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WATER RESOURCES LEGISLATION AND ADMINISTRATION IN SELECTED CARIBBEAN COUNTRIES



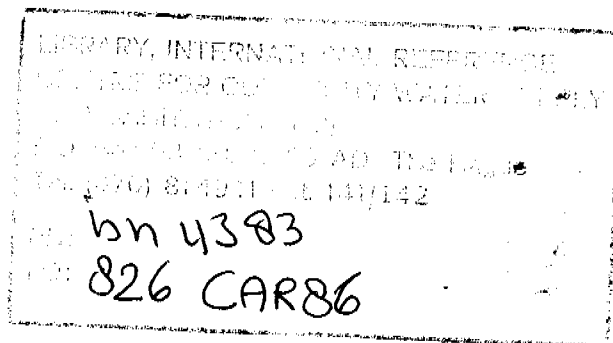
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PREFACE

This study on Water Resources Legislation and Administration in selected Caribbean countries continues the collection, systematic analysis and dissemination of information in the specialized field of water resources law, which has been fostered over the years by both the Food and Agriculture Organization of the United Nations (FAO) and the Department of Technical Co-operation for Development of the United Nations Secretariat. It is believed that the kind of comparative information contained in this study can be of practical value and assistance to developing countries - particularly those in the Caribbean region - in dealing with the complex legal and institutional issues involved in the development, conservation and use of their water resources. This joint FAO/United Nations publication is in accordance with paragraph 52 (ii) of recommendation D of the United Nations Water Conference requesting the exchange of specialized legal information and data. 1/

The countries treated include some of the smaller English-speaking Caribbean islands - namely, Antigua and Barbuda, the Cayman Islands, Montserrat, St. Kitts and Nevis, and St. Vincent and the Grenadines - as well as Jamaica, the Dominican Republic and Haiti. The study thus reflects a certain diversity both in respect of the geographical features of the countries concerned and their legal systems.

The sections on the Dominican Republic and Haiti are based on M. T. Sandoval's contribution (original Spanish) to FAO Legislative Study No. 8, entitled Legislación de Aguas en América Central, Caribe y México, published in 1975. All the other sections are based on mission reports prepared by the Department of Technical Co-operation for Development of the United Nations Secretariat and by the FAO Legislation Branch.

1/ Report of the United Nations Water Conference, Mar del Plata, 14-25 March 1977 (United Nations publication, Sales No. E.77.II.A.12).

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ANTIGUA AND BARBUDA

INTRODUCTION

Antigua lies at the southern end of the Leeward Islands chain, with a land area of 108 square miles and a population of 75,000 (including Barbuda). An absence of mountains and thorough deforestation distinguish Antigua from the other Leeward Islands. The island is one-third volcanic (fairly old and extinct), with knobbly hills rising to 1,319 feet in the south-west; one-third limestone forming an undulating area 100-300 feet high in the north-east; and a central north-west-south-east low-lying area of mixed volcanic and sedimentary/mudstone, together with areas of alluvials. There are no permanent watercourses. There is an abundance of rolling farm land with some woodland. Sugar-cane, once an important crop, is no longer grown. Instead, there are a number of pilot projects covering stock raising (cattle), cotton, corn, root crops (peanuts) and pineapples. The economy is mixed; tourism is being encouraged, new light industries are being attempted, and a variety of agricultural products is being tried.

The average annual rainfall is 40-50 inches. Most of the public water supply comes from surface dams, which serve over 90 per cent of the population through 7,000 public service connections and 400 standpipes. Distribution losses, however, are high (some urban pipework is over 90 years old) and metering is poor. Furthermore, the existing dams are shallow and suffer a large loss to evaporation and leakage, such that from time to time they dry up. A number of small springs were formerly developed for village supplies, and also a considerable number of dug wells. These are now disused and the Government supplies most of the public needs. A small desalination plant serves the needs of a tourist resort. Finally, it should be noted that catchment of water from roofs is not practised to a major extent.

Barbuda lies 25 miles north of Antigua and has an area of 62 square miles. Barbuda is a coral island, flat and well-wooded, with highlands rising to 200 feet in the north-east.

Formerly a British colony, the State of Antigua and Barbuda achieved full independence on 1 November 1981. Under the Constitution, the Queen is the Head of State, represented by the Governor-General. The Government consists of the Prime Minister and Ministers who may be elected members of the Lower House or appointed members of the Upper House. The Constitution provides for a bicameral legislature, consisting of a Lower House of elected members and an Upper House of members appointed by the Governor-General. The Barbuda Local Government Council has full autonomy over the internal affairs of Barbuda, with the Government retaining control of land and police matters.

Unless the contrary is provided by ad hoc legislation, the laws of Antigua appear to apply automatically to Barbuda. 1/

I. LEGISLATION IN FORCE

The following statutes bear upon the management, development and conservation of fresh water resources in Antigua and Barbuda:

1. Antigua Agricultural Development Corporation Acts, No. 11 of 1978;

2. Antigua Constitution Order, 1967, S. I. No. 225 of 1967;
3. Antigua Development Agency Act, No. 17 of 1970;
4. Barbuda (Extension of the Laws of Antigua) Act, Cap. 122 of the Revised Laws of Antigua (1965);
5. Barbuda Local Government Act, No. 15 of 1976, as amended;
6. Barbuda (Shooting and Fishing) By-Law, Cap. 121 of the Revised Laws of Antigua (1965);
7. Crown Lands (Land Settlement) Regulations, Cap. 130 of the Revised Laws of Antigua (1965);
8. Crown Lands (Sale) Regulations, Cap. 130 of the Revised Laws of Antigua (1965);
9. Development Fund Act, No. 6 of 1976;
10. Emergency Powers (Hurricane, Earthquake, Fire or Flood) Ordinance, Cap. 307 of the Revised Laws of Antigua (1965), as amended;
11. Fisheries (Restrictions on Methods of Fresh-Water Fishing) Regulations, 1978;
12. Forestry Ordinance, Cap. 99 of the Revised Laws of Antigua (1965), as amended;
13. Ice and Aerated Water Factories Regulations, Cap. 236 of the Revised Laws of Antigua (1965);
14. Land Adjudication Act, No. 16 of 1975;
15. Land Development Control Act, No. 15 of 1977;
16. Land Development (Interim Control) Regulations, No. 17 of 1977;
17. Malicious Damage Act, Cap. 51 of the Revised Laws of Antigua (1965);
18. Milk Regulations, Cap. 236 of the Revised Laws of Antigua (1965), as amended;
19. Pesticides Control Act, No. 15 of 1973;
20. Privy Regulations, Cap. 236 of the Revised Laws of Antigua (1965);
21. Public Health Ordinance, Cap. 236 of the Revised Laws of Antigua (1965), as amended;
22. Public Utilities Act, No. 10 of 1973, as amended;
23. Public Utilities (Supply and Discontinuance) Regulations, No. 25 of 1974;
24. Public Utilities (Water Tariffs) Order, No. 25 of 1980;

25. Public Works and Road Act, Cap. 281 of the Revised Laws of Antigua (1965), as amended;
26. Registered Land Act, No. 17 of 1975;
27. Slum Clearance and Housing Ordinance, Cap. 277 of the Revised Laws of Antigua (1965), as amended;
28. Town and Country Planning Ordinance, Cap. 278 of the Revised Laws of Antigua (1965), as amended;
29. Watercourses and Waterworks Regulations, Cap. 194 of the Revised Laws of Antigua (1965), as amended.

