiversity by safeguarding ecosystems, species and genetic diversity.	6. By 2025, at least 20% of terrestrial areas and 5% of coastal and marine areas, especially those of ecological relevance and importance, will be conserved through a coherent system of PAs	– 20 Priority protected areas (marine and terrestrial) effectively managed – 80.660 Ha of the country's terrestrial areas and …Ha of marine protected – At least 65% of the annual plan of the Protected Areas Management Entity implemented	3 protected areas effectively managed (10 194,5 ha)	Publication in Official Gazette of Protected (Marine and Terrestrial) Areas Management Plans and Boundaries Annual Follow-up on Total Protected Areas (ha) Annual Reports from Protected Areas Management Authority	Growth and demand for natural spaces for agriculture Climate changes resulting in prolonged drought Discontinuation of funding Forest fires

Strategic Framework on Objectives, Targets, and Indicators					
Objectives	**Goal**	**Indicator**	**Reference Values**	**Verification Means**	***Risks and Assumptions***
Objectivo C: Improve the state of Biodiversity, safeguarding ecosystems, species and genetic diversity (Cont.)	7. By 2025, endangered and priority marine and terrestrial species will be conserved and enhanced	– Update / New Red List of threatened species prepared – 7 conservation and monitoring plans for priority threatened species (marine 5 (shark, corals, turtles, whales, seabirds) and land 2 (Cane-Warbler, purple heron, reptiles)) implemented – At least # of invasive species control program implemented. – 2 pilot-projects for sustainable use of marine and terrestrial biodiversity of Cabo Verde (observation diving, traditional culture of healing) implemented – At least 25% of the diversity of endemic species conserved in their ecosystems of origin (Most are inserted in PAs) – Healing properties of at least 3 terrestrial endemic species are scientifically proven (used in traditional medicine)	Cabo Verde Red List	New Red List of Cabo Verde Annual Reports on Conservation and Monitoring of Priority Species	
	8. By 2025, acquire knowledge and protect the genetic heritage of cultivated plants and domestic animals of economic and cultural value	– Number of inventories on plant genetic resources prepared or updated – Number of legal instruments (seeds) passed – Patenting of at least x varieties of plants of economic and cultural value		Inventory of Phyto.genetic Resources Publication of Legal Instruments in Official Gazette	

Strategic Framework on Objectives, Targets, and Indicators					
Objectives	**Goal**	**Indicator**	**Reference Values**	**Verification Means**	***Risks and Assumptions***
Objective D: Increase the benefits of Biodiversity and of ecosystem services for all	9. By 2025, Cabo Verde will have strengthened protection, improved connectivity and recovered key ecosystems so that they will continue to provide essential services to the economy and the welfare of the population	– Number of projects and programs developed in protected areas through participatory management – Number of investment projects assessed based on pre-defined socio-environmental criteria	Several projects developed in 3 protected areas (PNSM, PNF, PNMG) through participatory management	Report on Economic Assessment of Ecosystem Services Monitoring Reports on Co-managed Programs and Projects	Discontinuation of funding
	10. By 2018, all approved national conservation strategies and plans will integrate elements of resilience and adaptation to climate change	– Number of plans integrating elements of resilience to climate change – 50% incidence of use of clean energy to nationwide – # of protected areas identified as most susceptible to climate change effects with mitigation / adaptation projects		Conservation Plans and Strategies streamlining Elements of Resilience Annual Follow-up Reports of Plans and Strategies	
	11. The Nagoya Protocol will have been implemented by 2015	– Nagoya Protocol ratified by 2014 – Nagoya Protocol implemented and incorporated in National laws		Publication of the Ratification of the Nagoya Protocol in the Oficial Gazette Monitoring Reports on Implementation of the Protocol	

