

# JOHANNESBURG SUMMIT 2002

## ANTIGUA AND BARBUDA



### COUNTRY PROFILE



UNITED NATIONS

## INTRODUCTION - 2002 COUNTRY PROFILES SERIES

Agenda 21, adopted at the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992, underscored the important role that States play in the implementation of the Agenda at the national level. It recommended that States consider preparing national reports and communicating the information therein to the Commission on Sustainable Development (CSD) including, activities they undertake to implement Agenda 21, the obstacles and challenges they confront, and other environment and development issues they find relevant.

As a result, in 1993 governments began preparing national reports for submission to the CSD. After two years of following this practice, the CSD decided that a summarized version of national reports submitted thus far would be useful. Subsequently, the CSD Secretariat published the first Country Profiles series in 1997 on the occasion of the five-year review of the Earth Summit (Rio + 5). The series summarized, on a country-by-country basis, all the national reports submitted between 1994 and 1996. Each Profile covered the status of all Agenda 21 chapters.

The purpose of Country Profiles is to:

- Help countries monitor their own progress;
- Share experiences and information with others; and,
- Serve as institutional memory to track and record national actions undertaken to implement Agenda 21.

A second series of Country Profiles is being published on the occasion of the World Summit on Sustainable Development being held in Johannesburg from August 26 to September 4, 2002. Each profile covers all 40 chapters of Agenda 21, as well as those issues that have been separately addressed by the CSD since 1997, including trade, energy, transport, sustainable tourism and industry.

The 2002 Country Profiles series provides the most comprehensive overview to date of the status of implementation of Agenda 21 at the national level. Each Country Profile is based on information updated from that contained in the national reports submitted annually by governments.

Preparing national reports is often a challenging exercise. It can also be a productive and rewarding one in terms of taking stock of what has been achieved and by increasing communication, coordination and cooperation among a range of national agencies, institutions and groups. Hopefully, the information contained in this series of Country Profiles will serve as a useful tool for learning from the experience and knowledge gained by each country in its pursuit of sustainable development.

## NOTE TO READERS

The 2002 Country Profiles Series provides information on the implementation of Agenda 21 on a country-by-country and chapter-by-chapter basis (with the exception of chapters 1 and 23, which are preambles). Since Rio 1992, the Commission on Sustainable Development has specifically addressed other topics not included as separate chapters in Agenda 21. These issues of trade, industry, energy, transport and sustainable tourism are, therefore, treated as distinct sections in the Country Profiles. In instances where several Agenda 21 chapters are closely related, for example, chapters 20 to 22 which cover environmentally sound management of hazardous, solid and radioactive wastes, and chapters 24 to 32 which refer to strengthening of major groups, the information appears under a single heading in the Country Profile Series. Lastly, chapters 16 and 34, which deal with environmentally sound management of biotechnology, and transfer of environmentally sound technology, cooperation, capacity-building respectively, are presented together under one heading in those Country Profiles where information is relatively scarce.

*At the release of this Country Profile, Antigua and Barbuda had not updated it and, therefore, any new changes shall appear on our web page: <http://www.un.org/esa/agenda21/natlinfo>.*

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**LIST OF COMMONLY USED ACRONYMS**