II. OWNERSHIP OF CONTROL STATUS OF WATERS

All ponds, springs, streams and wells in Antigua (and Barbuda) have been placed - in principle - under direct government control by the 1945 Watercourses and Waterworks Ordinance 2/ and by its successor, the 1973 Public Utilities Act. 3/ Prior to the enactment of these statutes, specific ponds, springs, streams and wells had from time to time been expressly vested in the Crown or placed under public control by ad hoc statutes 4/ and subsequently transferred to the Government (Public Utilities Authority). 5/ In addition, reservoirs and tanks - including the water stored in them - which have been built for public water supply purposes pursuant to the 1888 Water Supply Act, 6/ the 1923 Waterworks Ordinance 7/ and the 1945 Watercourses and Waterworks Ordinance, and wells dug for the same purposes pursuant to the latter Ordinance, had been vested in the Crown 8/ and subsequently transferred to the Public Utilities Authority.

The 1973 Public Utilities Act further empowered the administering authorities to subject surface watercourses to the Act's provisions, or to exempt them therefrom. 9/ The exact import of this provision, however, is unclear in view of the fact that all surface watercourses are automatically subject to government control by force of law.

Finally, it is unclear whether the placing of "wells" under direct government control extends to as yet untapped ground-water resources at large. If this were the case, the régime of governmental control would override the otherwise applicable common law rules on ground-water utilization.

Crown (public) lands can be sold for settlement purposes or otherwise, but the Government expressly retains the ownership or use rights with respect to the springs and any water which occurs in or under the land, including the bed and banks of streams and a given space around the source and either bank. 10/

III. RIGHT TO USE WATER

The abstraction and use of surface water resources and - so it appears - the use of wells are subject, in principle, to government control. 11/ The law fails to spell out, however, the procedural and the substantive provisions necessary to effect the above-mentioned controls (e.g., type of user permit to be granted, applicable procedure and conditions, recording of permits and the like).

Surface waters and wells could be made to revert to a régime of uncontrolled utilization by express proclamation made to that effect by the Public Utilities Authority. 12/

To the extent that ground-water resources may escape the scope of government controls, the use of such resources is governed by the rules of common law. A landowner at common law is entitled to sink a well on his land and abstract the underlying ground water even if by so doing he may interfere with the supply of similar water to other landowners. 13/

Finally, "rights of water", "natural rights of water", aqueducts, canals and dams are expressly listed by the land registration laws among the "overriding interests" - or easements - to which any registered land is automatically subject unless the contrary is stated in the land register. 14/ The exact origin, nature and content of said water rights, however, is unclear.

IV. BENEFICIAL USES OF WATER (WATER SUPPLY)

The beneficial uses of water in Antigua are not diversified, and can all be conveniently grouped under the heading "water supply". The only notable exception is fresh-water fishing, which is subject to regulations whereby specific fishing methods in designated public reservoirs in the island of Antigua are restricted. 15/ In addition, fresh-water fishing in the island of Barbuda is subject to a permit. 16/

Provisions concerning water supplies can be found in (a) the legislation regulating the provision of public water supplies, (b) public health legislation, and (c) building and land use planning legislation.

A. Provision of public water supplies

The provision and regulation of public water supplies, and the sale of water, are the exclusive responsibilities of the Water Division of the Public Utilities Authority. 17/ For the island of Barbuda, the same responsibilities have been devolved upon the Barbuda Local Council. 18/

Connecting to a public distribution system, and any alteration to existing connection, must be authorized by the public authorities, subject to a fine or imprisonment, and to the discontinuance of the service. 19/ Detailed regulations govern (a) the application procedure for, and the manner of, connecting to a public water service; (b) the maintenance of water service connection; and (c) the materials, fittings and size of the pipes to be employed. 20/ The sale of publicly supplied water is forbidden under penalty of a fine or imprisonment, and to the discontinuance of the service. 21/

Water consumed must be paid for according to the applicable rates. 22/ Metering of all connections is mandatory, and it is the responsibility of the public water authorities to install and maintain meters, subject to a rental fee. 23/ The disconnection of meters is punished with a fine. 24/

In addition to the cases mentioned above, the water service can be discontinued for non-payment of applicable water rates and charges, for a breach of provisions concerning the fouling with waste of water, and for the tampering with system appliances. 25/ The Public Utilities Authority may also interrupt the service for maintenance purposes, in case of fire or for water conservancy purposes. 26/

B. Building and land use planning aspects

The land use legislation currently in force mandates that land development site plans and detailed plans must show the water supply systems that it is intended to provide, and that these must conform to environmental health standards to be laid down by the public health environmental health authority (Central Board of Health). 27/ In addition, the installation of facilities for the storage of water is included among the specifications required of any land development project for which the approval of the planning authorities is necessary. In particular, the design for a development scheme must provide for facilities capable of storing no less than 10 imperial gallons of water per square foot or roof surface if piped water is not provided for. Otherwise, storage facilities in other than public buildings must have a minimum capacity of 50 imperial gallons per person normally occupying the building, while storage facilities in public buildings are subject to ad hoc standards to be laid down by the planning authorities (Development Control Authority). 28/ The enforcement of these provisions rests on a fine (not to exceed \$EC 500) or imprisonment (up to three months). 29/ However, to the extent that these same provisions are incorporated in the instrument of approval of a land development scheme - whereby the approval is made conditional upon compliance with the above-mentioned water storage regulations - non-compliance with the latter can then be construed as a breach of the terms of a land development permit and trigger the complex enforcement process envisaged by the law. 30/ In Barbuda, the Barbuda Council has been made responsible for the provision of tanks for the collection and storage of rainwater. 31/

The lack of "adequate and readily accessible" water supplies in buildings used for human habitation can trigger the intervention of the housing and planning authorities for slum clearance and reconstruction purposes. 32/ Finally, provisions facilitating the public supply of water must be included in ad hoc town planning and regional development schemes aimed at controlling land use in the areas affected by them. 33/

C. Public health aspects

From a public health standpoint, public or private water supplies and wells used for domestic consumption which are hazardous to health constitute a nuisance and are subject to abatement and relevant enforcement provisions - including the direct execution by the public health authorities of orders issued by them. 34/

Public washhouses and bathhouses can be provided for and regulated by the Central Board of Health and, in Barbuda, by the Barbuda Council. 35/ The Central Board of Health is also responsible for the watering of streets. 36/ Detailed regulations finally govern the supply of water for bakeries 37/ and dairies, 38/ as well as for the wholesomeness of water employed in the manufacture of ice and aerated water. 39/

V. HARMFUL EFFECTS OF WATER

A. Watercourses and catchment protection

The protection of the hydraulic integrity of ponds, springs and streams at large, and the protection of designated watersheds, is the responsibility of the public authorities and is subject to ad hoc regulations to be used by them (i.e., the Minister of Works, Communications and Public Utilities, and the Public Utilities Authority). 40/ In particular, the limited regulations existing to date empower the Public Utilities Authority to prohibit the cultivation of land or the grazing of livestock within 30 feet from the above-mentioned water bodies. 41/ The protection of water catchment areas and the prevention of soil erosion are also indirectly fostered by the existing legislation on the protection of forests and on reforestation. 42/

B. Drainage and sewerage

The provision of a sewerage service system is the responsibility of the Public Utilities Authority 43/ and, in Barbuda, of the Barbuda Council. 44/

Specific legal provisions on drainage and the disposal of sewage exist within the framework of the land use planning, health, public works and land adjudication legislation.