Strategic Framework on Objectives, Targets, and Indicators					
Objectives	**Goal**	**Indicator**	**Reference Values**	**Verification Means**	***Risks and Assumptions***
Objective E: Increase implementation through participatory planning, knowledge management and capacity building	12. By 2015, Cabo Verde will have adopted the NBSAP as policy instrument and will have commenced implementing it with the broad participation of all key sectors of society	– Approval of the NBSAP by Council of Ministers – Implementation of NBSAP is ongoing – Inclusion and participation of all partners in the NBSAP implementation – % of State budget allocated to NBSAP		Publication of the NBSAP in the Official Gazette Annual Follow-up Reports on NBSAP Implementation National Reports on Biodiversity Annual State Budget	Discontinuation of funding
	13. By 2025, local communities will have full and effective participation in the implementation of conservation programs and their traditional knowledge valued	– At least 15 local communities involved in biodiversity conservation in protected areas – At least 20 capacity-building and resource conservation projects targeting local communities each year – At least # of GEF SGP annually funded projects for local communities promoting biodiversity conservation – A pilot project developed following the principles of the Satoyama Initiative – At least 7 initiatives of biodiversity conservation and enhancement streamlining incorporated in the planning and formulation of community actions	7 Local communities participate in Biodiversity conservation in the Natural Parks of Serra Malagueta, Fogo and Monte Gordo Annually funded GEF-SGP projects for Biodiversity conservation	Reports on implemented projects Annual Reports from Protected Areas Management Authority Pictures of community-held conservation activities Annual GEF- SGP Progress Reports	Discontinuation of funding

Strategic Framework on Objectives, Targets, and Indicators					
Objectives	**Goal**	**Indicator**	**Reference Values**	**Verification Means**	***Risks and Assumptions***
Objectivo E: Increase implementation through participatory planning, knowledge management and capacity building (Cont.)	14. By 2025, scientific and empirical knowledge will contribute to the conservation of Biodiversity in Cabo Verde	– At least five biodiversity research programs implemented – At least 10 studies on species / ecosystems conducted – 1 database on species developed and regularly updated – At least 2 Red lists published – Number of ongoing inventories on species used in the implementation of the CBD – At least 5 habitats restored – At least 2 publications on empirical knowledge	1 red list published	Scientific Publications Databases on Species Publication of the Red List of Cabo Verde National Biodiversity Reports List of national universities with Biodiversity Research Programs implemented	Discontinuation of funding
	15. By 2025, Cabo Verde will have mobilized 70% of the necessary financial resources to implement the Strategy	– % Of annual MAHOT budget dedicated to implementation of the Strategy – % of resources mobilized – % of Private Sector engaged in implementation of the Strategy – % of multilateral cooperation budget engaged in the implementation of the Strategy – % of bilateral cooperation budget engaged in the implementation of the Strategy	Annual Protected Areas budget provided by the MAHOT GEF: 8 million dollars between 2006 and 2013 (includes actions from first Strategy) GEF-SGP: 1million eight-hundred thousand dollars (2009 -2013)	Annual Budget Execution Report from the MAHOT and other State institutions in the area of Biodiversity GEF-SGP Budget Execution Reports	

