



*Antigua and
Barbuda*



National Biodiversity Strategy and Action Plan (NBSAP): Stocktaking Exercise

**Environment Division
Ministry of Agriculture, Lands, Housing and
The environment**

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LIST OF ACRONYMS

CARDI	Caribbean Agricultural Research and Development Institute
CARICOM	Caribbean Community
CBD	Convention on Biological Diversity
COP	Conference of the Parties
EAG	Environmental Awareness Group
EIMAS	Environmental Information Management System
EPMB	Environment Protection and Management Bill
GARDC	Gilberts Agricultural and Rural Development Centre
GEF	Global Environment Facility
GMO	Genetically Modified Organisms
IWCAM	Integrating Watershed and Coastal Areas Management (project)
MPA	Marine Protected Area
NBSAP	National Biodiversity Strategy and Action Plan
NCM	National Coordinating Mechanism
NEMMA	North East Marine Management Area
NEMS	National Environment Management Strategy
PA	Protected Areas
SIRMM	Sustainable Island Resource Management Mechanism
UNCBD	United Nations Convention on Biological Diversity
UNSD	United Nations Statistics Division
UWI	University of the West Indies

CHAPTER 1

1 ANTIGUA AND BARBUDA NATIONAL BIODIVERSITY STOCKTAKING EXERCISE

1.1 INTRODUCTION

A National Biodiversity Strategy and Action Plan is a key implementation tool of the United Nations Convention on Biological Diversity (UNCBD) and is a requirement under article 6(a) of the convention. It is aimed at ensuring that countries move more effectively towards planning for biodiversity protection in a strategic manner while addressing all three objectives of the Convention; namely, conservation of biodiversity, sustainable use of the components of biodiversity and fair and equitable sharing of the benefits deriving from the utilization of genetic resources. At the 10th meeting of the Conference of the Parties (COP) to the Convention on Biological Diversity in 2010, the parties approved an ambitious strategic plan for implementation between January 2011 and December 2020. Included in this strategic plan are 20 time bound Aichi Targets with an understanding that the countries would report to the convention on the conversion of these targets into national targets and updated National Biodiversity Strategy and actions plans (NBSAPs) at the latest by COP 12 in 2014 (see UN CBD Conference of the Parties (COP) decision X/2 and X/10)¹.

It has been 11 years since the preparation of the county's last Biodiversity Strategy and Action Plan. In an effort to meet the new requirements of the convention, Antigua and Barbuda has begun the process of reviewing and updating its NBSAP. Since the development of the last NBSAP the country has worked to secure renewed political commitment not only to the issues of Biodiversity but sustainable development on a whole. Emphasis has been placed on assessing progress to date on the implementation of a system of protected areas, addressing the remaining gaps in implementation of the outcomes of the major summits on Biodiversity as well as sustainable development, and addressing the new and emerging challenges including those brought about by climate change and the Aichi targets mentioned above.

At the national level, a number of assessments have been completed² on critically important biodiversity issues. These assessments, in some cases, have resulted in policy level adjustments and a renewed commitment to the preservation of the country's biodiversity. This is a positive signal towards effective implementation of the resulting plans. This national level commitment has sparked new interest in the biodiversity debate nationwide and has lead to the engagement of a number of community groups and other stakeholders in the development of adequate solutions to the current biodiversity related problems including the issue of invasive species, climate change and the added challenges of being a small island developing state.

¹ <http://www.cbd.int/decisions/cop/?m=cop-10>

² See Table 2 below with a list of available assessments completed since 2001.

1.2 BACKGROUND

Antigua and Barbuda (including Redonda) has very significant resources that may be drawn upon to provide a solid base for development. On the other hand however, the country also experiences important challenges in managing a sustainable development process. The country's primary resources include a very agreeable climate, outstanding land and seascapes, extensive areas of high ecological value, an engaging history, democratic governance, a well-educated and healthy population, and significant natural resources (beaches, agricultural lands and fish stocks). While the country's natural resources were of primary economic importance throughout much of its history, the other resources listed, coupled with the ease of accessibility to North America and Europe, have led to a thriving tourism industry. This has led to even more problems for the country's biodiversity.

The biodiversity challenges faced by Antigua and Barbuda are similar to many other SIDS in the region. These include:

- Fragile terrestrial and marine ecosystems such as mangrove wetlands and coral reefs that are endangered by development projects, pollution and misuse.
- Vulnerability to external economic and natural environmental events, such as economic recessions, hurricanes, and climate change.
- Lack of human resource capacity in key biodiversity areas
- Inadequate physical infrastructure.
- Conflicting land use activities, especially among housing, tourism and agricultural activities.
- Land degradation due to uncontrolled grazing;

The following pages present an update on the activities undertaken by the government over the last three years to address these shortfalls and highlights what has been accomplished based on the objectives of the previous NBSAP.

1.3 LOCATION AND GEOGRAPHIC AREA



Map 1: Map showing location of Antigua and Barbuda

Source: GraphicMaps.com

1.3.1 PHYSICAL SETTING:

Antigua and Barbuda is a twin island state located in the Caribbean Sea approximately 250 miles southeast of Puerto Rico and is the most central of the leeward island chain (Fig 1.1). There are several tiny uninhabited islands surrounding Antigua; Redonda (0.6 sq. miles or 1.6 sq km) being the largest.

Antigua is roughly round and has an area of 108 sq. miles (280 sq. km) and Barbuda 62 sq. miles (160 sq. km). Antigua and Barbuda has an exclusive economic zone of 110,071 sq. km.

Antigua can be described as undulating with three topographic zones. The soils here are generally productive, however, the limestone areas in the East consist of complex shallow and deep calcareous soils and the drier climate restricts productivity. The highest point in Antigua is Mt Obama 1,319 ft (402 m) in the southwest.

Barbuda is relatively flat with some low lying hills rising to just under 125 ft (40m) in the Highlands area. Barbuda is dominated by coralline limestone rocks. On the western side of the island is the Codrington Lagoon averaging about one and a half miles in width and separated from the sea by a narrow spit of sand. Barbuda's topography is relatively uniform, sand dunes are present but the land is generally covered by limestone and sand.

The islands of Antigua and Barbuda are emergent parts of a 3400 sq. km submarine platform. The coastline of Antigua is indented with numerous islands, creeks, inlets, associated sand bars and wet lands. A large portion of the east, north and south coasts are protected by fringing reefs. On the west coast, there are large areas of sandy bottom in shallow water, with sandy bottom between fringing reefs and the shore. The coastline of Barbuda is less varied but has extensive reef systems especially off the east coast. The Codrington Lagoon is bordered by mangroves and sand ridges. This area is of significant importance to the fisheries and wildlife of Barbuda

1.3.2 BIODIVERSITY

From the earliest colonial period to the 1960's, the sugar industry dominated the land use patterns of Antigua and resulted in major changes to terrestrial habitats and the island's biodiversity. Nearly three centuries of deforestation and land clearing for intensive agricultural use have resulted in removal or degradation of the original vegetation and lead to habitat destruction and subsequent loss of species richness. Presently, uncontrolled livestock grazing continues to have a detrimental effect on native plant communities. Additionally, intensive tourism development has resulted in major biophysical alterations to the coastline, leading to the destruction of coastal and marine habitats directly affecting the richness of biodiversity residing in these areas.