The former mandates the provision of sewage disposal and drainage to a septic tank or more efficient disposal facility of a design to be approved by the Development Control Authority in buildings intended for human habitation or as a work place. 45/ In addition, site plans and detailed development plans must show sewerage and drainage systems. 46/ Under the health legislation, it is mandatory for the owners of dwelling houses in the city of St. John's to install proper privy accommodations and proper drains, under penalty of a fine and direct execution by the public health authorities, and subject to the standards to be prescribed by them as to the coverings, fittings and connections for the above-mentioned facilities. 47/ Detailed health regulations also govern the drainage from dairies, 48/ and the installation and mode of operation of specific sewage disposal systems. 49/

The public works regulations empower the public works authorities to provide for the proper drainage of roads and highways, 50/ and mandate that the trenches at the side of the roads be kept free and clean. 51/ Finally, within the framework of the process of adjudicating the rights and interests in land, the public authority in charge of defining the boundaries between adjoining properties is empowered to propose adjustments in the interest of the better drainage of lands. 52/

C. Floods and other harmful effects

Fragmentary provisions exist with regard to the prevention and control of flooding events. From a planning standpoint, the land use regulations in force make it mandatory for plots, where it is intended to erect buildings, to be in a condition so as to prevent the harmful effects of flood water. 53/

Upon the occurrence of a flood event, a state of emergency can be proclaimed, requisitioning and regulating a number of essential services, including the provision of water supplies. 54/

VI. WASTE, POLLUTION AND MOSQUITO CONTROL

A. Waste and misuse of water

The wastage of water drawn from ponds, springs and streams at large, and from reservoirs and tanks, for the provision of public water supplies is punished with a fine or imprisonment. 55/ The same penalty applies with respect to the waste of water supplied to individual premises; 56/ in this case, the service can be discontinued altogether. 57/ A fine applies with respect to the waste of water supplied to public standpipes. 58/

Furthermore, the prevention of waste and the misuse of public water supplies are to be governed by ad hoc regulations to be issued by the Public Utilities Authority 59/ and, in Barbuda, by the Barbuda Council. 60/

B. Pollution control and health preservation

The Public Utilities Authority and, in Barbuda, the Barbuda Council are empowered to issue ad hoc regulations for the prevention and control of the pollution of water at large and of water supplied for domestic and business purposes, respectively. 61/ In the interim, the prevention of water pollution is sought by means of prohibiting a number of potentially harmful activities in, or in proximity to, watercourses or other bodies of water or facilities for the storage and distribution of public supplies of water - including public standpipes. These prohibitions are enforced by means of fines or imprisonment, 62/ and in one specific case the service can be discontinued altogether. 63/

The public health laws in force also separately prohibit the pollution of watercourses and drains. 64/ Under the same laws, the pollution of watercourses and ponds, as well as cisterns, pools, watercourses and drains, found to be a health hazard constitute a nuisance and are subject to abatement and appropriate enforcement provisions - including the direct execution of public health orders by the issuing authorities. 65/ They are further empowered to provide for the filling up of cesspits and wells representing a health hazard. 66/

Additional provisions directly or indirectly aimed at preventing water pollution can also be found in a few other statutes of general 67/ or sectoral 68/ import.

C. Mosquito control

The Central Board of Health is empowered to issue ad hoc regulations for the control of mosquitoes, including - among others - the protection of water storage facilities, the prevention of formation of stagnant water and the proper drainage from gutters. 69/

VII. LEGISLATION ON GROUND-WATER RESOURCES

The legislation currently in force does not contain specific provisions concerning prospecting for, and abstraction and use of, ground-water resources.

Under the health legislation in force, wells which constitute a health hazard are subject to the abatement and enforcement provisions contemplated for nuisances at large - including the power of the public health authority to provide for the filling up of wells. 70/

VIII. CONTROL AND PROTECTION OF WATERWORKS AND STRUCTURES

The construction and maintenance of public works at large, and of public water supply systems, are the responsibilities of the Government. 71/ The maintenance of waterworks which belong to the Barbuda Council is the latter's responsibility. 72/

All waterworks which are instrumental to the provision of public water supplies are public property, 73/ and their protection is subject to ad hoc regulations to be issued by the Public Utilities Authority. 74/ In the interim, tampering with appliances employed in connection with the above-mentioned waterworks is forbidden, subject to a fine, imprisonment and temporary or permanent discontinuance of the service. 75/ In addition, damaging or destroying the dam, wall, bank or sluice of any pond, reservoir or watercourse is punished with imprisonment. 76/

IX. PROTECTED AREAS

Under current legislation, the Public Utilities Authority is empowered - subject to the approval of the Minister of Public Works, Communications and Public Utilities - to declare the entire or part of the area draining into any pond, spring, stream, reservoir or well to be a watershed area. 77/ As a consequence, such areas are placed under government control and are subject to ad hoc regulations to be issued by the responsible authorities. 78/ In particular, such regulations may restrict the growing of trees and the cultivation of, and grazing on, land within a specified distance of the above-mentioned bodies of water. 79/

X. GOVERNMENT WATER RESOURCES ADMINISTRATION

The following Ministries and other central government institutions concur in the management, development and conservation of water resources:

(a) The Minister of Public Works, Communications and Public Utilities retains policy-making responsibilities for water resource management, development and conservation - including the provision of public water supply and sewerage services; 80/

(b) The Ministry of Health has responsibility for the public health aspects of water-related activities at large. A Central Board of Health functions in an advisory and co-ordinating capacity; 81/

(c) The Public Utilities Authority, through its Water Division, has primary responsibility for the management, development and conservation of surface water resources and wells, and for the provision of public water supply and sewerage services. In addition, the Authority is responsible for the provision of electricity and telephone services. The Authority is a body corporate, consisting of nine members (Commissioners) appointed by the Governor, with a General Manager as its chief executive and with its own staff and personnel. It enjoys financial

autonomy - subject to accounting, auditing and reporting requirements and procedures. The Authority acts within the framework of the policies set by the Minister of Public Works, Communications and Public Utilities; 82/

(d) The Development Control Authority is responsible for land use planning and control within the framework of an overall development plan, which is also the responsibility of the Authority, to draft and update. 83/ The Authority is made up of representatives of the government departments in charge of public works, health and lands, and other members appointed by the Minister responsible for land use planning; 84/

(e) The Central Planning and Housing Authority retains primary responsibility for the implementation of government land development schemes - including schemes for the provision of water supplies and for forest conservation. 85/

Within the island of Barbuda, the Barbuda Council has been given full responsibility for, among others, agriculture, forestry and public health matters, and for the provision of water services. In addition, the Council has been made responsible, among others - and subject to the policy guidelines set by the central government - for fisheries and the maintenance of waterworks belonging to the Council. Finally, the Council has been given regulatory powers with respect to, among others, the supply and distribution of water, including the setting of relevant rates, and the prevention of waste and pollution of said water; the provision of tanks and cisterns for the collection and storage of rainwater; sewerage disposal and abatement of nuisances; public washhouses, bathhouses and other sanitary matters; and fishing. 86/ Limited to the enactment of subsidiary legislation in the above water-related fields, the devolution of rule-making responsibilities to the Barbuda Council overrides the otherwise automatic extension of the laws of Antigua to Barbuda. 87/

XI. AUTONOMOUS AND SEMI-AUTONOMOUS WATER DEVELOPMENT AGENCIES

Within the framework of its responsibility for the development of agriculture, the Antigua Agricultural Development Corporation is empowered to implement - or participate in - among others, soil or water conservation schemes, and schemes for the development of fisheries and forestry. 88/ The Corporation consists of representatives of the government department in charge of agriculture, of the Central Marketing Corporation and of other members appointed by the Minister responsible for agriculture. The Corporation is a body corporate with power to acquire and dispose of property, to sue and be sued, and with its own staff. It enjoys financial and administrative autonomy, within the policy guidelines set by the responsible Minister, and is subject to accounting, auditing and reporting procedures and requirements. 89/

The Antigua Development Agency provides financial assistance to development-oriented enterprises, both agricultural and industrial (including, among the latter, drilling enterprises). 90/ The Agency is a body corporate, managed by a Board of Directors appointed by the Minister responsible for trade, with its own staff and a general manager as its chief executive. The Agency enjoys financial and administrative autonomy, subject to accounting, auditing and reporting requirements and procedures. 91/

XII. FINANCIAL ASPECTS

A. Government financial policies concerning water resources development

Government financial assistance - in the form of loans and otherwise - can be provided to development-oriented enterprises - both agricultural and industrial - by the Antigua Development Agency. 92/ Although no express reference is made to water development or conservation, projects can enjoy the financial assistance of the Agency. In similar vein, the Development Fund instituted for development purposes at large 93/ can be applied to assist water-oriented projects or programmes.