Annex 2. Actions and Specific Activities

Actions	Specific Activities
A1: Raise awareness among various sectors of society (population, public and private agencies, communities and media) on the importance and value of biodiversity and engage them in conservation activities	Develop and implement a comprehensive communications, awareness and information campaign on the Strategy, the importance of Biodiversity and its values
	Build synergies with the institution responsible for the implementation of the National Environmental Education Plan (i.e. develop modules on environment, Biodiversity and Biodiversity conservation for integration into school curricula, set up a communication, education and information center)
	Create opportunities for grants in the field of resources conservation, with emphasis on employment and sustainability in local communities
A2: Develop and implement capacity-building programs to enhance knowledge on biodiversity and its conservation (government agencies, communities, NGOs, media)	Conduct a training needs assessment by target group
	Identify trainers, workshops and other training activities
	Develop training contents
	Implement training programs (workshops, study visits, exchanges, etc.)
	Follow- up on training actions.
A3. Develop and implement a strategy to encourage and increase private sector engagement in biodiversity conservation	Assess the perception of the Private Sector on Biodiversity, conservation values and actions and good practices undertaken
	Conduct an assessment of strategies, programs and experiences (national and international) of private sector engagement and examples of good practices
	Select the sectors to prioritize (tourism, construction, agriculture, fishing)
	Develop a communication and awareness strategy by target group (meetings to socialize the importance and value of Biodiversity, dissemination of the Strategy and legislation, visits to protected areas, exchange visits to share experiences)
	Promote good practices in the private sector and engage them in conservation activities and commemorations of relevant days related to the environment
	Conduct training sessions tailored to the private sector, in partnership with the Chambers of Commerce and Industry and Tourism
	Promote the integration of biodiversity conservation in the structure of corporate social responsibility (including in their reporting system)
	Disseminate the "Green Awards"
A4. Prepare and implement integrated sectoral plans (agriculture, forestry, fisheries, education, tourism and construction) thus minimizing negative impacts on Biodiversity	Establish an inter-sectoral working group or committee, headed by the Environment, to streamline Biodiversity and measures for rational use of resources into sector plans
	Prepare a guide of technical procedures and processes for integration of the various sectoral plans
	Develop plans and programs that integrate biodiversity and promote the rational use of resources
	Strengthen the existing cooperation between the various sectors
	Follow-up on plans and programs (inter-sectoral committee)
A5. Promote an Integrated Area Management Approach (IAM)	Analyze existing gaps and revise the mandates and responsibilities of all institutions involved in the conservation of biodiversity and the environment in general
	Reformulate the powers and responsibilities of the different entities

Actions	Specific Activities
	avoiding conflicts and overlaps
	Develop and implement a pilot project on IAM approach
	Ensure that all uses and activities in the area concerned are coordinated according to a set of accepted policies
	Clarify and promote the effective integration of biodiversity conservation elements in the Strategic Growth and Poverty Reduction Paper (SGPRP)
A6. Conduct an economic assessment of Cabo Verde's priority biodiversity and ecosystems (example: Millennium Ecosystem Assessment)	Define the need for an economic evaluation of biodiversity and priority ecosystems and identify the different evaluation tools in place
	Establish a technical working group, led by the Environment, to define the feasibility, needs, context and extent of the evaluation (draft project document)
	Continuously involve key stakeholders (direct and indirect) to collect subsidies and improve the project document (establish an advisory group)
	Explore funding opportunities and prepare project (s) to look for funding
	Identify, select and hire a multidisciplinary team (national and international consultants) to conduct the evaluation
	Gather the technical working group to assess the results of the evaluation and collect contributions
	Conduct workshop to present the evaluation to the professionals of various public and private institutions, stakeholders, direct users and donors
	Define the "follow-up" to evaluation (integration)
A7. Develop mechanisms to encourage investments and interests of economic operators in the implementation of projects integrating the rational use and conservation of natural resources	Assess (and identify gaps of) existing projects / activities that integrate the use of technologies and techniques compatible with the rational use of resources
	Identify and assess costs and benefits, as well as select mechanisms to encourage the sustainable use of resource by economic operators (subsidies, tax incentives, regulation, ...)
	Promote case study illustrating the need for tax or customs incentives to companies that implement concrete biodiversity conservation actions (i.e. incentives. Financing PA Management Plans, re-exporting of hazardous material)
	Promote the development of a "Sustainable Finance Toolkit" for the tourism sector (PwC has the relevant experience)
	Promote the creation of a Business Council for Sustainable Development
A8. Promote and implement Strategic Environmental Assessment (SEA)	Assess the political, institutional, and legal context, as well as the existing capabilities to perform SEAs
	Define the legal and regulatory framework for the application of SEAs in Cabo Verde
	Strengthen institutional capacities to implement SEA (Develop and implement capacity-building program)
	Develop a roadmap to support implementation of SEAs for key sectors (tourism, fisheries, agriculture)
A9. Promote and develop a system to award product quality seal	Identify and select key sectors and products for granting the Seal of Quality (agriculture, fishing, construction, ...)
	Do an assessment of existing certification systems and identify the most suitable one for the selected products, taking into account credibility, follow-up possibilities, availability and cost
	Create law and regulations for certified products
	Establish incentives (financial and tax) to encourage certification and the demand for certified products
	Promote partnerships among producers