Based on recent assessments, there are 71 freshwater fish species and 400 marine fish species found in Antigua and Barbuda. Additionally, two native species of amphibians; namely a tree frog (*Eleutherodactylus johnstonei*) and a marine toad (*Bufo marinus*) also call Antigua and Barbuda home.³

³ Information taken from the First National Report submitted to the convention on Biological Diversity, March 2001

Twenty terrestrial reptile species or sub-species have been documented for Antigua and Barbuda of which four are thought to be extinct, one is presently considered endangered; namely the Antigua Racer Snake (*Alsophis antillensis antiguae*). The Iguana (*delicatissima*) was also on the endangered list but is now extinct in this country though it still exists in neighbouring islands such as Anguilla. The Antigua Racer Snake is the rarest snake in the world, with only about nine hundred living. It is found on Bird Island, Rabbit Green and York, all islands off the coast of Antigua. Antigua and Barbuda has three endangered species of turtles which nest on the beaches, namely the hawksbill, green and leatherback (the loggerhead is known to traverse the waters). Other examples of reptilian species found include the following: The Red-footed tortoise (*Geochelone carbonaria*); The Green lizard (*Anolis bimaculatus leachi*) which is a sub-species endemic to Antigua and introduced to Barbuda; A (*wattsii wattsii*) which is an endemic sub-species which was introduced to Saint Lucia; an endemic ground lizard (*Ameiva griswoldi*) which is common in Barbuda, but found only in selected sites in Antigua; and an endemic subspecies of lizard which has been recorded for Redonda.

With regards to birds, there are 182 species⁴ found on the island. Two-thirds of the population is migratory leaving 60 residents. Antigua and Barbuda is considered an important stopover along the Trans-Atlantic migratory route between North and South America. Approximately 20 of the 60 resident birds are considered endemic to the West Indies sub-region and in some cases restricted to the Lesser Antilles. Inventories have revealed at least two species which are considered endemic sub-species (the Broad-winged Hawk, (*Buteo platypterus insulicola*); and a Barbuda endemic sub-species or *Dendroica ruficauda*).

Bats are the only native terrestrial mammals, with seven species of bats resident in these islands. There are several introduced mammal species, for example, the European Fallow deer (endangered) and the Indian mongoose. There are 26 recognized Cetacean (marine mammals) species associated with the islands.⁵

⁴ Important Bird Areas in the Caribbean, Antigua and Barbuda, Joseph Prosper, Andrea Otto, Victor Joseph and Shanee Prosper, 2008

⁵ Information replicated from Antigua and Barbuda's Third National Communication to Climate Change, pg 17.

CHAPTER 2

2 SITUATION ANALYSIS

2.1 DOCUMENT REVIEW: NATIONAL BIODIVERSITY STRATEGY AND ACTION PLAN 2001 DRAFT

2.1.1 INTRODUCTION

The Draft National Biodiversity Strategy and Action Plan developed in 2001 was presented to the Government of Antigua and Barbuda but never fully implemented. The following sections will present the objectives of the NBSAP and an assessment of the activities which have been completed thus far and those that are in the development/implementation process. The review also highlights activities that have yet to be undertaken. Firstly, it is noted that the situation analysis regarding the biodiversity for Antigua and Barbuda being at risk has not changed much since 2001. For example, it was noted as a concern in the 2001 report that the country's marine biodiversity was increasingly at risk from habitat destruction, overexploitation and destructive fishing methods. Additionally, it was highlighted that mangroves, which function as breeding grounds and habitats for terrestrial and marine wildlife, were under increasing threat from development, particularly those related to the tourism sector. This situation has not changed much over the last 10 years. Though some steps have been taken to declare key mangrove areas as protected under the Fisheries Act, a large portion of the country's marine and mangrove habitats remain unprotected and susceptible to developmental influences. The consensus that fishing and tourism still adversely affect Antigua and Barbuda's marine biodiversity still remains. Actually, the major threats identified by the NBSAP as severely impacting the biodiversity of the country in 2001 still exists. These include⁶:

- The loss of habitat primarily through sub-division of lands for housing, tourism development, agriculture and the mining and dredging of sand
- Fragmentation of natural communities by road-ways and other man-made features that form a barrier to the movement and dispersal of species
- The introduction of non-native species (like the lemon grass that has taken over from the native species in a number of areas)
- Overgrazing by livestock which pose an increased threat especially in the upper watershed areas
- Pollution caused by improper sewage discharge and unregulated pesticide use
- Natural and anthropogenic activities that affect coral reefs directly and indirectly

⁶ Biodiversity Strategy and Action Plan for Antigua and Barbuda, April 2001 (draft)

- Droughts and hurricanes that have severely impacted the bird and vegetative communities

In an effort to address these issues, the strategy was envisaged as a four tier plan addressing the preservation of biodiversity in relation to:

- I. The sustainable use, protection and conservation of Antigua and Barbuda's Biodiversity
- II. The coordination of all efforts and activities involving the sustainable use, protection and conservation of biodiversity
- III. The enforcement of all policies, regulations and legislation affecting these efforts and activities
- IV. The knowledge and understanding of the processes governing biodiversity, and the information required to guide and coordinate the activities involving the sustainable use, protection and conservation of biodiversity

2.1.2 NBSAP2001 REVIEW: OBJECTIVE ONE

Objective one of the draft NBSAP envisaged the development of a national system including protected areas for the management and conservation of biodiversity. Under this goal, it was anticipated that the list of indicators developed by the CARICOM secretariat and UNSD would be used by the Environment Division to monitor the country's biodiversity as it relates to the coastal zones, the land and soil, forest, freshwater, minerals, waste, air/climate, natural disasters, energy and tourism. Some essential elements necessary for biodiversity to be effectively monitored were also included.

Under this objective, four major activities were identified. These are as follows:

- The establishment of a protected areas system for terrestrial and marine conservation in Antigua and Barbuda. This would be further achieved through the identification of critical habitats and species for conservation and limited sustainable use; identification and mapping of areas to be included in a PA system; development and implementation of management plans for protected areas.
- Identification and development of management plans for critical habitats and species that may be used sustainably in the country
- Development and implementation of a monitoring systems for ecosystem status
- Conserve, protect and or sustainably use the genetic resources of Antigua and Barbuda as it relates to medicinal plants, local crops and livestock races and guidelines for access to genetic resources.

A number of critical assumptions were identified in order to have this objective met. Two of those assumptions are worth mentioning as they have not been met and still remain critical to the NBSAP process. Firstly there is a need to have the political directorate accept as critical the

protection the country's biodiversity. Secondly, both human and financial resources were to be made available nationally to implement the activities required under the NBSAP on a whole.

A detailed breakdown of the achievements under this target has been completed in chapter three however it is noted that while some work has begun, a number of activities still need to be undertaken in order to achieve the outcomes of this objective. For example, it is noted that increased budgetary allotment for effective environmental management has yet to be allocated, instead, budget allocations for the Environment and other similar Natural Resource base departments have been reduced.

2.1.3 NBSAP 2001 REVIEW: OBJECTIVE 2

Objective 2 of the NBSAP sought to strengthen the capacity of the existing government and non-governmental institutions to support the goals and objectives of the NBSAP. This objective was identified based on the multidisciplinary nature of biodiversity and the need to ensure that a coordinated management system was implemented. This is still a critical necessity in the current review of the NBSAP. In achieving this objective it was assumed that the necessary resources to train the relevant personnel would be mobilized or accessed through corporation with external organizations.