Finally, it is government policy that the full cost of connecting to a public water supply service - including the cost of materials, labour and other expenses - shall be recovered from the beneficiaries of the service. 94/

B. Water rates and charges

A different monthly rate structure applies according to whether consumption is metered or not, and to the purpose for which water is supplied. Metered domestic supplies are charged a progressively higher rate as consumption increases and falls into higher brackets. 95/ Metered non-domestic consumption is charged a monthly flat rate of \$EC 15 per 1,000 gallons of water - or part thereof. 96/ Non-metered domestic and non-domestic consumptions are charged different flat monthly rates based on the rental value of the premises supplied. 97/

Under the current laws, all water consumptions should - in principle - be metered. Meters are installed and maintained by the public authorities, subject to a rental fee which varies according to the size of the meter installed. 98/

The imposition of rates in respect of water supplied within the island of Barbuda can be separately regulated by the Barbuda Council. 99/

XIII. ENFORCEMENT AND IMPLEMENTATION

The enforcement and implementation aspects of water resources legislation include the protection of rights and interests of water users through a judicial review of administrative determinations or otherwise; the direct execution of orders issued by the public authorities and attendant powers and enforcement procedures; and the imposition of penalties.

The latter, in particular, have been reviewed in connection with various aspects of water resources legislation analysed in previous sections. It is worth recalling at this juncture, however, the special penalty for discontinuance of public water supply services to customers who do not pay their water bills, and the temporary or permanent discontinuance of service to consumers who pollute or waste water; or who - without authorization - connect their premises to a public water supply system, or alter the existing connection; or tamper with public water supply appliances; or sell the water supplied; or neglect to give the responsible authorities notice of the need of repair of public water supply appliances. 100/

Judicial protection of the rights and interests of water users affected by determinations made by the Public Utilities Authority follows the ordinary channels and procedures of judicial review of administrative determinations at large. Administrative redress from determinations of the planning authorities, 101/ and judicial redress from the determinations of the public health authorities, 102/ is expressly provided for.

Private property at large is protected by the State Constitution, which allows the compulsory taking of it for public purposes subject to fair compensation. It should be noted, however, that the constitutional guarantee does not operate when property is taken in connection with, among others, the execution of soil conservation works, and of the works for the conservation of other natural resources. 103/

Administrative orders and notices issued for purposes of enforcing public health or land use controls can be directly executed by the issuing authorities. 104/ In discharging their control and enforcement duties, public authorities enjoy - subject to the limitations spelled out in the relevant statutes - the power of entering and inspecting private premises. 105/

Notes

- 1/ Barbuda (Extension of the Laws of Antigua) Act (1859), sect. 2.
- 2/ Watercourse and Waterworks Ordinance, sect. 4 (1).
- 3/ Public Utilities Act, sect. 8 (2) (n).
- 4/ Watercourses and Waterworks Ordinance, sect. 3. Of the acts which vested in the Crown - or placed under public control - specific water resources, the author could identify (a) the Body Ponds Act, No. 15 of 1721 (in the Revised (1921) Edition of the Laws of Antigua, p. 1), as subsequently amended and extended to include the drainage area of said Ponds by the Waterworks Amendment Ordinance, No. 9 of 1926; (b) the Watercourses and Reservoirs Act, No. 3 of 1895 (ibid., p. 224), in regard to a number of streams listed in the Second Schedule to the Act, and (c) the Country Water Supply Act, No. 12 of 1895 (ibid., p. 259), in regard to the Wallings Reservoir (sect. 9).
- 5/ Public Utilities Act, sect. 4 (1).
- 6/ Act No. 7 of 1888 (in the Revised (1921) Edition of the Laws of Antigua, p. 186), sect. 5.
- 7/ Ordinance No. 10 of 1923, sect. 4.
- 8/ Watercourses and Waterworks Ordinance, sect. 3.
- 9/ Public Utilities Act, sect. 38 (a) and (b); compare with sects. 9 and 10 of the Watercourses and Waterworks Ordinance.
- 10/ Crown Lands (Land Settlement) Regulations, sect. 3 (1); and Crown Lands (Sale) Regulations, sect. 4 (a).
- 11/ Public Utilities Act, sects. 8 (2) (n) and 32 (1) (j).

Notes (continued)

12/ Ibid., sect. 38 (b). See, however, the considerations made in sect. II above.

13/ C. J. Meyers and A. D. Tarlock, Water Resources Management, 2nd ed. (1980), p. 660.

14/ Registered Land Act, sect. 28 (a)-(c).

15/ Fisheries (Restrictions on Methods of Fresh-Water Fishing) Regulations, sect. 2.

16/ Barbuda (Shooting and Fishing) By-Law, sect. 4.

17/ Public Utilities Act, sects. 7 (1), 8 (2) (1), (c) and 40 (1) (1).

18/ Barbuda Local Government Act, sects. 18 (2) (c) and 19 (2) (a).

19/ Public Utilities Act, sect. 32 (1) (i); and Public Utilities (Supply and Discontinuance) Regulations, sect. 11 (1).

20/ Watercourses and Waterworks Regulations, sects. 3, 4, 6, 7 and 9.

21/ Public Utilities Act, sect. 33, and Public Utilities (Supply and Discontinuance) Regulations, sect. 11 (1).

22/ Public Utilities (Supply and Discontinuance) Regulations, sects. 2, 3, 5 and 7; Watercourses and Waterworks Regulations, sect. 8 (7)-(8); see also sect. XII.B below.

23/ Public Utilities Act, sect. 15. See also sect. XII.B below.

24/ Public Utilities (Supply and Discontinuance) Regulations, sect. 4.

25/ Ibid., sects. 9 and 11 (1).

26/ Public Utilities Act, sect. 8 (1) (p).

27/ Land Development (Interim Control) Regulations, Second Schedule, part 3 (2) (vii) and part 5 (2) (vii).

28/ Ibid., sect. 19, and Third Schedule, part H, sects. 1-2.

29/ Land Development and Control Act, sect. 23 (b).

30/ Land Development and Control Act, sect. 8 (5).

31/ Barbuda Local Government Act, sect. 19 (1) (xv).

32/ Slum Clearance and Housing Ordinance, sects. 2 (definition of "sanitary defects"), 14 (1) and 20 and ff.

33/ Town and Country Planning Ordinance, sects. 17 (2) and 20; and Schedule, part V.