Actions	Specific Activities
	Develop and support outreach campaigns and promotion of certified products
A10. Develop mitigation and/or preventive measures to address cases of industrial or tourism development that can have destructive impacts on ecosystems and species.	A desenvolver
A.11 Develop compensation strategies (biodiversity offsetting) for the inevitable development or cases of mining industry, which may have negative, destructive, and irreversible impacts on biodiversity.	A desenvolver
A12. Eliminate or reduce sources of marine and land pollution	Assess existing legislation and the needs for strengthening in pollution related issues and other relevant concerns
	Strengthen legislation enforcement
	Promote, develop, and implement a policy for the management and exploitation of RSU aimed at resource conservation
	Develop and approve local and national RSU management plans
	Analyze biodiversity impacts arising from productive supply chains and propose alternatives to reduce them
	Do an assessment of the main land-based sources of marine pollution in priority areas
	Develop and implement an action plan to eliminate or reduce land-based sources of marine pollution on selected priority areas
	Conduct periodic environmental assessments in priority coastal and marine areas
	Exchange of data and information
	Sensitize the population to reduce consumption and to reuse waste
	Sensitize key sectors on the effects of their activities on the environment (agriculture, tourism, construction)
A13. Prepare and implement an environmental quality monitoring system	Develop a matrix of standard indicators to measure aspects related to the economic and social environmental conditions
	Monitor the level of air pollution through the use of bio-indicator plants
	Promote environmental reporting by municipalities
	Create a shared information system on environmental quality
	Develop a guide for reporting that incorporates information on the state of the environment and the causal relations that allow understanding the reasons for environmental degradation
	Prepare and publish annual reports on environmental quality in Cabo Verde
A14. Develop and implement marine resources exploitation and monitoring plans	Determine the resources for which it is mandatory to prepare exploitation plans
	Develop and implement plans for exploitation of priority marine resources, with the involvement of direct users
	Inform and raise awareness on the exploitation plans
	Develop skills among human resources responsible for planning, management and implementation
	Strengthen supervision and law enforcement
	Develop indicators and benchmarks and ensure control and performance

Actions	Specific Activities
	Promote study or case studies on moratoria as a preventive measure to protect certain species, such as lobsters, whelks and some demersals
A15. Promote the prospection of new marine resources including those of economic importance that are sensitive and or threatened	Disseminate the results of the MARPROF-CV Project (Potential for New Deepwater Fisheries Resources in Cabo Verde)
	Follow-up on project recommendations
	Encourage the establishment of an independent evaluation committee for the existing fisheries agreements
	Promote the study on the establishment of offshore marine areas (underwater mountains)
A16. Promote an ecosystem approach to marine resources management in identified areas	Develop fisheries management plans using the eco-systemic approach
	Encourage the expansion of marine protected areas
	Promote the establishment of a reliable system for capture and storage, and processing of statistical data on catches of exploitable fish
A17. Promote and regulate activities that value marine resources	Review and develop legislation and regulations on the use of marine resources for tourism and ecotourism
	Ensure implementation of regulations
A18. Improve efficiency of Protected Areas management	Develop and implement annual plans
	Standardize a system of periodic evaluation on the effectiveness of protected areas management (RAPPAM, METT, EOU or other)
	Communicate results of assessments to all stakeholders and make them available in a database
	Strengthen the capacity of evaluation and management teams
	Follow-up on evaluation recommendations
	Promote the creation of PA financing and management efficiency mechanisms
	Encourage institutionalization of public participation in the designation and management of PA
A19. Identify and designate new PAs	Select new areas based on pre-defined criteria (e.g. representativity, complementarity, cost-effect, others)
	Conduct technical studies and define categories
	Engage key stakeholders in the process of selecting and creating new protected areas
	Put in place legal procedures for the creation of new areas
A20. Promote inclusion and valuation of protected areas in the context of national development	Develop and regulate national laws, within areas protected for tourism and ecotourism
	Develop code of conduct for ecotourism and nature tourism in protected areas
	Develop projects for differentiated valuation of biodiversity and of environmental services for ecosystems in protected areas (e.g. Project SAVE-Serra da Estrela; Art Project - Manaus, others)