Under this objective, there were also four major activities identified. These included the following:

- Enhancement of Protected Areas management capabilities
- Assessment of the abiotic, biotic and anthropogenic factors affecting biodiversity
- Assessment of national financing for biodiversity conservation
- Development of policies to promote sharing of technologies relating to effective biodiversity management

All of these points are still highly important in the current NBSAP process. Though there needs to be further assessment to determine what aspects of each activity would need to be emphasized, the importance of all these activities still remain a priority for the county.

As an update to this objective, it should be noted that some work has been done in streamlining an appropriate management system for biodiversity. With the establishment of the Environment Division and the implementation of the National Coordination Mechanism (NCM) the country has begun the process of achieving all four established goals. Further analysis of the achievements to date for this objective can be found in chapter three.

2.1.4 NBSAP ASSESSMENT OBJECTIVE 3

Under objective three, the NBSAP sought the development, enactment and enforcement of legislation that would effectively manage the country's biodiversity. Its aim was to ensure the

establishment of the necessary policy and legal framework to conserve the country's biodiversity as well as ensure the maximum benefits to the country for use of its biological resources. It was also envisaged that the legislation would ensure the safety of biotechnology in the country.

Work on the development of one overarching biodiversity legislation begun in 2005 and culminated in 2011 with the completion of an Environmental Management Bill. Though the bill has not yet been passed, a number of other pieces of legislation have been upgraded since 2001 and include important updates addressing various aspects of Biodiversity. The physical planning act 2003 and the fisheries Act are two worth mentioning. Other achievements under this objective are highlighted in chapter three.

2.1.5 NBSAP ASSESSMENT OBJECTIVE 4

Objective four comprised activities aimed at meeting the requirement of the CBD under articles 13, 17 and 18. Focus was therefore on public awareness and information sharing. The repatriation of information held for the country in other territories was also part of the aim of this objective. The country's achievements under this objective or the lack thereof have been outlined in table 1 in chapter 3.

CHAPTER 3

3 ACHIEVEMENTS SINCE THE DRAFT NBSAP

A considerable amount of work has been completed since the submission of the draft NBSAP in 2001. Many of the activities identified for implementation have been undertaken. Though met with varying degrees of success, the commitment to ensuring the importance of biodiversity to the sustainable development of the country was integrated into the operational program of key institutions and agencies within the country is evident. The progress made owes some of its success to the regional as well as international efforts promoting the critical importance of Biodiversity. For example, in the Caribbean Region, CARICOM has undertaken an assessment⁷ of environmental governance within its member states and the important role effective environmental management plays in ensuring the sustainability of the region's industries. The overall aim of this project is to establish a Community Environmental Management and Natural Resource Policy framework which is to be presented to the countries in the first quarter of 2013. Such a bold move on the part of this important regional organization shows the agenda focus of each member state including Antigua and Barbuda. The table below outlines the previous NBSAP objectives and the achievements of those objectives to date.

Table 1 2001 Draft NBSAP Activity Status

Objectives	Link to Activities the CBD	Activities Breakdown	Status	Comments
One: A national system , including protected areas, for the management and	Articles 7,8,9,10,14,15	1.1Establish a Protected areas System for terrestrial and marine	On-Going	Some work has been done in identifying individual species, habitats and ecosystems vulnerable to human disturbance. Recommendations have

⁷CARICOM Trade and Competitiveness Project: Component 300-Sub Component: The Environment, Diagnostics and Analytical Review of Environmental Governance Systems In Antigua and Barbuda, CaribInvest (West Indies) Ltd.

Objectives	Link to the CBD	Activities	Activities Breakdown	Status	Comments
conservation of biodiversity developed and established		conservation in Antigua and Barbuda	use (Terrestrial and Marine)		also been made for protection but much work still needs to be completed. Of importance is the completed red list for our plant species prepared by the EAG in 2009. A subsequent Red List of Pteridophytes was completed in January 2012. The EAG has also facilitated the housing of plant herbarium samples in the UWI Herbarium in St Augustine for safe keeping as no national herbarium yet exists.
			Identify, map and characterize areas to be included in a Protected Areas System (Terrestrial and Marine)	Completed	A review of the system plan is currently underway in an effort to update the previous plan and characterize all the areas to be included in the system. The PA have however been identified and maps exists as part of the EIMAS system. Work on the rehabilitation of necessary areas has not yet begun
			Develop and implement management plans for protected areas (terrestrial and Marine)	On-Going	Management plans have been developed for the NEMMA, the Cades Bay Marine Reserve, The Codrington Lagoon National Park and the proposed Wallings Protected areas. The Nelson's Dockyard National Park has a management plan but it is very outdated and in need of revision. Other declared and proposed areas are yet to have management plans.
		1.2 Identify and develop management	Review available information to	Not yet Completed	A few reports exist on particular species such as the bats, turtles and birds of

Objectives	Link to the CBD	Activities	Activities Breakdown	Status	Comments
		plans for critical habitats and species (terrestrial and marine) that may be used sustainably	identify the individual species, habitats and ecosystems that can be used, and develop recommendations for their sustainable use		Antigua. The EAG has a considerable amount of information on aspects of the management of the Antigua Racer – food, habitat, longevity and the effects of invasive species however work needs to be completed on all the other species
			Undertake relevant investigations to determine sustainable levels of use of biodiversity	Not yet completed	An overall biodiversity capacity assessment has not been completed
			Develop and implement plans for fisheries, agriculture and eco-tourism development, and establish appropriate limits (carrying capacity) for the sustainable use by these activities	In progress	Plans are being developed for Fisheries and Tourism as well as agriculture in relation to sustainable development and use of natural resources
			Develop and implement, where appropriate, pilot projects to demonstrate sustainable practices that are compatible with biodiversity conservation	In progress	This is a continuous program. Examples of demonstration projects include: 1. IWCAM: Proper sewage management practices, 2. SIRMM: proper resource management for the Codrington Lagoon National Park, the Body Ponds Watershed, the North West Coast and the Mount Obama to Cades Bay areas

Objectives	Link to the CBD	Activities	Activities Breakdown	Status	Comments
			Initiate a Mariculture Development Program to reestablish over-fished areas, and to increase the use of available and not fully utilized natural species	Not yet completed	The fisheries department encourages the development of aquaponics farms
			Adopt measures to prevent over-fishing including a ban on destructive fishing gear and spear-gun fishing	Implemented in Marine Protected Areas	The Fisheries Act and regulations were reviewed and updated. Both documents now have stricter control measures for key species – lobster, queen conch, parrotfish etc.
			Promote collaboration with the private sector to develop eco-tourism	On-going	The EAG has been active in promoting eco-tourism especially in the area of birding and has recently developed a new birding trail in the Christian Valley area. Efforts are also on the way for trail improvement in Body Ponds, work is also ongoing in Wallings.
			1.3Develop and implement a system for monitoring changes in use patterns and the status of the ecosystems (terrestrial and Marine)	Identify appropriate parameters, criteria and methods of monitoring biodiversity	Not yet implemented
		Collect relevant baseline and other data on relevant biodiversity	In process - Continuous	Collection of some Information has begun. EIMAS established. Since 1995 the EAG has been undertaking monitoring of snake populations on Off	