Notes (continued)

- 34/ Public Health Ordinance, sect. 20 (m); see also sect. XIII below.
- 35/ Public Health Ordinance, sect. 38; and Barbuda Local Government Act, sect. 19 (1) (ix).
- 36/ Public Health Ordinance, sect. 16 (1) (c).
- 37/ Ibid., sect. 81 (1) (b).
- 38/ Ibid., sect. 87 (e); and Milk Regulations, sect. 19.
- 39/ Public Health Ordinance, sect. 87 (m); and Ice and Aerated Water Factories Regulations, sects. 13 and 17.
- 40/ Public Utilities Act, sects. 8 (2) (n), 38 (c), 39 (1) (j) and 40 (1) (n). See also sect. IX below.
- 41/ Watercourses and Waterworks Regulations, sect. 16 (b).
- 42/ Forestry Ordinance, sects. 5-7 (on prevention of deforestation by declaration of forest reserve areas); sects. 8-12 (on reforestation schemes); Town and Country Planning Ordinance, sects. 17 (2) and 20; and Schedule, part IV, 1 and 4 (on the inclusion on town planning and in regional development schemes of provisions for the preservation of forest areas).
- 43/ Public Utilities Act, sect. 8 (2) (m).
- 44/ Barbuda Local Government Act, sects. 18 (2) (c), (4), (3) and 19 (1) (iii).
- 45/ Land Development (Interim Control) Regulations, Third Schedule, part H (3). For the relevant enforcement provisions, see sect. IV above and sect. XIII below.
- 46/ Land Development (Interim Control) Regulations, Second Schedule, parts 3 (2) (vii) and 5 (2) (vii).
- 47/ Public Health Ordinance, sects. 32, 33 and 34.
- 48/ Milk Regulations, sect. 16.
- 49/ Privy Regulations, sects. 3 (privy buildings), 4 (pits) and 5 (pail closets).
- 50/ Public Works Ordinance, sects. 11 and 17.
- 51/ Public Works Regulations, sect. 3 (1).
- 52/ Land Adjudication Act, sect. 12 (1) (c).
- 53/ Land Development (Interim Control) Regulations, sect. 24.
- 54/ Emergency Powers (Hurricane, Earthquake, Fire or Flood) Ordinance, sects. 2 (1) and 3 (2) (b).

Notes (continued)

- 55/ Public Utilities Act, sect. 32 (1) (h) and (j).
- 56/ Ibid., sect. 34.
- 57/ Public Utilities (Supply and Discontinuance) Regulations, sect. 11 (2).
- 58/ Watercourses and Waterworks Regulations, sect. 15 (a)-(b).
- 59/ Public Utilities Act, sect. 40 (1) (e).
- 60/ Barbuda Local Government Act, sect. 19 (2) (b).
- 61/ Public Utilities Act, sect. 40 (1) (m) and Barbuda Local Government Act, sect. 19 (2) (b).
- 62/ Public Utilities Act, sect. 32 (1) (a)-(g); and Watercourses and Waterworks Regulations, sect. 15 (c).
- 63/ Public Utilities (Supply and Discontinuance) Regulations, sect. 11 (1) with reference to sect. 32 (1) (f) of the Public Utilities Act: letting foul or filthy water flow into ponds, springs, streams or reservoirs and storage facilities for the provision of public water supplies.
- 64/ Public Health Ordinance, sect. 17 (1).
- 65/ Ibid., sect. 20 (b) and (k); see also sect. XIII below.
- 66/ Public Health Ordinance, sect. 35.
- 67/ Malicious Damage Act, sect. 26.
- 68/ Pesticides Control Act, in so far as it subjects to controls the use of insecticides on cultivated lands (sect. 3 (1) (c), and (2) (c)).
- 69/ Public Health Ordinance, sect. 127 (a), (b) and (e).
- 70/ Public Health Ordinance, sects. 20 (m) and 35; see also sect. VI.B above and sect. XIII below.
- 71/ Public Works and Road Act, sect. 5; and Public Utilities Act, sect. 8 (2) (o).
- 72/ Barbuda Local Government Act, sect. 18 (4) (e).
- 73/ Public Utilities Act, sect. 4 (1), with reference to Watercourses and Waterworks Ordinance, sect. 3.
- 74/ Public Utilities Act, sect. 40 (1) (m).
- 75/ Ibid., sect. 32 (1) (k); Public Utilities (Supply and Discontinuance) Regulations, sect. 11 (1); also Public Health Ordinance, sect. 29.
- 76/ Malicious Damage Act, sects. 25-26.

Notes (continued)

77/ Public Utilities Act, sect. 38 (c).

78/ Ibid., sects. 39 (1) (j) and 40 (1) (n). It should be noted that the issuing of watershed-control regulations is the concurrent responsibility of the Minister of Public Works, Communications and Public Utilities, and of the Public Utilities Authority.

79/ Public Utilities Act, sect. 39 (2).

80/ Public Utilities Act, sects. 37 (1) and 39 (1) (j) and (2).

81/ Public Health Ordinance, sects. 4 and 11 (a)-(b).

82/ Public Utilities Act, sects. 3 (1), 5, 6, 7 (1), 8 (1) (m)-(n), 12, 17 and 37 (1), First Schedule, sect. 1, Second Schedule, sect. 1 (1).

83/ Land Development and Control Act, sects. 6 (1), (2) and (10), 8 (1) and 11 (1).

84/ Ibid., sect. 3 (1).

85/ Town and Country Planning Ordinance, sects. 17 (2) and 20 and Schedule, part IV, 1, 4 and V.

86/ Barbuda Local Government Act, sects. 18 (2) (a)-(c), (4) (c) and (e), 19 (1) (iii), (ix), (xv) and (xxxii), (2) (a), (b) and (d).

87/ The extension of the laws of Antigua to the island of Barbuda was sanctioned by the Barbuda (Extension of Laws of Antigua) Act of 1859.

88/ Antigua Agricultural Development Corporation Act, sect. 10, with particular reference to sect. 2 (definition of "agriculture").

89/ Ibid., sects. 3 (2), 4, 7, 13, 14, 17 and 18.

90/ Antigua Development Agency Act, sect. 4 (1) (see also sect. 2, definition of "industrial enterprise" (b)).

91/ Ibid., sects. 3 (1), 7, 9, 10 (1), 13 and 14, and Schedule, sect. 1.

92/ Antigua Development Agency Act, sect. 4 (1) (a). See also sect. XI above.

93/ Development Fund Act, sect. 3.

94/ Watercourses and Waterworks Regulations, sect. 5 (1).

95/ Public utilities (Water Tariffs) Order, Schedule, sect. 1 (a). Current monthly rates are: \$EC 7 per 1,000 gallons, for the first 4,000 gallons of water supplied; \$EC 10 per 1,000 gallons for the next 6,000 gallons; \$EC 15 per 1,000 gallons for consumption in excess of 10,000 gallons per month.

96/ Public Utilities (Water Tariffs) Order, Schedule, sect. 2 (a).

Notes (continued)

97/ Ibid., sects. 1 (b) and 2 (b). Current rates are: 5 per cent and 7 1/2 per cent of the annual rental value of the premises supplied, or \$EC 7 and \$EC 15 per month - whichever is higher, for domestic and non-domestic supplies, respectively.

98/ Public Utilities (Supply and Discontinuance) Regulations, sects. 2 (1), 3 and 5; and Watercourses and Waterworks Regulations, sect. 8 (7)-(8).

99/ Barbuda Local Government Act, sect. 19 (2) (d).

100/ Public Utilities (Supply and Discontinuance) Regulations, sects. 9 and 11; and Watercourses and Waterworks Regulations, sect. 14 (2) (c).

101/ Public Development and Control Act, sect. 13. Judicial review is instead provided for by the Town and Country Planning Ordinance, sect. 20 (4).

102/ Public Health Ordinance, sect. 24.

103/ Antigua Constitution Order, sect. 6 (1) and (2) (k) (i).