ACS	Association of Caribbean States
AMCEN	Africa Ministerial Conference on the Environment
AMU	Arab Maghreb Union
APEC	Asia-Pacific Economic Cooperation
ASEAN	Association of Southeast Asian Nations
CARICOM	The Caribbean Community and Common Market
CBD	Convention on Biological Diversity
CIS	Commonwealth of Independent States
CGIAR	Consultative Group on International Agricultural Research
CILSS	Permanent Inter-State Committee for Drought Control in the Sahel
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
COMESA	Common Market for Eastern and Southern Africa
CSD	Commission on Sustainable Development of the United Nations
DESA	Department for Economic and Social Affairs
ECA	Economic Commission for Africa
ECCAS	Economic Community for Central African States
ECE	Economic Commission for Europe
ECLAC	Economic Commission for Latin America and the Caribbean
ECOWAS	Economic Community of West African States
EEZ	Exclusive Economic Zone
EIA	Environmental Impact Assessment
ESCAP	Economic and Social Commission for Asia and the Pacific
ESCWA	Economic and Social Commission for Western Asia
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FIDA	Foundation for International Development Assistance
GATT	General Agreement on Tariffs and Trade
GAW	Global Atmosphere Watch (WMO)
GEF	Global Environment Facility
GEMS	Global Environmental Monitoring System (UNEP)
GESAMP	Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection
GHG	Greenhouse Gas
GIS	Geographical Information Systems
GLOBE	Global Legislators Organisation for a Balanced Environment
GOS	Global Observing System (WMO/WWW)
GRID	Global Resource Information Database
HIV/AIDS	Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome
IAEA	International Atomic Energy Agency
ICSC	International Civil Service Commission
ICSU	International Council of Scientific Unions
ICT	Information and Communication Technology
ICTSD	International Centre for Trade and Sustainable Development
IEEA	Integrated Environmental and Economic Accounting
IFAD	International Fund for Agricultural Development
IFCS	Intergovernmental Forum on Chemical Safety
IGADD	Intergovernmental Authority on Drought and Development
ILO	International Labour Organisation
IMF	International Monetary Fund

IMO	International Maritime Organization
IOC	Intergovernmental Oceanographic Commission
IPCC	Intergovernmental Panel on Climate Change
IPCS	International Programme on Chemical Safety
IPM	Integrated Pest Management
IRPTC	International Register of Potentially Toxic Chemicals
ISDR	International Strategy for Disaster Reduction
ISO	International Organization for Standardization
ITTO	International Tropical Timber Organization
IUCN	International Union for Conservation of Nature and Natural Resources
LA21	Local Agenda 21
LDCs	Least Developed Countries
MARPOL	International Convention for the Prevention of Pollution from Ships
MEAs	Multilateral Environmental Agreements
NEAP	National Environmental Action Plan
NEPAD	New Partnership for Africa's Development
NGOs	Non-Governmental Organizations
NSDS	National Sustainable Development Strategies
OAS	Organization of American States
OAU	Organization for African Unity
ODA	Official Development Assistance/Overseas Development Assistance
OECD	Organisation for Economic Co-operation and Development
PPP	Public-Private Partnership
PRSP	Poverty Reduction Strategy Papers
SACEP	South Asian Cooperative Environment Programme
SADC	Southern African Development Community
SARD	Sustainable Agriculture and Rural Development
SIDS	Small Island Developing States
SPREP	South Pacific Regional Environment Programme
UN	United Nations
UNAIDS	United Nations Programme on HIV/AIDS
UNCED	United Nations Conference on Environment and Development
UNCCD	United Nations Convention to Combat Desertification
UNCHS	United Nations Centre for Human Settlements (Habitat)
UNCLOS	United Nations Convention on the Law of the Sea
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNDRO	Office of the United Nations Disaster Relief Coordinator
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNFF	United Nations Forum on Forests
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
UNIFEM	United Nations Development Fund for Women
UNU	United Nations University
WFC	World Food Council
WHO	World Health Organization
WMO	World Meteorological Organization

WSSD World Summit on Sustainable Development  
WTO World Trade Organization  
WWF World Wildlife Fund  
WWW World Weather Watch (WMO)

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**CHAPTER 2: INTERNATIONAL COOPERATION TO ACCELERATE SUSTAINABLE  
DEVELOPMENT IN DEVELOPING COUNTRIES AND RELATED DOMESTIC  
POLICIES**

**Decision-Making:** No information available.

**Programmes and Projects:** No information available.

**Status:** No information available.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** No information available.

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**CHAPTER 2: INTERNATIONAL COOPERATION TO ACCELERATE SUSTAINABLE  
DEVELOPMENT IN DEVELOPING COUNTRIES AND RELATED DOMESTIC  
POLICIES - TRADE**