Actions	Specific Activities
	Develop mechanisms to enhance services and products of protected areas (e.g. certification)
	Promote sustainable tourism and ecotourism supported in local communities
A21. Develop and implement on site conservation programs for main endangered species	Identify endangered species in need of conservation programs
	Develop and implement conservation programs with involvement of all stakeholders
	Promote the establishment of partnerships with national and international academic institutions in the preparation of plans for species protection
A22. Develop and implement monitoring programs for priority habitats	Select priority habitats for monitoring based on characteristics, roles, pressures and threats
	Define monitoring indicators and tools
	Establish monitoring protocols for priority habitats
	Implement monitoring plans
A23. Increase forestation activities with native species	Produce endemic species for forestation
	Implement forestation campaigns with endemic species
A24. Develop a new list Red of Cabo Verde and update it every five years	Set up a scientific coordination group to revise the red list
	Define a methodological roadmap to prepare the red list
	Develop a scientific database to compile information
	(Each workgroup) Draw up a list of endangered species candidates to list
	Consult with national and international experts
	Organize a technical workshop to define the conservation status of candidate species
	Revise, consolidate and publish list
A25. Develop and implement national conservation and monitoring plans for endangered species or groups of species	Promote the establishment of partnerships with national and foreign academic institutions when preparing the protection plans for endangered species or group of species (e.g. endemic
	Implement conservation plans
A26. Develop and implement an invasive species control program	Identify the propagation vectors of invasive species and assess the impacts on ecosystems and biodiversity
	Identify and implement measures for prevention, control, and or eradication of species (follow-up of the management plan for invasive species in terrestrial protected areas)
	Monitor rehabilitated areas
A27. Develop and implement pilot projects for valuation of endangered species	Do an assessment of threatened terrestrial and marine species (and ecosystems) that may be subject of pilot projects for valuation (see experience of the Botanical Foundation with the pilot project for the valuation of pinion and mate plant)
	Establish national and international partnerships to develop and implement pilot projects
A28. Develop and update inventory on genetic resources (phyto-genetic and agro-genetic)	
A29. Develop / support and implement a conservation program for genetic resources (phyto-genetic and agro-genetic)	
A30. Encourage the implementation of cross-breeding programs for domestic animals and cultivated varieties to improve these biological resources without losing the best	