104/ Public Health Ordinance, sects. 23 (10) and 35 (3); and Land Development and Control Act, sect. 8 (11).

105/ Public Utilities Act, sect. 10; Public Utilities (Supply and Discontinuance) Regulations, sect. 5 (inspection of water meters); and Public Health Ordinance, sect. 27 (nuisance control and abatement).

CAYMAN ISLANDS

INTRODUCTION

The Cayman Islands are located in the western part of the Caribbean and consist of three islands: Grand Cayman, Cayman Brac and Little Cayman. The total land area is approximately 100 square miles, of which Grand Cayman represents 76 square miles and is separated from Little Cayman and Cayman Brac by some 90 miles. Little Cayman and Cayman Brac have areas of 14 square miles and 10 square miles, respectively.

The islands are low lying and are comprised chiefly of limestone surrounded and in part overlain by coral, sand and marl with ironshore formations typical of this type of island. The maximum height above sea level is 60 feet on Grand Cayman and 140 feet on Cayman Brac.

In 1983, the resident population numbered 18,750. Apart from offshore banking, insurance and tourism, the construction (and associated quarrying) industry is the only other significant economic activity. Agriculture is, and is projected to remain, a very minor activity.

The hydrology and hydrogeology of the islands have been studied extensively in recent years, with particular attention to Grand Cayman. As a result of those studies, the average rainfall on Grand Cayman was found to be 55 inches per annum. Because of the topography and the porosity of the limestone, there are no surface watercourses. Five reservoirs of fresh ground water (lenses) have been located and surveyed, of which three have been seriously depleted through overpumping and attendant salt water intrusion. The safe water yields of the two remaining reservoirs are estimated to be adequate to satisfy the projected demand for domestic water supply.

At present there is no public water supply and sewerage system. The water supply comes from four main sources: roof-caught rainwater stored in cisterns; shallow-dug wells often pumping brackish water is used for non-potable purposes; desalination, privately produced, with a current capacity of about 200,000 gallons per day and serving a localized residential development scheme; and drilled wells, with increasing amounts of ground water being withdrawn from the existing lenses by private trucking companies for distribution to consumption centres. In November 1983, the newly established Water Authority undertook controlled exploitation of the Lower Valley Wellfield, and a reservoir facility administered by the Authority has been in operation there ever since.

Prior to 1959, the islands were administered by the United Kingdom of Great Britain and Northern Ireland through Jamaica, with a local Commissioner and a Legislative Assembly. Upon obtaining independence from the United Kingdom in 1962, Jamaica ceased to have any control over the Cayman Islands. The Constitution of the islands, which have the status of a Crown Colony, provides for a Governor, a Legislative Assembly and an Executive Council. The Legislative Assembly consists of the Governor, three official members and 12 elected members. The Governor presides over the Executive Council, consisting of three official members appointed by the Governor, and four elected members, chosen by the elected members of the Legislative Assembly from among their own number. Members of the Legislative Assembly are elected for a period of four years.

The use and development of water resources are mostly governed by statutory legislation enacted in December 1982. Such legislation has had the effect of superseding common law rules of water ownership and use applicable until then.

I. LEGISLATION IN FORCE

The statutes which are directly or indirectly related to fresh water resources issues in the Cayman Islands are the following:

1. Agricultural and Industrial Aid Law, No. 24 of 1978;
2. Agricultural and Industrial Aid (Loans) By-Laws, 1979;
3. Development and Planning Law (Revised), No. 28 of 1971, as amended;
4. Development and Planning Regulations, 1977, as amended;
5. Emergency Powers Law (Revised), Cap. 47 of the Laws of the Cayman Islands, Revised Edition (1963);
6. Fire Brigade Law, No. 21 of 1979, as amended;
7. The Governor (Vesting of Lands) Law (Revised), Cap. 1 of the Laws of the Cayman Islands;
8. The Land Acquisition Law, Cap. 81 of the Laws of the Cayman Islands;
9. The Land Adjudication Law, No. 20 of 1971, as amended;
10. Mining Law, Cap. 103 of the Laws of the Cayman Islands;
11. Mosquito (Research and Control) Law (Revised), No. 16 of 1966, as amended;
12. Mosquito (Research and Control) Regulations (Revised), as amended;
13. Penal Code, Law No. 12 of 1975, as amended;
14. Prescription Law, Cap. 131 of the Laws of the Cayman Islands;
15. Public Health Law, No. 6 of 1981;
16. Public Health (Edible Ice) Regulations, 1978;
17. Registered Land Law, No. 21 of 1971, as amended;
18. Roads Law, No. 18 of 1974;
19. Trade and Business Licensing Law (Revised);
20. Water (Production and Supply) Law, No. 15 of 1979;
21. Water Authority Law, No. 18 of 1982;

22. A Bill (recently signed into law) for a law to provide for the establishment of a Housing Development Corporation (Supplement No. 2 to Gazette No. 10 of 1981).

II. OWNERSHIP OF WATER

All water resources underground in the Cayman Islands have been vested in the Crown by the Water Authority Law 1/ and thus given public property status.

Atmospheric water can be appropriated by collection in cisterns or tanks and can be regarded as the property of the owner of the relevant premises. The use of such water, however, is subject to control by the public health authorities from a public health standpoint.

III. RIGHT TO USE WATER

Under the operation of the Water Authority Law, the common law system of water rights accruing from the ownership of land lying above a source of water underground has been, by and large, superseded by a system of government-administered water use licences. A licence from the Water Authority is the only valid title to the abstraction and use of water and the performance of all relevant works. No longer may a water right accrue from the mere fact of using or having used water located under one's land. 2/ As a result, one need not own or possess land in order to qualify for the grant of a licence to the water lying under it. Nevertheless, one would be expected to have secured or to be able to secure from the owner of the land concerned a right of access to the water source.

The abstraction and use of water for domestic purposes are exempted from the licensing requirements of the law. 3/ As a consequence, the right to the domestic use of water accrues - as in the past - from ownership or possession of land lying above a source of water underground, or from a right of access to the source. What has been changed by the law in this particular case is only the legal status of the source - no longer is the water the landowner's property, but is now the property of the Crown.

As a further exception to the licensing requirements instituted by the Water Authority Law, the Water Authority is entitled directly by the law to undertake works and abstract water for its own statutory purposes. 4/

In the licensing process, applications must be given adequate publicity, and an opportunity must be given to any one wishing to object to the grant of a licence to do so. 5/ In deciding on an application for the grant of a licence, the Water Authority is to take into account the water policies and the provisions of the water resources development plan in effect at the time. 6/ With a view to effecting a smooth transition to the new licensing system inaugurated by the Water Authority Law, the uses and users of water which qualify as existing at the time of enactment of the law are afforded special protection. The users are entitled by the law to obtain a licence from the Water Authority as a matter of right, provided an application is made within a fixed grace period. Water abstractions qualify as "existing" if the use of the water has been made at any time in the year prior to the enactment of the Water Authority Law. 7/ Licences granted to "existing" abstractions are known as licences of right.