**Decision-Making:** No information available.

**Programmes and Projects:** No information available.

**Status:** No information available.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** No information available.

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### **CHAPTER 3: COMBATING POVERTY**

**Decision-Making:** No information available.

**Programmes and Projects:** No information available.

**Status:** No information available.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** No information available.

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## **CHAPTER 4: CHANGING CONSUMPTION PATTERNS**

**Decision-Making:** No information available.

**Programmes and Projects:** No information available.

**Status:** Research is in progress on how to create more sustainable production and consumption patterns. However, technical training and access to resources for public education are needed.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** No information available.

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## **CHAPTER 4: CHANGING CONSUMPTION PATTERNS - ENERGY**

**Decision-Making:** No information available.

**Programmes and Projects:** No information available.

**Status:** No information available.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** No information available.

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## **CHAPTER 4: CHANGING CONSUMPTION PATTERNS - TRANSPORT**

**Decision-Making:** No information available.

**Programmes and Projects:** No information available.

**Status:** No information available.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** No information available.

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## **CHAPTER 5: DEMOGRAPHIC DYNAMICS AND SUSTAINABILITY**

**Decision-Making:** No information available.

**Programmes and Projects:** No information available.

**Status:** No information available.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** No information available.

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## **CHAPTER 6: PROTECTING AND PROMOTING HUMAN HEALTH**

**Decision-Making:** No information available.

**Programmes and Projects:** No information available.

**Status:** No information available.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** No information available.

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## **CHAPTER 7: PROMOTING SUSTAINABLE HUMAN SETTLEMENT DEVELOPMENT**

**Decision-Making:** No information available.

**Programmes and Projects:** No information available.

**Status:** No information available.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** No information available.

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## **CHAPTER 8: INTEGRATING ENVIRONMENT AND DEVELOPMENT IN DECISION-MAKING**

**Decision-Making:** A National Sustainable Development Coordination Body is in the process of being established. The Ministry of Tourism, Culture and Environment is the contact point, and the following are also involved: the Central Board of Health, the Government Statistics Unit, the Antigua Public Utilities Authority, and the Development Control Authority. Environmental Impact Assessment has become essential when undertaking development projects.

**Programmes and Projects:** No information available.

**Status:** No information available.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** Antigua and Barbuda is a member of the Organization of Eastern Caribbean States (OECS), the Caribbean Community (CARICOM) and the Caribbean Conservation Association. An exchange of information on sustainable development issues at the regional or sub-regional level does not take place, but such an exchange would be useful, and would be best executed through OECS. Better identification of systems most appropriate and beneficial to small-island states would be needed.

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## **CHAPTER 9: PROTECTION OF THE ATMOSPHERE**

**Decision-Making:** No information available.

**Programmes and Projects:** No information available.

**Status:** The main issues relating to climate change are the potential effect on the strength and frequency of hurricane activity and the likelihood of flooding or drought. Certain coastal areas have been considerably eroded in recent times, especially after hurricane activity.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** The UN Framework Convention on Climate Change was ratified in 1993. The Montreal Protocol on Substances that Deplete the Ozone Layer was ratified in 1992.

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## **CHAPTER 10: INTEGRATED APPROACH TO THE PLANNING AND MANAGEMENT OF LAND RESOURCES**

**Decision-Making:** The Development Control Authority (DCA) is responsible for processing and investigating applications for land use, and aims at ensuring sustainable approaches to land use. The main issues relating to land management are balancing land needs of the tourism and agricultural sectors and the demand for household plots, as well as issues related to waste disposal. A process encouraging participation of community groups in land management has not been fully implemented and would be greatly aided by a centralised plan.