Actions	Specific Activities
features of existing local genetic heritage	
A31. Conduct exchanges and establish protocols with institutions linked to genetic preservation	
A32. Identify biodiversity and ecosystem providers of priority essential services, of particular value for biodiversity and vulnerable populations (women and the poor) and promote their protection and monitoring	Do an assessment of biodiversity and ecosystem providers of essential services
	Prepare a geographic information system (GIS) for ecosystems providers of essential services
	Establish financing mechanism for GIS maintenance
A32. Conduct a diagnosis of degraded ecosystems and select the key ones to be recovered, for the benefit of biodiversity conservation and mitigation of climate change effects	Develop and implement projects to protect and / or restore ecosystems identified as priorities (e.g ICZM integrated soil and water resources management, degraded areas for sand extraction))
A33. Develop and implement an action plan for control and sustainable extraction of inert	A desenvolver
A34. Enhance connectivity existing among the priority ecosystems through ecological corridors (protected areas, biosphere reserves) and others (array of conservation, ecosystemic approach)	Identify corridors linking ecosystems
	Promote conservation initiatives and implement an integrated management (conservation plans by island, EROT), and suggest and direct guidelines to ecosystems with municipalities and communities involved
	Optimize and strengthen ties between the Protected Areas Management Entities with the local community and society
A35. Strengthen participatory management programs and projects of protected areas for the benefit of local communities, particularly women	Establish outcome indicators and monitor the impacts of the projects and participatory management in the quality of life of local people and biodiversity conservation
A36. Implement training Programs on participatory management for professionals and local communities	
A37. Include elements of resilience to climate change in the development / revision of Conservation Management Plans and Plans of Action	Set up implementation team
	Identify, prioritize and select appropriate adaptation measures
	Engage all stakeholders
	Develop skills and implement measures
	Monitoring and evaluation
A38. Develop actions to increase Biodiversity's contribution to ecosystems resilience	Promote the creation of botanical gardens
	Promote reforestation actions
	Strengthen programs for forest fires prevention and management
A39. Develop and implement a soil and water conservation (SWC) program aimed at combating erosion, increasing water availability and preventing Biodiversity loss in protected areas.	Construction of soil and water conservation infrastructures(dams, dikes, terraces, stone walls) and live-barriers
	Create and implement a maintenance, restoration and monitoring program for CSA infrastructure
	Substitution of erosive crops (corn) for perennial crops (Fruit trees, congo beans)
	Encourage climate resilience and adaptation projects and programs linked to biodiversity conservation in PA in favor of local communities
A40. Improve and implement the system to monitoring climate change effects on Biodiversity	
A41. Ratify the Nagoya Protocol	
A42. Conduct inventory of the country's genetic resources and possible uses in compliance with Protocol guidelines	
A43. Harmonize national legislation with the Nagoya Protocol	
A44. Implement awareness activities targeting users of genetic resources	
A45. Assess implementation of the NBSAP	
A46. Review, update, adjust and implement all environment relevant legislation	
A47. Compile and analyze the relevance and value of all existing information and traditional knowledge on Biodiversity use (study on indigenous knowledge and traditional practices)	

Actions	Specific Activities
A48. Promote the exchange of (traditional and scientific) knowledge in order to enhance the role of traditional knowledge in BD conservation	
A49. Implement capacity-building plan for associations, NGOs and most vulnerable groups	
A50. Increase employment opportunities for local communities in biodiversity conservation	
A51. Compile and disseminate all existing information on biodiversity, the causes and consequences of its loss, ecosystem services and other relevant aspects	
A52. Assess and prioritize needs of knowledge on biodiversity and of training for professionals in the area, to better define conservation measures	
A53. Develop and implement a strategy to foster research applied to national biodiversity (terrestrial and marine components) and the sustainable use of resources	
A54. Implement capacity-building plan for professionals by applying the principle of "learning by doing"	
A55. Develop and implement a plan for mobilization of resources to implement the Strategy	Promote integration and targeting of resources and efforts from the cooperation, embassies, and programs (SGP and UNDP) to implement the Strategy
A57. Incorporate activities to implement the Strategy in the budget of the Ministry of Environment and other relevant ministries (i.e. fisheries, agriculture, tourism, infrastructure)	
A58. Promote the establishment and operation of a platform of institutions, by island, seeking the optimal management of resources	
A59. Promote convergence / integration of Plans, Programs, and Projects and analyze the allocations provided in similar activities to reduce costs and ensure additional resources to implement the Strategy	