Objectives	Link to the CBD	Activities	Activities Breakdown	Status	Comments
			components		shore Islands, they also monitor nesting birds and rat numbers on these islands. Some monitoring of lizards has also been done. Work has been done on Birds on Redonda however this work has to be confirmed and the data collected.
			Collect periodic surveys of threatened species of flora and fauna	In progress	Information collected by research students and other agencies is shared with the environment division. The EAG monitors Racer snakes populations, as well as seabirds on offshore islands. Fisheries Department is doing shark surveys as well and also has a data collection programme.
			Establish and maintain a national bio-geographic (ecosystem) database	In progress	EIMAS had been developed and is constantly being updated
			Evaluate and mitigate the activities that threaten biological diversity	In progress	Evaluations are being undertaken. Mitigation is being implemented where possible with the requirement of EIAs prior to certain developments.
			Provide accurate and timely information on the specifics of population size and trends especially of threatened species	In progress	Some projects are in place such as the turtle program for the EAG and Jumby Bay. Information is also available on the population size of the Antigua Racer Snake
			Take appropriate legal and regulatory action when the	In progress	Legislation exists and is being used under the Fisheries Act. Other laws still need to be implemented however

Objectives	Link to the CBD	Activities	Activities Breakdown	Status	Comments
			measures governing the protection and sustainable use of the areas selected under activities 1.1 and 1.2 are infringed		
		1.4 Conserve, protect and or sustainably use the genetic resources of Antigua and Barbuda	Conserve medicinal plants and protect vegetative communities that provide habitats to these plants: Starting with the collection housed in the museum investigate uses of medicinal plants, catalogue and improve the recording of such uses and make the info more readily available to the general public	Work has begun	A report produced for the ministry of agriculture was completed in 1995. The report, Antigua and Barbuda Country Report to the FAO International Technical Conference on Plant Genetic Resources, was provided to the FAO however no further updates can be found on the report. Work has also been done with TRAMIL (http://www.tramil.net/english/Intro.html) through the Dunbars Lab where a medicinal herb garden was established.. One was also established at GARDC. Unfortunately most of the medicinal plants in both gardens have been destroyed and perhaps the program needs to be re-established. A book on the wild plants of Antigua and Barbuda has also been produced by Mr. Christopher Pratt.
			Maintain viable populations of local crop and livestock races: establish seed banks and relevant	In progress	The Division is in the process of re-establishing the botanical gardens. The Agricultural department has also embarked on a project with the assistance of CARDI to establish seed

Objectives	Link to the CBD	Activities	Activities Breakdown	Status	Comments
			guidelines, plant nurseries (forest and agriculture in particular), botanical gardens reestablished to include an expanded collection of plants, expand the herbarium initiated by the EAG and forestry division		banks of various agricultural plants. This primarily included fruit trees however. No work has yet been done for the wild plants and other species in Antigua and Barbuda. The Herbarium was not established however plants have been sent to the UWI for safe keeping on behalf of the country.
			Develop and implement guidelines for controlling access to genetic resources	In progress	This has been included in the recently developed Environment Management Bill scheduled for submission to parliament in 2013. The recently passed Plant Protection Act also addresses the issue of GMOs (Genetically Modified Organisms). The country is signatory to the International Standards on Phytosanitary Measures and as such are bound by those regulations
Two: The capacity of governmental natural resources management institutions as well as non-governmental organizations, to support the objectives and achieve the overall aim of the	Articles 11,12,16	2.1 Develop and enhance the capacity to manage protected areas and areas identified for sustainable use together with their associated biodiversity	Establish an appropriate policy and institutional framework including capacity building for management and protection of the country's biodiversity: obtain policy document	In progress	The NEMS has been developed. This document was developed with a strategy to 2010. This is now in need of revision to include a strategy for the next 10 years.

Objectives	Link to the CBD	Activities	Activities Breakdown	Status	Comments
NBSAP is strengthened			from cabinet on the protection of the environment		
			Conduct institutional review for the effective protection of the country's biodiversity. Based on the review establish an appropriate framework for natural resource management	In progress	The NEMS and NBSAP are to be reviewed and implemented.
			Provide training to facilitate the conservation and sustainable use of the country's biodiversity	In progress	A training and awareness program has been a part of the Division's work program since its establishment. A yearly summer camp for children ages 5-12 has also assisted with ensuring the regular presentation of information to the public on natural resource conservation and the sustainable use of same. There has been other media blitz that have helped to keep sustainable use of biodiversity on the country's radar. The EAG has conducted training internships for regional and local students in management of the Off-shore islands as well. The group also held its own summer camp in 2011 and 2012. Training has also been provided by

Objectives	Link to the CBD	Activities	Activities Breakdown	Status	Comments
					CAMPAM (Training of Trainers) for MPA managers. The park Manager for Codrington Lagoon National Park participated in one such training. He also participated in a MPA manager's exchange with the Netherlands Antilles.
		2.2 Conduct research on the inter-relationships between abiotic, biotic and anthropogenic factors affecting biodiversity, and develop recommendations for the mitigation of these effects	Identify gaps in current information required for making conservation management decision and recommend appropriate research programs to address them	In progress	Regular reports are done on various issues and presented to different agencies. These need to be collated however and utilized in ensuring that policy decisions on these issues are obtained from cabinet.
			Collect baseline data required to ascertain gaps	Done	The gaps have been identified through the SIRMM, GEF Protected areas project and the IWCAM project.
			Conduct research on the ecological requirements of priority species and communities, especially those that are rare and endangered	In progress	Work is currently being undertaken on species such as the Antigua Racer Snake, migratory and wetland birds.
			Provide an information sharing forum for improving conservation of	Completed	The Environment Division has been established. This department shares the relevant information on conservation on a regular basis.

Objectives	Link to the CBD	Activities	Activities Breakdown	Status	Comments
			biodiversity		
			Identify current and future risks associated with biotechnology and make recommendations for policy development	Not yet completed	
		2.3 Facilitate national financing for biodiversity conservation	Review sectoral and national budgets for biodiversity conservation in the context of proposed institutional changes required to implement the BSAP	Not yet completed	
			Examine options for cross-budget schemes to promote the conservation and sustainable use of biodiversity by other agencies	In progress	This has been discussed in the NCM and other forums however it needs to be formalized into a policy document and integrated into the strategic plans of all relevant departments
			Maximize resources by bringing projects that have the same objectives together to coordinate and synchronize their activities and	Completed	This is done with all projects in terms of bringing the stakeholders together as part of a technical advisory committee or project management committee

Objectives	Link to the CBD	Activities	Activities Breakdown	Status	Comments
			objectives		
			Seek assistance from the private and NGO sectors to finance specific aspects of the BSAP	On-going	The ministry of Agriculture and the EAG have collaborated together in the Off shore islands Conservation Programme and in other areas where funding from NGO sources has been able to assist the Ministry
			Consider feasibility of the introduction of user fees for at least some aspects of eco-tourist activity	Being considered	This has been considered as part of the Codrington Lagoon National Park as well as Wallings Forest and other areas. User fees are already charged by the National Parks Authority for visitors to the Nelsons Dockyard National Park. It is also currently being considered as a viable option of assisting with the financing of Protected areas in general.
			Conduct training for key ministry employees and NGOs in project development and grants applications suitable for national and international donors	In progress	
			Continue to seek international assistance for the conservation and sustainable use of the	In progress - Continuous	The country has sought to access more GEF funds as well as initiate other multi and bi-lateral funding agreements

Objectives	Link to the CBD	Activities	Activities Breakdown	Status	Comments
		2.4 Develop and implement policies to promote sharing of appropriate technologies	country's biodiversity		
			Develop international and bilateral agreements to facilitate the sharing of appropriate technologies	In progress	
			Develop appropriate protocols to facilitate technical and scientific cooperation	To be completed	
			Ratify other conventions that complement the implementation of the BSAP (CITIES, RAMSAR, TRIPS etc)	Completed	Antigua and Barbuda has ratified the following conventions: ⁸
			Utilize the monitoring regime established in 1.3 to facilitate the country's reporting obligations under a number of international	In progress	Though reports are being presented to the relevant bodies, there needs to be a formal monitoring process implemented. The information obtained for the reports now are heavily dependent on private or project related information collection processes. This has been addressed in the EPMB