**Programmes and Projects:** No information available.

**Status:** No information available.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** No information available.

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## **CHAPTER 11: COMBATING DEFORESTATION**

**Decision-Making:** No information available.

**Programmes and Projects:** No information available.

**Status:** No information available.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** No information available.

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## **CHAPTER 12: MANAGING FRAGILE ECOSYSTEMS: COMBATING DESERTIFICATION AND DROUGHT**

**Decision-Making:** Please refer to the information provided in Chapter 18: Freshwater.

**Programmes and Projects:** No information available.

**Status:** No information available.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** The United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought an/or Desertification, Particularly in Africa was ratified in 1997.

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Chapter 13: Managing fragile ecosystems: sustainable mountain development

**Decision-Making:** No information available.

**Programmes and Projects:** No information available.

**Status:** No information available.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** No information available.

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## **CHAPTER 14: PROMOTING SUSTAINABLE AGRICULTURE AND RURAL DEVELOPMENT**

Please refer to the information provided in Chapter 18: Freshwater.

\* \* \*



## **CHAPTER 15: CONSERVATION OF BIOLOGICAL DIVERSITY**

**Decision-Making:** A legal framework for the protection of endangered species has been adopted and public awareness campaigns are being carried out.

**Programmes and Projects:** No information available.

**Status:** Generally biological resources are threatened by the needs of industry. The main problems are destruction of habitat, lack of inventories, lack of trained staff and little public awareness.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** The Convention on Biological Diversity was ratified in 1993. Antigua and Barbuda participate in the Action Plan for the Environment of Latin America and the Caribbean, which includes conservation of biological diversity. Technical assistance on a small scale has been provided for projects such as documentation on and preservation of seabird colonies in Barbuda.

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**CHAPTERS 16 AND 34: ENVIRONMENTALLY SOUND MANAGEMENT OF BIOTECHNOLOGY AND TRANSFER OF ENVIRONMENTALLY SOUND TECHNOLOGY, COOPERATION AND CAPACITY-BUILDING**

**Decision-Making:**

*Technologies:* There is no national policy or strategy for the promotion of Environmentally Sound Technologies (ESTs) in general or in special sectors. The specific protection of intellectual property rights has not been addressed; however, the registration of trademarks, a small facet, has been accounted for in legislation.

*Biotechnologies:* No information available.

**Programmes and Projects:**

*Technologies:* No information available.

*Biotechnologies:* No information available.

**Status:**

*Technologies:* ESTs are most urgently needed in agriculture and in the tourism sector.

*Biotechnologies:* No information available.

**Capacity-Building, Education, Training and Awareness-Raising:**

*Technologies:* No information available.

*Biotechnologies:* No information available.

**Information:**

*Technologies:* No information available.

*Biotechnologies:* No information available.

**Research and Technologies:**

*Technologies:* No information available.

*Biotechnologies:* No information available.

**Financing:**

*Technologies:* No information available.

*Biotechnologies:* No information available.

**Cooperation:**

*Technologies:* No information available.

*Biotechnologies:* No information available.

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**CHAPTER 17: PROTECTION OF THE OCEANS, ALL KINDS OF SEAS, INCLUDING ENCLOSED AND SEMI-ENCLOSED SEAS, AND COASTAL AREAS AND THE PROTECTION, RATIONAL USE AND DEVELOPMENT OF THEIR LIVING RESOURCES**

**Decision-Making:** Plans for the adaptation to sea-level rise are not available and there is no funding for adaptation measures.

**Programmes and Projects:** No information available.

**Status:** The main issues relating to climate change are the potential effect on the strength and frequency of hurricane activity, and the likelihood of flooding and/or drought. Certain coastal areas have been considerably eroded in recent times, especially after hurricane activity.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** The United Nations Convention on the Law of the Sea was ratified in 1989. Community consultations on coastal resource management were held under the aegis of the Organisation of Eastern Caribbean States (OECS). However, goals of public awareness campaigns have not been realized.