Ordinarily, abstraction licences and licences of right alike spell out, among other data, the quantity of water to be abstracted, the use to be made of the water and the duration of the licence. 8/ A record of all licences granted is kept by the Water Authority in a Register of Water Abstraction Licences. 9/

All water abstraction licences can be varied or terminated by the Water Authority on various grounds. The allocation of water under a licence can be diminished when the water becomes insufficient to satisfy all the licensed water requirements of the area. 10/ All licences can be suspended whenever the source of water concerned is threatened with depletion or quality degradation. 11/ A breach of the law or of the terms and conditions of a licence, non-use for a period of 12 months and a "public purpose" are the grounds on which any licence can be terminated by the Water Authority. 12/ In the last case, payment of compensation is provided for. 13/

All the decisions made by the Water Authority in the administration of the licensing provisions of the law are subject to judicial review. 14/

The licensing requirements of the law are sanctioned by a fine of up to \$CI 6,000 and/or imprisonment for up to one year, 15/ and can be enforced by the Water Authority by issuing cease-and-desist type orders. If the recipient of such an order fails to comply with it, the Authority may itself carry the order into effect at the defaulter's expense. 16/

IV. ORDER OF PRIORITIES

No order of priority uses of water is fixed by the law. Indirectly, however, the use of water for the provision of a piped supply of water to the public is given priority over all other uses inasmuch as the Water Authority is empowered to terminate abstraction licences or to diminish the water allocation under them if the water is needed for public water supply purposes, subject to compensation. 17/

V. BENEFICIAL USES OF WATER

The beneficial uses of water are not diversified in the Cayman Islands and can be grouped conveniently under the general category of "water supply". Relevant legislation will be reviewed from the standpoint of (a) the regulation of the public water supply service, (b) the sources of supply, (c) building and planning regulations, (d) public health aspects, and (e) fire fighting.

A. Regulation of the public water supply service

Under the Water Authority Law, the sole responsibility for the provision of a piped supply of water to the public rests with the Water Authority. 18/ The Authority has all the powers needed to fulfil its mandate, including, in particular, the authority to abstract all the water it needs, to terminate existing licences or to diminish the water allocation under them, and to meter all connections to the public supply system. 19/ Connections to the public water supply system can be effected only with the consent of the Water Authority, 20/ by the Authority or by duly licensed plumbers. 21/ Unauthorized connections are subject to a fine of up to \$CI 1,000 and/or imprisonment for up to 12 months and to be disconnected. 22/

Water rates, charges and fees are levied by the Water Authority in respect of the services provided. 23/ Connections to the public water supply system can be disconnected on account of excessive use of water, or failure to pay the applicable rates and charges. 24/ The Water Authority is responsible for ensuring the wholesomeness of the water supplied through its mains. 25/

B. Sources of supply

As already mentioned in the introduction, piped water supply is not currently available in the Cayman Islands. For the time being, and until the time such service becomes available, the domestic, household and municipal needs of the population are satisfied from three main sources of supply: (a) water trucked in from well-fields; (b) roof-caught rainwater stored in cisterns and tanks; and (c) a desalination plant, owned and operated by a private concern under a concessional régime and serving a limited tourist development.

1. Trucking of water

The abstraction of water from the ground-water lenses by private trucking concerns for distribution and sale to consumers is nowadays strictly controlled under the licensing régime instituted by the Water Authority Law. Like all other individuals or concerns abstracting water from the ground-water lenses, trucking companies are now required to be licensed by the Water Authority in order to draw water for delivery and sale. The unauthorized sale of water abstracted under a licence carries a fine of up to \$CI 3,000 and/or imprisonment for up to six months, in addition to the revocation of the licence. 26/ As an alternative to developing well-fields on their own under a water abstraction licence from the Water Authority, trucking companies are always free to enter into contractual arrangements with the Authority for delivery of well water developed directly by the Authority. In this case, the trucking companies would not be subject to licensing requirements with respect to the abstraction of water.

2. Rainwater catchment

The catchment and storage of rainwater in cisterns or tanks is free, and there are no guidelines for optimal cistern or tank design, size and location. Rainwater catchment and storage is subject, however, to the control of the public authorities from a public health standpoint.

3. Desalination

Desalination, purification and distillation processes can be carried out, and the water (including non-potable water) so obtained can be supplied by means of a piping system under a concession to be granted by the Governor, 27/ on the advice of the Water Authority. 28/ Restrictions apply to the persons or concerns which may apply for and obtain a concession. 29/ The terms and conditions which can be attached to such concessions, the procedural requirements applicable to the granting of concessions and the health and safety standards applicable to the production and supply of water are set forth in separate regulations to be issued by the Governor. 30/ Concessionaires are given considerable powers, including the power to decrease the level of services provided as unforeseen circumstances dictate, the power to cut off and discontinue the service to customers who do not

pay their water bills, and the power to seek in court the abatement of any interference with the service by private installations. 31/ Suppliers of piped desalinated water can charge their customers for the water service provided, within the criteria set forth in the concession. 32/ The concessional régime is made indirectly inapplicable in a number of specific cases which do not justify a protectionist régime for the protection of the considerable investments necessary for the construction and operation of desalination plants, and related works. 33/ Most notable among them is the supply of water other than piped water 34/ (see following section).

From the viewpoint of enforcement desalination, distillation, purification and piping of water without a concession is subject to a fine (up to \$CI 5,000), imprisonment (up to one year) or both. 35/ Aside from the special concessional régime, the desalination and distribution of water to the public is subject to a separate business licence, to be issued by the Caymanian Protection Board. 36/

C. Building and planning regulations

Under the development and planning laws currently in force in Grand Cayman, buildings intended for human habitation must comply with specific requirements regarding the provision of water. In particular, such buildings must be provided with no less than 50 gallons per person each day of potable water and water for domestic purposes. Water supply (and related sanitary drainage systems) must be shown on the site plans and on the floor plans of buildings, and developers must provide space and design for a complete water reticulation system. Water supply plans connected with the construction, reconstruction or extension of buildings must be cleared with the Water Authority in all cases in which planning permission from the Central Planning Authority is required. In these cases, the latter Authority is bound by the decision made by the Water Authority in so far as water supply plans are concerned. 37/

Land needed for water supply services can be set aside for acquisition by the Central Planning Authority or for restrictions to be placed upon its use in the development plan for the Cayman Islands. 38/

D. Public health aspects

Standards of wholesomeness of the water supplied to the public for domestic and household needs are to be laid down by the Governor. 39/ The above standards are to be met by the water supplied by the Water Authority from its facilities. 40/

The health authorities - the Chief Medical Officer and the Chief Environmental Health Officer - retain control over sources of water supply from a public health standpoint inasmuch as they have authority to restrict or stop the use of water from sources of supply polluted or dangerous to one's health. Relevant orders are issued by the courts, with the assistance of the health authorities, and they can be carried out directly by said authorities if the recipient of the order fails to comply. 41/

Specific provisions exist for the control of the site and of the sanitary conditions of swimming pools. These provisions are enforceable by the public health authority (Senior Medical Officer) by ordering the closure of swimming pools which are found unsanitary. Continued use of pools ordered to be closed is punished with a fine. 42/

Detailed special provisions apply to the manufacture and sale of edible ice, which is subject to a licence to be issued by the public health authority. 43/ Enforcement provisions include a fine or imprisonment. 44/

E. Fire-fighting

Under the legislation in force, the occupiers of premises are under a duty to provide fire hydrants and water supply points for fire-fighting purposes - if expressly requested to do so by the fire authority (Chief Fire Officer) - under penalty of a fine, imprisonment or both. 45/ The provision of fire hydrants is further subject to be regulated by the Governor. 46/

In addition, in the course of fire-fighting operations, fire officers are empowered, among others, to use any available water supply or water storage. 47/

VI. HARMFUL EFFECTS OF WATER

A. Flooding

Fragmentary provisions exist with regard to the prevention and control of flooding events. From a planning standpoint, the liability of a land to flooding can be cause for the rejection of a development scheme involving such land. 48/ In addition, land reclaimed for development must comply with specific soil levels to prevent flooding, under penalty of a fine, imprisonment or both. 49/

Upon the occurrence of a flood, a state of emergency can be proclaimed by the Governor, the principal effect of which is to empower him to issue emergency regulations for, among others, securing and regulating the supply of water. 50/