⁸ See Annex 1

Objectives	Link to the CBD	Activities	Activities Breakdown	Status	Comments
			conventions treaties and agreements (including equipment and training)		
			Develop and implement protocols to regulate the import and export of endangered species, in line with international agreements (CITIES)	Completed	
			Develop and formalize regional agreements relating to cooperation in conservation of biological resources.	In progress	
Three: Ecological legislation that provides adequate protection of biological diversity is developed, improved, enacted and enforced		3.1 Establish the necessary policy and legal framework to facilitate the management sustainable use and protection of the country's biodiversity	Review, update and enact legislation to support the general policy statement/ decision from Cabinet and Parliament regarding the protection of the environment developed under activity 2.1. Review the draft forestry and wild life act (1988),	In progress	Legislation and regulations has been implemented for Fisheries, Legislation has been implemented for pesticides management, legislation has been implemented for physical planning and regulations are being developed. Legislation for Environment Management is currently set to go before parliament in 2013. There is also existing legislation for the management of National Parks. There is still a void however as for example, Great Bird Island is not protected even though it is a

Objectives	Link to the CBD	Activities	Activities Breakdown	Status	Comments
			<p>pesticide and toxic chemicals act, enact legislation for endangered species, provide legal protection for great bird island, improve beach protection, regulations for biodiversity use, regulations for activities in sensitive areas, training for those involved in legislative aspects of the management framework</p>		<p>part of the NEMMA. The fisheries division has indicated that their responsibilities do not extend to the terrestrial areas of island in the NEMMA. This issue has to be addressed. Additional work on protected areas management is yet to be completed.</p>
			<p>Review impact assessment procedures to take into account specific impacts on biodiversity</p>	<p>completed</p>	<p>This was incorporated into the Physical planning act of 2003 and has been updated in the environment management bill up for enactment in 2013</p>
			<p>Provide direct incentives to promote positive biodiversity conservation through incentive packages, tax privileges polices, develop and implement an annual</p>	<p>Not yet implemented</p>	

Objectives	Link to the CBD	Activities	Activities Breakdown	Status	Comments
			competition for nationally recognized awards for environmentally friendly management by business, service organizations etc.		
			Establish disincentives relating to negative impacts on biodiversity, the polluter pays principle reviewed and implemented, capacity building to implement disincentive measures for relevant agencies, regulations to curb the importation of potentially invasive species that pose a danger to biodiversity	Not yet implemented	
		3.2 Develop the legal and institutional framework necessary to ensure the safety of biotechnology as well as to ensure that maximum benefits	Establish a policy on GMOs that will ensure maximum benefits to the country, ensure safety, develop a policy to address	In progress	The recently enacted plant protection act has covered the issue of GMOs. The country is also party to the International Standards on Phytosanitary Management and as such adheres to all the requirements under these standards.

Objectives	Link to the CBD	Activities	Activities Breakdown	Status	Comments
		accrue to Antigua and Barbuda from the exploitation of its biological resources	biotechnology in relation to relevant international instruments, develop and implement the legal and institutional framework to govern the safety of biotechnology and equitable sharing of benefits		
Four: Public awareness of environmental issues, ecological education and public participation in decision-making is strengthened.	Articles 13,17,18	Increase public awareness of the benefits to be derived from biodiversity	Develop collaborative public education programmes and campaigns to increase public awareness of the importance of biodiversity to everyday life: provide resources relating to environmental education to the ministry of education, develop innovative public education materials, develop special programs targeting	In progress	A new public awareness work plan has been developed for 2013

Objectives	Link to the CBD	Activities	Activities Breakdown	Status	Comments
			specific groups and service organizations that contribute to public education and stakeholder awareness		
			Develop public awareness of policies and laws relating to biodiversity through radio and television programs, print media etc.	In progress	A number of education awareness programs have been implemented throughout the years through the education unit within the environment division. The environmental cadet program and the eco-zone program as well as the eco-zone summer camp have had a wide impact on environmental knowledge in Antigua and Barbuda. The recently developed communication strategy will help to further expand on this awareness within the country.
			Develop mechanisms for inter-sectoral biodiversity information sharing including the repatriation of information held within other nations, develop and implement protocols to clarify rights of accessibility to and ownership of	Not yet completed	

Objectives	Link to the CBD	Activities	Activities Breakdown	Status	Comments
			biodiversity information and specimens that are collected by foreign agents		
NBSAP Management		Determining the way forward in managing the BSAP	Establish a coordinating mechanism or entity for environmental management and implementation of the BSAP	Completed	The Environment Division has been established and the National Coordinating Mechanism meets yearly
			Monitor and report on the implementation of the BSAP annually, nationally and internationally	On-Going	Report is sent as required to the CBD. The fifth national report is due in March 2013
			Carry out periodic evaluations of the implementation of the BSAP and other environmental strategies and action plans.	In progress	Regular reports are compiled and submitted to the Convention on Biological Diversity

CHAPTER 4

4 UPDATED BIODIVERSITY ANALYSIS 2001-2012

4.1.1 INTRODUCTION

A number of biodiversity assessment reports have been undertaken since the completion of the draft NBSAP in 2001. These documents are identified below in table 2. It is noted that the assessments completed over the last twelve years are on particular species or in specific areas. A comprehensive ecological assessment of the biodiversity of Antigua and Barbuda is yet to be completed. With the development of the EIMAS system under the SIRMM project, a comprehensive data gap analysis was completed and has provided invaluable information on the islands biodiversity hotspots. However, a comprehensive ecosystems analysis needs to be completed for the twin island state.

4.1.2 BIODIVERSITY ASSESSMENT REPORTS

The following table highlights all the available documents completed on Antigua's and Barbuda's Biodiversity over the last ten to twelve years. It is noted that these documents were completed for areas and species thought to be of critical importance to the biodiversity of Antigua and Barbuda. Though all of the island has not been included in an overarching biodiversity assessment, the information that has been collected for what can be considered the most critical areas, gives a revealing insight into the status of the country's natural resources and current management conditions.

Table 2- Biodiversity Related Reports 2000-2011

AGENCY/PROJECT	DOCUMENT TITLE	AUTHOR	LOCATION
SIRMM (Sustainable Island Resource Management Mechanism)	Body Ponds Watershed Land Use zoning and Local Area Management Plan	Lucia Mings (Environment Tourism Consulting Ltd.) 2010	Environment Division and http://gefantigua.org/sirmm-demonstrations/sirmm-demo-1-rehabilitation-of-the-body-ponds-watershed-2/
	Sustainable Land Management Practices in Body Ponds	Esal and Associates (2009)	Environment Division and http://gefantigua.org/sirmm-demonstrations/sirmm-demo-1-