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## **CHAPTER 18: PROTECTION OF THE QUALITY AND SUPPLY OF FRESHWATER RESOURCES: APPLICATION OF INTEGRATED APPROACHES TO THE DEVELOPMENT, MANAGEMENT AND USE OF WATER RESOURCES**

**Decision-Making:** The Antigua Public Utilities Authority (APUA) is responsible for coordinating water resource management and development. Its mandate also includes hydrological and hydroecological studies, construction of catchments, dam design and construction. At the river basin level, the following are involved: the Central Board of Health, the Ministry of Agriculture, Lands and Fisheries and the Development Control Authority (DCA). Their mandates include: monitoring freshwater quality, general watershed management and the establishment of water storage facilities in newly constructed buildings. The Soil and Water Conservation Division of the Ministry of Agriculture ensures that the establishment of farming plots, household plots, and water conservation structures is balanced, factoring sustainability into consideration. The Public Utilities Act (1993) is the main legislation for water resources management and development. Legislation provides for fining and legal action against those found to be involved in polluting waterways. A national policy for disaster preparedness is under development. The role of the private sector in water resources management and development is little and should be increased.

**Programmes and Projects:** No information available.

**Status:** Annual withdrawals of ground and surface waters amount to 47.55% of available total water or 441,107,664 imp. gals. Average domestic consumption of water amounts to 14.07 litres per capita and per diem. The density of hydrological networks (average area served by one hydrological station) is 55.94 sq km. The pricing of water for households is meant to recover the cost of maintenance of the water-borne system only. The cost of actually obtaining water from the water table is government-subsidised. Industrial rates for water use exceed those for household and agricultural use, providing greater incentives for conservation in industry. A debate is underway to determine whether the policy should be changed and the percentage increase of cost recovery. Desalination plants are being used in order to augment freshwater supplies, as an alternative to the use of ground water and, when necessary, to supplement the volume of water available in agriculture and industry. During seasons of drought, desalination plants provide up to 83% of all freshwater. They also help maintain the amount of water supplied and stabilise prices. However, the special needs of the poor need to be addressed. The Government intends to ensure universal coverage of water supply and sanitation; however, there is no centralised waste water treatment available, and St. Johns and its environ are in desperate need of centralised sewage treatment facilities. Some hotels recycle waste water on a small scale. Feasibility studies, design and financing are needed to address waste water treatment needs. Concerning water purification, assistance is needed to determine ground water availability and concentration of chemical contaminants. All water within the pipe borne system is treated and is potable. However, some is extracted from the water table illegally, and is untreated. For water quality control, WHO standards are used. Major constraints towards integrated management of water resources are lack of public awareness, lack of human and financial resources and lack of training for public servants. Lack of public awareness particularly hinders the participation of stakeholders in decision-making processes and, therefore, education programmes are desperately needed. Water supply is limiting the expansion of the farming sector, e.g. of canneries and crop production.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** Information on water management and development in the agricultural sector is collected through the Soil and Water Conservation Division of the Ministry of Agriculture. The Central Board of Health is collecting information on the household sector, e.g. it carries out laboratory inspection on water samples for microbial content. Information is available on request, in part on diskette, to Government agencies and other bodies.

**Research and Technologies:** No information available.

**Financing:** The estimated cost for achieving universal coverage of water and sanitation is US\$ 300 million.

**Cooperation:** External funding has not been provided on a significant scale since the mid-1980s, but in recent times, APUA has been affiliated with the Pan-American Health Organization (PAHO), and the Caribbean Basin Water Management Programme. USAID has also been of invaluable assistance. Antigua and Barbuda participate in the Action Plan on the Environment for Latin America and the Caribbean. Occasional reports highlighting e.g. sectors needing assistance, progress in water supply technology, and the ecology of watersheds are occasionally prepared for OECS.