Annex 3. Indicative Timetable of Activities

ACTIVITIES	2014-2017	2018-2021	2022-2025
1.1 Raise awareness among various sectors of society (population, public and private institutions, communities and media) on the importance and value of biodiversity and engage them in conservation activities			
1.2 Develop and implement capacity-building programs to enhance knowledge on biodiversity and its conservation (government institutions, communities, NGOs, media)			
1.3 Develop and implement a strategy to encourage and increase private sector engagement in biodiversity conservation			
2.1 Prepare and implement integrated sectoral plans (agriculture, forestry, fisheries, education, tourism and construction) thus minimizing negative impacts on Biodiversity			
2.2 Promote the adoption of an Integrated Area Management Approach (IAM)			
2.3 Conduct an economic assessment of Cape Verde's priority biodiversity and ecosystems (example: Millennium Ecosystem Assessment)			
3.1 Develop mechanisms to encourage investments and interests of economic operators in the Implementation of projects Integrating the rational use and conservation of natural resources and its conservation			
3.2 Promote and Implement Strategic Environmental Assessment (SEA)			
3.3 Promote and Develop a system to award product quality seal			
3.4 Develop mitigation and / or preventive measures to address cases of industrial or tourism development that can have destructive impacts on ecosystems and species.			
3.5 Develop compensation strategies (biodiversity offsetting) for the inevitable development or cases of the mining industry, which may have negative, destructive, and irreversible impacts on Biodiversity.			
4.1 Counter the sources of marine and land pollution			
4.2 Prepare and implement an environmental quality monitoring system			
5.1 Develop and implement marine resources exploitation and monitoring plans			

ACTIVITIES	2014-2017	2018-2021	2022-2025
5.2 Promote the prospection of new resources including marine those of economic relevance that are sensitive and or endangered			
5.3 Promote an eco-systemic approach to marine resources management in identified areas			
5.4. Promote and regulate activities that give value to marine resources			
6.1 Improve efficiency in management of Protected Areas			
6.2 Identify and designate new PAs			
6.3 Promote inclusion and valuation of protected areas in the context of national development			
7.1 Develop and implement on site national conservation and monitoring programs for endangered species or group of species			
7.2 Elaborar e implementar programas de monitorização dos habitats prioritários			
7.3 Increase forestation activities with native species			
7.4 Prepare a new list Red of Cabo Verde and update it every five years			
7.5 Develop and implement national conservation and monitoring plans for endangered species or groups of species			
7.6 Develop and implement an invasive species control program			
7.8 Develop and implement pilot projects for Biodiversity valuation			
8.1 Develop and update inventory on genetic resources (phyto-genetic and agro-genetic)			
8.2 Implement a conservation program for genetic resources (phyto-genetic and agro-genetic)			

ACTIVITIES	2014-2017	2018-2021	2022-2025
8. 3 Encourage the implementation of cross-breeding programs for domestic animals and cultivated varieties to improve these biological resources without losing the best features of existing local genetic heritage			
8.4 Promote exchanges and establish protocols with institutions linked to genetic preservation			
9.1 Identify biodiversity and ecosystem providers of priority essential services, of particular value for biodiversity and vulnerable populations (women and the poor) and promote their protection and monitoring			
9.2 Conduct a diagnosis of degraded ecosystems and select the key ones to be recovered, for the benefit of biodiversity conservation and mitigation of climate change effects			
9.3 Develop and implement an action plan for control and sustainable extraction of inert			
9.4 Enhance connectivity existing among the priority ecosystems through ecological corridors (protected areas, biosphere reserves) and others (array of conservation, ecosystemic approach)			
9.5 Strengthen participatory management programs and projects of protected areas for the benefit of local communities, particularly women			
9.6 Implement training Programs on participatory management for professionals and local communities			
10.1 Include elements of resilience to climate change when developing / revising Conservation Management Plans and Plans of Action			
10.2 Develop actions to increase Biodiversity's contribution to the resilience of ecosystems			
10.3 Develop and implement a soil and water conservation (SWC) program aimed at combating erosion, increasing water availability and preventing Biodiversity loss in protected areas.			
10.4 Improve and implement the system to monitor climate change effects on Biodiversity			
11.1 Ratify the Nagoya Protocol			
11.2 Conduct inventory of the country's genetic resources and possible uses in compliance with Protocol guidelines (fair and equitative access and distribution of benefits)			
11.3 Harmonize national legislation with the Nagoya Protocol			