	Watershed		rehabilitation-of-the-body-ponds-watershed-2/
	Ecological Characterization of the Body Ponds Watershed, Antigua	Kevel C Lindsay, Jean-Pierre Bacle (2009)	Environment Division and http://gefantigua.org/sirmm-demonstrations/sirmm-demo-1-rehabilitation-of-the-body-ponds-watershed-2/
	Assessment of Rehabilitation Options (Body Ponds Watershed Assessment)	Brian Cooper (2008)	Environment Division and http://gefantigua.org/sirmm-demonstrations/sirmm-demo-1-rehabilitation-of-the-body-ponds-watershed-2/
	Cost Benefit Analysis for the Demonstration Study Area, Body Ponds Watershed	Lucia Mings (2010)	Environment Division and http://gefantigua.org/sirmm-demonstrations/sirmm-demo-1-rehabilitation-of-the-body-ponds-watershed-2/
	Qualitative Assessment of Sediment Sources, Strategy for the Body Ponds Watershed, Antigua	Dr. Carlos E Ramos Scharron (2009)	Environment Division and http://gefantigua.org/sirmm-demonstrations/sirmm-demo-1-rehabilitation-of-the-body-ponds-watershed-2/
	Environmental and Social Impact Assessment for the Body Ponds Watershed	Lucia Mings (2010)	Environment Division and http://gefantigua.org/sirmm-demonstrations/sirmm-demo-1-rehabilitation-of-the-body-ponds-watershed-2/
	Draft Report on Indicators and Baseline Assessment (SIRMM)		Offices of the Environment Division
	Sustainable Island Resource Management Zoning Plan for Antigua and Barbuda (including	Genivar (Trinidad and Tobago) 2011	Environment Division and http://gefantigua.org/sirmm-outcomes/sirmm-outcome-2-a-sustainable-island-resource-

	Redonda)		management-plan-developed-and-in-place/
	Terrestrial Field Characterizations and Assessments for the Assessment and Mapping of the South West Region of Antigua for the Ridge to Reef Demonstration project of the SIRMM	Island Resources Foundation: Kevel C Lindsay, Brian Cooper et al. (2011)	Environment division and http://gefantigua.org/sirmm-demonstrations/integrated-%E2%80%9Cridges-to-reef%E2%80%9D-management-of-the-sw-coast-of-antigua/
	Marine Biodiversity and Natural Resource Assessment for the Assessment and Mapping of the South West Region of Antigua for the Ridge to Reef Demonstration project of the SIRMM	Island Resources Foundation: Kevel C Lindsay et. al. (2011)	Environment division and http://gefantigua.org/sirmm-demonstrations/integrated-%E2%80%9Cridges-to-reef%E2%80%9D-management-of-the-sw-coast-of-antigua/
	Literature Review for the Assessment and Mapping of the South West Region of Antigua for the Ridge to Reef Demonstration project of the SIRMM	Island Resources Foundation: Kevel C Lindsay et. al. (2011)	Environment Division and http://gefantigua.org/sirmm-demonstrations/integrated-%E2%80%9Cridges-to-reef%E2%80%9D-management-of-the-sw-coast-of-antigua/
GEF Protected Areas Project	Assessment and mapping of Antigua and Barbuda ecosystem resources and promoting a system of protected areas for	Tropical Ecosystem Consulting (July 2010)	http://www.environmentdivision.info/?q=node/271#attachments

Antigua and Barbuda: Protected Areas Analysis for Antigua and Barbuda		
Assessment and mapping of Antigua and Barbuda ecosystem resources and promoting a system of protected areas for Antigua and Barbuda: Antigua and Barbuda National Action Plan for Protected Areas	Tropical Ecosystem Consulting (April 2010)	http://www.environmentdivision.info/?q=node/271#attachments
Establishing Protected Areas Targets, Indicators and Monitoring Methods for Protected Areas Development and Management in Antigua and Barbuda	Tropical Ecosystem Consulting (2011)	http://www.environmentdivision.info/?q=node/271#attachments
Financial Plan for the Effective Management of Protected Areas in Antigua and Barbuda	Efiah Norbert	http://www.environmentdivision.info/?q=node/271#attachments
Initial Analysis and Priority Setting: Antigua and Barbuda – Program of Work on Protected Areas (2007)	Environment Division	http://www.environmentdivision.info/?q=node/271#attachments
Capacity Building for	Environment	http://www.environmentdivision.info/?q=node/271#attachments

	Environmental Management for Antigua and Barbuda: Strategy and Action Plan 2007-12	Division	nfo/?q=node/271#attachments
OECS PERB/OPAAL Project	A Systems Plan for Protected Areas in Antigua and Barbuda (2010)	Environmental Advisors Inc.	Environment Division
	Biodiversity Inventory and Status Assessment Report for the Proposed Wallings Forest Protected Area (Antigua) and the Codrington Lagoon National Park (Barbuda	Island Resources Foundation	Environment Division
	Wallings Forest Conservation Area Management plan Volumel: Current Conditions and Management Prescriptions Volume II: Annex	Dr. Arthur Mitchell	Environment Division
	Environmental and socio-Economic studies for Opaal demonstration sites: Northeast marine management area (nemma), antigua Site report Eco report no. 10/2007 JuLy 31 , 2007	Eco-Engineering Caribbean Ltd. July 2007	http://oecs.org/esdu/publications/cat_view/28-environment-and-sustainable-development/33-opaal/53-baseline-study-reports

Bio-Safety Project	TRANSFORMING ANTIGUA AND BARBUDA: Inventories of the Current Status & Uses of Modern Biotechnology & Capacity-Building National Projects Related to the Safe Use of Biotechnology (book)	Dr. Anthony Richards – Consultant to National Biosafety Framework UNEP-GEF Project (2004)	Environment Division
	Promoting Biosafety in Antigua and Barbuda (booklet)	Dr. Anthony Richards, Mr. George Goodwin, Mr. Lennox Weston, Dr. Janil Gore-Francis, Mr. Anthony Liverpool (2004)	Environment Division http://www.environmentdivision.info/files/BioSafetyBooklet.pdf
	Promoting Biosafety in Antigua and Barbuda	Technical Advisory Committee to the UNEP-GEF NBF Project (2004)	Environment Division
	Second National Report on the Implementation of the Cartagena Protocol on Biosafety	Diann Black-Layne & Janil Gore-Francis	Environment Division
Other Projects/Agencies	Codrington Lagoon National Park Management Plan 2009-2019	Allen Putney	Environment Division
	Management of Biodiversity Management and Conservation Issues: Codrington Lagoon National Park	Kevel Lindsay and Brian Cooper (2009)	Environment Division

Important Bird Areas in the Caribbean – Antigua and Barbuda	Joseph Prosper, Victor Joseph et al (2009)	Environment Division, Environmental Awareness Group
Report: Water birds in Antigua and Barbuda, Water bird Conservation of the Americas	Joseph Prosper et.al	
Red List of Vascular Plants of Antigua and Barbuda (Issue 5)	Environmental Awareness Group (2008)	Environmental Awareness Group
A proposed Ecosystem Monitoring Plan for Codrington Barbuda	Jarecki, L. (2000)	Codrington Lagoon National Park
Plant Conservation Project	Environmental Awareness Group (2007)	Environmental Awareness Group
Management Plan for Cades Bay Marine Reserve	Philmore James (2002)	
An Introduction to the Herpetofauna of Antigua, Barbuda and Redonda, with some Conservation Recommendations	Jenifer Daltry (2007)	
Bats of Antigua, Northern Lesser Antilles	Scott Pedersen et.al (2006)	
First Records of <i>Ardops Nicholli</i> from Antigua,	Kevel Lindsay et.	

	lesser Antilles	al (2010)	
	Preliminary Survey for Spiders on Antigua	Sewlal, Jo-Anne (2008)	Environment Division / EAG/ Plant Protection Unit
	The Regional Redlist of Pteridophytes of Antigua, Barbuda and Redonda	Kevel Lindsay - 2012	Environment Awareness Group
	Transforming Antigua and Barbuda: Inventories of the Current Status & Uses of Modern Biotechnology	Dr. Anthony Richards (2003)	Environment Division
	SYNTHESIS REPORT Water Sector Model Policy and Model Water Act for countries within the Organization of Eastern Caribbean States	CEHI (Caribbean Environmental Health Institute)	Environment Division

As can be seen from the table above, most of the documents produced were completed as outputs from various projects. As a result of this, it has been difficult accessing the final reports once the projects have been completed. Efforts are being made however to ensure that copies of all the reports are obtained and can be accessed from the Environment Division and more specifically from the Division's website. It is also envisaged that electronic copies of these reports will also be available from the GEF Antigua website created under the SIRMM Project. This will allow effective review for the documents used in the production of the NBSAP final report as well as future access where necessary.