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**CHAPTER 19: ENVIRONMENTALLY SOUND MANAGEMENT OF TOXIC CHEMICALS,  
INCLUDING PREVENTION OF ILLEGAL INTERNATIONAL TRAFFIC IN  
TOXIC AND DANGEROUS PRODUCTS**

**Decision-Making:** No information available.

**Programmes and Projects:** No information available.

**Status:** No information available.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** No information available.

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## **CHAPTERS 20 TO 22: ENVIRONMENTALLY SOUND MANAGEMENT OF HAZARDOUS, SOLID AND RADIOACTIVE WASTES.**

### **DECISION-MAKING:**

*Hazardous wastes:* No information available.

*Solid wastes:* There is no national plan for waste management.

*Radioactive wastes:* No information available.

### **Programmes and Projects:**

*Hazardous wastes:* No information available.

*Solid wastes:* No information available.

*Radioactive wastes:* No information available.

### **Status:**

*Hazardous wastes:* No information available.

*Solid wastes:* The main problems relating to waste management are the outdated methods of waste treatment and the lack of centralised sewage treatment facilities. Improper waste disposal and land runoff result in the contamination of coastal areas. Financial and technical assistance are needed to establish a centralised waste and sewage treatment system. Also, extensive and comprehensive policies need to be enacted to control pesticide use and monitoring. In addition, a strong, active pesticide control board is needed. A first step to improve the situation would be an assessment of the present structures and advice of modern technologies for the establishment of a centralised waste treatment system. Please refer also to the information provided under Chapter 18: Freshwater.

*Radioactive wastes:* No information available.

### **Capacity-Building, Education, Training and Awareness-Raising:**

*Hazardous wastes:* No information available.

*Solid wastes:* No information available.

*Radioactive wastes:* No information available.

### **Information:**

*Hazardous wastes:* No information available.

*Solid wastes:* No information available.

*Radioactive wastes:* No information available.

### **Research and Technologies:**

*Hazardous wastes:* No information available.

*Solid wastes:* No information available.

*Radioactive wastes:* No information available.

### **Financing:**

*Hazardous wastes:* No information available.

*Solid wastes:* No information available.

*Radioactive wastes:* No information available.

### **Cooperation:**

*Hazardous wastes:* The Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal was ratified in 1991.

*Solid wastes:* No information available.

*Radioactive wastes:* No information available.

## **CHAPTERS 24 TO 32: STRENGTHENING THE ROLE OF MAJOR GROUPS**

**Women:** Cooperation: The Convention on the Elimination of All Forms of Discrimination against Women was ratified in 1989.

**Children and youth:** Decision-making: NGOs participate in decision-making for sustainable development.

**Indigenous people:** No information available.

**Non-governmental organizations:** No information available.

**Local authorities:** No information available.

**Workers and trade unions:** No information available.

**Business and industry:** No information available.

**Scientific and technological community:** No information available.

**Farmers:** No information available.

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## **CHAPTER 33: FINANCIAL RESOURCES AND MECHANISMS**

**Decision-Making:** Environmental taxes have not been introduced, and environmentally unsustainable subsidies have not been identified.

**Programmes and Projects:** Projects financed through Foreign Direct Investment must be preceded by an environmental impact assessment.

**Status:** No information available.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Cooperation:** OAS provided financial assistance for the establishment of community-based enterprises based on the products of NEEM (*Azadirachta indica*).

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## **CHAPTER 35: SCIENCE FOR SUSTAINABLE DEVELOPMENT**

**Decision-Making:** No information available.

**Programmes and Projects:** No information available.

**Status:** No information available.

**Capacity-Building, Education, Training and Awareness-Raising:** The Environment Unit in the Ministry of Tourism, Culture and Environment facilitates dialogue between the scientific community, the Government and the public at large. However, better access to the resources of the media would be a great help. Two thousand and ninety nationals of Antigua and Barbuda are holders of university degrees or an equivalent and are considered to be "potential scientists and engineers". This is 3% out of a total population of 59,355. However, technical training and access to resources for public education are needed.