ACTIVITIES	2014-2017	2018-2021	2022-2025
11.4 Implement awareness activities targeting users of genetic resources			
12.1 Assess implementation of the NBSAP			
12.2 Review, update, adjust and implement all environment relevant legislation			
13.1 Compile and analyze the relevance and value of all existing traditional information and knowledge on Biodiversity use (study on indigenous knowledge and traditional practices)			
13.2 Promote the exchange of (traditional and scientific) knowledge in order to enhance the role of traditional knowledge in BD conservation			
13.3 Implement capacity-building plan for associations, NGOs and most vulnerable groups			
13.4 Increase employment opportunities for local communities in biodiversity conservation			
14.1 Compile and disseminate all existing information on biodiversity, the causes and consequences of its loss, ecosystem services and other relevant aspects			
14.2 Assess and prioritize needs in terms of knowledge on biodiversity and of training for professionals in the area, to better define conservation measures			
14.3 Develop and implement a strategy to foster research applied to national biodiversity (terrestrial and marine components) and the sustainable use of resources			
14.4 Implement capacity-building plan for professionals by applying the principle of "learning by doing"			
14.5 Improve the system for evaluating environmental quality by establishing key monitoring indicators.			
15.1 Develop and implement a plan to mobilize the necessary resources to implement the Strategy			
15.2 Incorporate activities to implement the Strategy in the budget of the Ministry of Environment and other relevant ministries (i.e. fisheries, agriculture, tourism, infrastructure)			
15.3 Promote the establishment and operation of a platform of institutions, by island, with view to an optimal management of			
15.4 Promote convergence / integration of Plans, Programs,, and Projects and analyze the allocations provided in similar activities to reduce costs and ensure additional resources to implement the Strategy			

Annex 4. Correspondence of National Goals with Aichi Targets

2014 - 2030 National Biodiversity Strategy and Action Plan	Relevant Aichi Targets
National Target 1: By 2030, society at large will be aware of the importance and values of Biodiversity and the measures required for its conservation and sustainable use.	1, 2, 4
National Target 2: By 2025, the ecological, economic and social values of biodiversity will have been integrated into national and local strategies and planning, and poverty reduction processes, and duly incorporated in national accounts	2
National Target 3: By 2025, the government, businesses and civil society will have implemented plans and measures to ensure the sustainable production and consumption, while maintaining the impacts of use of natural resources well within safe ecological limits	3, 4, 7
National Target 4: By 2018, Pollution sources will have been identified and controlled to levels that are not detrimental to the normal functioning of ecosystems	8
National Target 5: By 2020, marine resources of economic interest will be managed sustainably	6
National Target 6: By 2025, at least 20% of terrestrial areas and 5% of coastal and marine areas, especially those of ecological relevance and importance will be conserved through a coherent system of PAs and managed effectively and equitably through the implementation of Special Management Plans for Protected Areas (SMPPA)	11
National Target 7: By 2025, endangered and priority marine and terrestrial species will be conserved and enhanced	9, 12
National Target 8: By 2025, get to know and improve the genetic heritage of cultivated plants and domesticated animals with economic and cultural value	13
National Target 9: By 2025, Cabo Verde will have strengthened protection, improved connectivity and recovered key ecosystems so that they will continue to provide essential services to the economy and the welfare of the population	14, 15
National Target 10: By 2018, all approved national conservation strategies and plans will integrate elements of resilience and adaptation to climate change	15
National Target 11: The Nagoya Protocol is implemented by 2015	16
National Target 12: By 2015, Cabo Verde will have adopted the NBSAP as policy instrument and will have commenced implementing it with the broad participation of all key sectors of society	17
National Target 13: By 2025, local communities will have full and effective participation in the implementation of conservation programs and their traditional knowledge valued	18
National Target 14: By 2025, scientific and empirical knowledge will contribute to the conservation of Biodiversity in Cabo Verde	19
National Target 15: By 2025, Cabo Verde will have mobilized 70% of the necessary financial resources to implement the Strategy.	20

Annex 5. Conceptual Model of the Causes and Consequences of Biodiversity Loss