4.2 RESEARCH GAPS

It is clear from the reports presented in table two that there are still some research gaps in relation to the country's biodiversity as well as the current issues impacting conservation and management. Nationally, the country has committed through a number of upcoming projects to try and fill these gaps where possible. In the next two years it is anticipated that projects currently being negotiated and potential projects being reviewed for submission will include aspects of biodiversity where data is seen as lacking or missing.

Efforts are also being made on a regional basis to assist countries with this data gap problem as well. For example, as it relates to biodiversity and climate change impacts, in March 2007 the Caribbean Natural Resources Institute (CANARI) launched the Climate Change and Biodiversity in the Caribbean (CCBIC) Project. The project focuses on increasing understanding and consensus on what is known, and perhaps more importantly what is not known, about the predicted climate change trends and their impact on biodiversity in Caribbean small island developing states.

One of the major gaps identified in Antigua and Barbuda's existing knowledge of climate change and its impacts and national capacity to deal with its effects on biodiversity for example include:

- Research that moves from generating climate scenarios to projecting impact on ecosystem services including socio economic valuations
- Investigating how key species will respond to changes in temperature
- Researching how to establish a system of protected areas that facilitate effective biodiversity conservation and sustainable livelihood under climate change and variability
- Researching how to strengthen the resilience of eco systems to adapt to climate change
- Fostering linkages between biodiversity conservation and traditional use

The NBSAP report should seek to further examine how to address issues such as the ones identified above both in the short as well as the long term.

4.3 NBSAP GAPS

In assessing the current draft NBSAP in comparison to the requirements of the convention on biological diversity it is noted that the following issues are currently outstanding:

- The strategic plan for biodiversity for 2011-2020 adopted at the 10th COP of the CBD has to be incorporated in the revised NBSAP
- The newly adopted Nagoya Protocol on Access to Genetic Resources and the Equitable Sharing of its Benefits has to be incorporated into the revised NBSAP
- A Valuation study of biodiversity in Antigua and Barbuda needs to be completed and used to guide the policy level decisions as it relates to Biodiversity management in the

country. This was not completed for the previous NBSAP but has been found to be a very valuable undertaking when incorporated in any biodiversity management strategy.

- The NBSAP needs to establish a process that will seek to close legislative gaps as well as extend the coverage of protected areas within the country. This is imperative in achieving the goals of the UNCBD.
- Policy level commitment from the Cabinet needs to be achieved as part of the NBSAP process and used as a guiding force in completing and implementing the recommendations of the NBSAP.
- The Aichi Biodiversity targets must be incorporated into the NBSAP process and final document.
- Indicators for the achievement of the Aichi Biodiversity Targets need to be identified and included in the process of developing the NBSAP. Reports on these targets are yet to be submitted to the offices of the CBD and as such are in urgent need of completion under this project.
- The financing of the implementation of the NBSAP is critical in the process of development.
- All three objectives of the UNCBD needs to be incorporated into the revised NBSAP

An updated NBSAP needs to ensure the effective consideration and incorporation of the mentioned issues in order to move forward in meeting the goals of the UNCBDs strategic plan for 2011-20 including the Aichi Biodiversity targets.

CHAPTER 5

5 STEPS IN IMPLEMENTING THE CONVENTION –FIXING THE GAPS

5.1 INTRODUCTION

As mentioned in chapter one, the convention on biological diversity has three main objectives that ought to be met by each party to the convention. These objectives are:

- To conserve biological diversity
- The sustainable use of its components
- The fair and equitable sharing of the benefits arising out of the utilization of genetic resources including appropriate access to genetic resources and by appropriate transfer of relevant technologies taking into account all rights over those resources and to technologies, and by appropriate funding

The NBSAP is a primary means through which these objectives can be met. Based on the gaps identified in chapter 4 the following paragraphs highlight possible concerns and solutions that can be implemented to ensure the revised NBSAP identifies what needs to be done to address all the objectives of the convention.

5.2 MEETING THE AICHI BIODIVERSITY TARGETS

The Convention on Biodiversity strategic plan for 2011-20 is a very comprehensive document developed under the theme of “living in harmony with nature”. The plan is a ten year framework aimed at helping countries to implement actions that will save the world’s biodiversity and benefit all the people involved. The strategic plan with its Aichi targets is part of the process to meet the conventions vision for 2050: ensuring the effective valuation, conservation, restoration and wise use of biodiversity in an effort to maintain ecosystem services, sustain a healthy planet and deliver benefits to all.

Based on the existing documentation, policies and legislative framework, Antigua and Barbuda still has some work to do in meeting the goals established under the strategic plan. Though some of the targets may have already been met, there is need to do a complete assessment of each goal and its individual targets in an effort to determine whether or not they have been achieved. It is worth noting that in some cases, though the goals may have already been met, effective indicators for assessing the achievement of these goals have not yet been established. Therefore, the gap between what currently exists and what is required in updating the NBSAP to include the new strategic plan, may not be a daunting task.

5.3 FIFTH NATIONAL REPORT

Antigua and Barbuda is required to complete its fifth national report to the convention on biological diversity by March 2014. It is anticipated that in updating the NBSAP, the information collected will be utilized in completing this obligatory reporting requirement to the convention. The information contained in the fourth national report will prove to be an important addition to the list of documents needed to update the NBSAP as well as in completing the fifth national report.

CHAPTER 6

6 BIODIVERSITY ISSUES- PRIORITY ACTIONS AND NEXT STEPS

6.1 CRITICAL BIODIVERSITY ISSUES

The issues highlighted in the last NBSAP as being critical to the preservation of the country's biodiversity in 2001 are still issues that need to be addressed. Based on the information reviewed, the following issues will form a critical part in the development of the NBSAP:

- Establishment of a system of protected areas
- Implementation of protected areas management plans for all protected areas
- Conducting biodiversity valuation studies for areas identified for protection
- Developing the institutional, human resources and financial capacity for the management of protected areas and biodiversity on a whole
- The effective management of invasive alien species
- Mainstreaming biodiversity into the development planning of the country and into the management policies of key department such as the development control authority, the ministry of finance, the ministry of agriculture, the ministry of education and the ministry of tourism as well as health.
- Policies for access to genetic resources and the sharing of benefits from the utilization of these resources
- Implementation of appropriate legislation for effective natural resources management
- The integration of appropriate management systems for the management of biodiversity as it relates to the threats from climate change.
- The storage and access of critical biodiversity information

6.2 PRIORITY ACTIONS TO BE IMPLEMENTED UNDER THE NBSAP

The issues identified in 6.1 above do not constitute an exhaustive list and may be extended throughout the process of developing the NBSAP. Once the process has begun, it will be necessary to identify the key priority issues critical to the survival of the country's biodiversity. The research thus far suggests that one of the key areas to be addressed is securing political commitment to the implementation of the NBSAP once it's developed. Secondly, there will be a need to secure the financial resources necessary to implement same.