**Information:** No information available.

**Research and Technologies:** Research is in progress on how to create more sustainable production and consumption patterns.

**Financing:** No information available.

**Cooperation:** Reports on science issues are occasionally prepared for the Organisation of Eastern Caribbean States (OECS), e.g. through funding proposals.

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## CHAPTER 36: PROMOTING EDUCATION, PUBLIC AWARENESS AND TRAINING

**Decision-Making:** No information available.

**Programmes and Projects:** No information available.

**Status:** Education is freely accessible. School attendance is mandatory from age 5 to 16. School life expectancy, the estimated average number of years a student will remain enrolled in an educational institution, is 11 years (1991). The rate of change of school-age population in 1994/95 was 5.7%. The Antigua State College offers technical and commercial programmes, an advanced level programme, and the first two years of university education through the University of the West Indies. Community consultations on coastal resource management were held under the aegis of the Organisation of Eastern Caribbean States (OECS). However, goals of public awareness campaigns have not been realized. The Environment Unit hopes to investigate the potential for an official school lecture series. Extensive programmes for environmental and sustainable development education are desperately needed, although a few have been carried out on a small scale. Trained teachers are also needed. With specific respect to water conservation and management, a few programmes are available, but their structure needs to be made consistent, wide ranging and better organized. Periodically, the print and electronic media are employed to promote sustainable use of natural resources and to stimulate public interest. Capacity-building must provide considerable education and involve the public at all levels. In order to apply capacity-building principles to development programmes, the members of the public need to experience the benefits of these programmes themselves. The principles of capacity-building must be seen as an advantage to such persons, and they must be included in programmes to increase capacity building for development. The following capacities are needed: legislative systems supported by the public, resources for education of the public, and access to current information relevant to particular circumstances.

**Information:** Reports on issues related to education and awareness-raising are occasionally prepared for the Organisation of Eastern Caribbean States (OECS) and, on request, information is being compiled for bodies such as OAS.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** No information available.

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**CHAPTER 37: NATIONAL MECHANISMS AND INTERNATIONAL COOPERATION FOR CAPACITY-BUILDING IN DEVELOPING COUNTRIES.**

**Decision-Making:** No information available.

**Programmes and Projects:** No information available.

**Status:** No information available.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** No information available.

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## **CHAPTER 38: INTERNATIONAL INSTITUTIONAL ARRANGEMENTS**

This issue deals mainly with activities undertaken by the UN System.

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## **CHAPTER 39: INTERNATIONAL LEGAL INSTRUMENTS AND MECHANISMS**

This issue has been covered under **Cooperation** in the various chapters of this Profile.

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## **CHAPTER 40: INFORMATION FOR DECISION-MAKING**

**Decision-Making:** No information available.

**Programmes and Projects:** No information available.

**Status:** No information available.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** No information available.

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## **CHAPTER: INDUSTRY**

**Decision-Making:** There is no national policy or strategy for ecologically sustainable industrial development.

**Programmes and Projects:** No information available.

**Status:** The main problems associated with industrial activities are seepage of partially treated sewage to waterways and choking of near-shore ecosystems due to improper disposal of waste. These stresses are primarily created from the tourism industry. The development of tourism sites close to freshwater ecosystems is especially a considerable problem.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** Reports on issues related to industrial development are prepared on request for bodies such as the Organisation of Eastern Caribbean States (OECS).

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** No information available.

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## **CHAPTER: SUSTAINABLE TOURISM**

**Decision-Making:** No information available.

**Programmes and Projects:** No information available.

**Status:** Tourism creates significant stresses on the environment, e.g. through seepage of partially treated sewage to waterways and choking of near-shore ecosystems due to improper disposal of waste. The development of tourism sites close to freshwater ecosystems is especially a considerable problem.

**Capacity-Building, Education, Training and Awareness-Raising:** No information available.

**Information:** No information available.

**Research and Technologies:** No information available.

**Financing:** No information available.

**Cooperation:** No information available.

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