6.3 DEVELOPMENT OF THE NATIONAL BIODIVERSITY STRATEGY AND ACTION PLAN (NBSAP)

The development of the NBSAP will be a year-long process with activities scheduled to be completed throughout 2013 and early 2014. The development will include the integration of a number of stakeholders into a process aimed at ensuring all aspects of the government and non-government system are included. As can be seen from table one, progress has been made since the completion of the last draft NBSAP. Most of these changes have been positive ones such as securing the inclusion of biodiversity on the agenda of some critical policy decision issues. It is anticipated that this new focus as well as that currently being experience regionally and internationally, will help to push the NBSAP review process forward in a positive light.

At the national level, a number of consultative processes will have to take place in an effort to ensure all aspects of biodiversity conservation and management in the country are included in the process of re-developing the NBSAP for Antigua and Barbuda.

6.4 ASSESSING EXISTING SYNERGIES

Of critical importance to the NBSAP process is the need to assess existing synergies for biodiversity in country as well as regionally and internationally. The possibility of developing synergies with regional and international initiatives will also be a critical step in the process. Efforts to do this have already begun with the implementation of the Caribbean Challenge project and Initiative.

6.5 CONCLUSION

Since the completion of the Draft NBSAP in 2001 Antigua and Barbuda has had successful achievements in meeting its requirements under the Convention on Biological Diversity. One of the most notable accomplishments is the establishment of the Environment Division currently under the Ministry of Agriculture, Lands, Housing and the Environment. The decision by the government to establish this division in place of the Environment Unit which existed in 2001 shows its commitment to improving the conservation of the country's natural resources. The approval of the country's National Environmental Management Strategy is also an indication of this pledge. It is anticipated that this commitment will continue to be seen throughout the review of the NBSAP.

7 ANNEX 1: MULTILATERAL ENVIRONMENTAL AGREEMENTS

Environmental Agreements to which Antigua and Barbuda is a Party.

No.	Instrument & Title	Place & Date of Signature	Ratification	Date of Application	National Legislation	Comments
1	Basel Convention on the Transboundary Movement of Hazardous Wastes and its Disposal	March 22 nd 1989 Basel	April 5 th 1993 Accession	April 7 th 1993		No comments
2	United Nations Framework Convention on Climate Change	March 21 st 1994 (entry into force)	February 2 nd 1993 Ratification			No comments
3	Kyoto Protocol to the UN Framework Convention on Climate Change	December 11 th 1997 Kyoto	October 28 th 1998 Ratification			No comments
4	UN Convention to Combat Desertification In Those Countries Experiencing Serious Droughts and/or Desertification Particularly Africa	October 14 th 1994 Paris	June 6 th 1997 Ratification			No comments
5	UN Convention on Biological Diversity	June 5 th 1992 Rio de Janeiro	March 9 th 1993 Ratification	December 29 th 1993		No comments

No.	Instrument & Title	Place & Date of Signature	Ratification	Date of Application	National Legislation	Comments
6	Cartagena Protocol on Biosafety to the Convention on Biological Diversity	January 29 th 2000 Montreal	May 24 th 2000(signature)			No comments
7	Protocol Concerning Pollution From Land Based Sources And Activities in the Wider Caribbean Region (Protocol to the Catagena Convention)	October 6 th 1999 Aruba				Not yet signed
8	Protocol Concerning Specially Protected Areas and Wildlife (SPAW Protocol to the Catagena Convention)	January 18 th 1990 Jamaica	January 18 th 1990 Signature			Not yet ratified
9	Convention on International Trade in Endangered Species (CITES)		October 6 th 1997			
10	Vienna Convention for Protection of the Ozone Layer	December 3 rd 1992	December 3 rd 1992 (accession)			No comments
11	Convention Concerning the Protection of the World Cultural and Natural Heritage	December 17 th 1973 (entry into force)	January 11 th 1983 (accession)	January 2 nd 1984		No comments

No.	Instrument & Title	Place & Date of Signature	Ratification	Date of Application	National Legislation	Comments
12	Montreal Protocol on Substances that Deplete the Ozone Layer	September 16 th 1987 Montreal	March 12 th 1992 (accession)	March 3 rd 1993		No comments
13	Amendment to the Montreal Protocol on Substances That Deplete the Ozone Layer	29 th June 1990 London	February 23 rd 1993 (accession)			No comments
14	Amendment to the Montreal Protocol On Substances That Deplete the Ozone Layer	December 25 th 1992 Copenhagen	July 19 th 1993 (accession)			No comments
15	Amendment to the Montreal Protocol on Substances That Deplete the Ozone Layer adopted by the 9th meeting of the Parties	September 17 th 1997 Montreal	February 10 th 2000 ratification			No comments
16	International Convention For The Regulation of Whaling	December 2 nd 1946			None	Art.9 requires contracting states to punish infractions by persons on vessels under its jurisdiction. Antigua and Barbuda has no such legislation
17	Convention On The Prohibition Of Military Or Any Other Hostile Use Of Environmental Modification		October 25 th 1988 succession			No comments

No.	Instrument & Title	Place & Date of Signature	Ratification	Date of Application	National Legislation	Comments
Techniques						
18	Agreement Establishing Caribbean Environmental Health Institute					Not yet ratified Status and date Also Bermuda, Cayman Islands, Turks & Caicos s 18 Oct 82. R 29 th nov.82.BVI s 16 th July 81. R 1 st Dec 82.
19	International Convention on Oil Pollution Preparedness Response & Cooperation	London Nov. 1990	November 25 th 1998 ratification			No comments

8 ANNEX 2 ENACTED LEGISLATIONS RELATING TO THE ENVIRONMENT

No.	Legislation	Year of Enactment	Issues addressed	Application To the CBD Targets	Comments
1	Botanical Gardens Act	1900	Botanical Gardens	Strategic Goal C: Target 11-13	
2	Dumping at Sea Act	1975	Marine Environment	Strategic Goal B: Target 8	
3	Environmental Protection Levy Act	2002	Pollution	Strategic Goal A: Target 4	
4	Fisheries Act	2006	Fisheries Management	Strategic Goal C: Target 11,12 Strategic Goal B: Target 6	
5	Fisheries Regulations	2013	Fisheries Management	Strategic Goal C: Target 11,12	
6	Forestry Act	1941	Forest Management	Strategic Goal D: Target 14, 15 Strategic Goal B: Target 7	
7	Fumigation of Plants Act	1905	Plant Importation	Strategic Goal B: Target 9	

No.	Legislation	Year of Enactment	Issues addressed	Application To the CBD Targets	Comments
			Management/Invasive Species		
8	Importation of Life Fish Act	1975	Fisheries Management/Invasive Species	Strategic Goal B: Target 9	
9	Marine Areas (Enhancement and Preservation) Act	1972	Marine Environment	Strategic Goal C: Target 10,11	
10	Maritime Areas Act	1982	Marine environment	Strategic Goal B: Target 6	
11	National Parks Act	1984	National Parks	Strategic Goal C: Target 11	
12	National Parks Amendment Act	2004	National Parks	Strategic Goal C: Target 11	
13	Oil Pollution of Marine Areas Act	1995	Marine Pollution	Strategic Goal B: Target 8	
14	Turtle Act	1927	Species Protection	Strategic Goal C: Target 12	
15	Wild Bird Protection Act	1913	Species Protection	Strategic Goal C: Target 12	