B. Drainage and sewerage

Under the Water Authority Law, the provision of sewerage services to the public is the sole responsibility of the Water Authority. 51/ The Authority has all the powers needed to carry out its mandate. 52/ In addition, it has the authority to compel new or reconstructed buildings to be connected to the public sewerage systems, if available, under penalty of a fine of up to \$CI 500 and/or imprisonment for up to six months. In default of compliance, the Water Authority may effect the connection and recover the relevant costs from the owner of the building at fault. 53/ The same provisions are applicable with respect to existing buildings, if the sewage from them is disposed of on or under the ground or into sources of water underground. 54/

All connections to the Authority-run public sewerage system are to be effected by the Water Authority directly or by plumbers duly licensed by the Authority. 55/ Connections of private drains and sewers, including storm water drains, to the public sewerage system, and the discharge into it of water runoff and of industrial or commercial effluents, are all subject to the prior consent of the Water Authority. 56/ Certain dangerous substances, however, are forbidden in any case to be disposed of in the public sewerage system under penalty of a fine of up to \$CI 10,500 and a daily fine of up to \$CI 500 so long as the offence continues. 57/

Sewerage rates, charges and fees are levied by the Water Authority with respect to services provided. 58/

From a public health standpoint, the health authorities - Chief Environmental Health Officer - retain control over the disposal of domestic sewage inasmuch as they have the authority to restrict or stop systems of domestic sewage disposal found dangerous to the health of the public. 59/

Under the development and planning laws currently in force in Grand Cayman Island, land development schemes and buildings for human habitation must comply with precise requirements regarding sewage disposal (septic tanks must be provided) and relevant location (so as to permit the house drainage to be eventually connected to a main sewer). Furthermore, the design of septic tanks must be approved by the public health authority (Chief Medical Officer). 60/ Sewage disposal plans connected with the construction, reconstruction or extension of buildings must be cleared with the Water Authority in all cases in which planning permission from the Central Planning Authority is required. In these cases, the latter Authority is bound by the decision made by the Water Authority in so far as sewage disposal plans are concerned. 61/

Land needed for public sewerage services can be set aside for acquisition by the Central Planning Authority or, in the alternative, for restrictions to be placed upon its use by the development plan for the Cayman Islands. 62/

The emptying of septic tanks or cesspools is subject to a permit from the Water Authority in so far as the disposal of the sewage is concerned. This provision is sanctioned with a fine up to \$CI 10,000 and/or imprisonment for up to 12 months. 63/

With specific regard to the drainage of water between adjoining lands, the process of adjudication of property rights and interests in land allows the responsible public authority some flexibility in the demarcation of land boundaries for purposes of ensuring the better drainage of adjoining lands. 64/

Specific provisions exist for the drainage of public roads. Acts which may impede the drainage of water from roads, or the discharging of water onto roads, are forbidden, subject to direct enforcement by the public authorities and to a fine, imprisonment or both. 65/ In addition, the Governor is empowered to provide for the proper drainage of roads. 66/

Specific provisions finally govern the reclamation and drainage of swamp areas - including the provision for storm water drainage on reclaimed land - under penalty of a fine, imprisonment or both. 67/

VII. WASTE, POLLUTION AND MOSQUITO CONTROL

A. Waste and misuse of water

Detailed provisions in the Water Authority Law are aimed at controlling the waste or misuse of water. Subject to a few minor exceptions, it is an offence under the law to let ground water run to waste from a well. 68/ The offence carries the penalty of a fine up to \$CI 6,000 and/or imprisonment for up to one year. 69/ If water is abstracted under a licence, or if the water is put to a use different from that which is authorized, the Water Authority may intimate to the holder of the licence to stop the abuse, under penalty of the termination of the licence. 70/ The wrongful use of water under a licence is in any case subject to a fine of up to \$CI 6,000 and/or imprisonment for up to one year regardless of whether the licence is terminated or not under the provisions above. 71/

Furthermore, if ground water is let run to waste - regardless of whether the water is drawn under a licence or not - the Water Authority may issue cease-and-desist type orders to stop the waste. 72/ These orders can be enforced directly by the Authority. 73/

With regard to water supplied by the Water Authority to the public via its mains, consumption beyond one's reasonable needs may bring about the suspension of the service. 74/ The Authority may meter connections to the public water supply system 75/ for recording purposes and to keep consumption in check. Comparable provisions apply with respect to piped water made available through desalination. 76/

B. Pollution

The Water Authority Law contains specific provisions aimed at preventing the pollution of water underground. Under the law, activities which may result in the pollution of water are subject to a permit from the Water Authority. Among the activities liable to permit requirements, the law singles out the discharging of domestic and industrial effluents or other wastes on the ground, under the ground or directly into sources of water underground; the digging of canals for providing direct access to the sea from inland areas; and quarrying operations. 77/ Due publicity must be given to applications for a permit, and anyone wishing to object to the grant of a permit must be given an opportunity to do so. Permits have a limited duration and are liable to be terminated by the Water Authority on a specific number of grounds - including, among others, protection of water underground, and preservation of domestic and commercial water uses. 78/ Discharge permits are recorded by the Authority in a Register of Waste Discharge Permits. 79/

Discharges from the sewerage system operated by the Water Authority are equally subject to the permit requirements of the law. In this case, however, permits are issued and administered by the Governor. 80/

All the decisions made by the Water Authority in the administration of the waste discharge permit provisions of the law are subject to judicial review. 81/

The permit requirements of the law are sanctioned by a fine of up to \$CI 6,000 and/or imprisonment for up to one year, 82/ and the Authority may issue cease-and-desist type orders to stop unauthorized discharges. If the recipient of such an order fails to comply with it, the Authority may itself carry the order into effect at the defaulter's expense. 83/

The pollution of public springs, streams and reservoirs is specifically contemplated as a criminal offence under the Penal Code, and punished with a fine, imprisonment or both. 84/

Specific anti-pollution provisions are further contained in the law which regulate specific water-related interests. Thus, the pollution of desalinated water is subject to a fine, imprisonment or both. 85/ The pollution of irrigation channels is regarded as a nuisance and is dealt with accordingly. 86/

C. Mosquito control

Specific legal provisions exist for the prevention of any receptacle containing water for domestic or commercial consumption from becoming a mosquito-

breeding place. Their enforcement is ensured by means of fines, imprisonment or both and, if necessary, through direct execution of remedial measures by the public authority (Mosquito Research and Control Unit). 87/ In addition, mosquito-breeding washhouses, bathhouses, wells, pools and any collection of water are subject to sanitary control by the public health authorities. 88/

VIII. GROUND-WATER RESOURCES USE AND PROTECTION

As already noted in the introduction, underground water resources practically are the only source of fresh water available in the country. Therefore, the regulatory mechanisms provided by the Water Authority Law for controlled exploitation of the underground water lenses and for their protection from pollution fall within the scope of the present section and need not be re-illustrated.

There are, however, still other provisions in the above law which are specifically aimed at protecting the ground-water lenses from depletion and contamination. Within the framework of the licensing process for the abstraction and use of water from a given source, the Water Authority may determine the safe yield of wells drawing from that source, lay down well spacing requirements, and restrict the number of wells which can be drilled in the area or the rate and timing of abstractions from the wells existing in the area. 89/

Furthermore, the Water Authority is empowered to revise or suspend water allocation under the water abstraction licences in effect in a given area if the relevant source of water is threatened with depletion or saline water intrusion. 90/ The need to protect ground water - without further qualifications - is grounds for the termination of waste discharge permits in effect. 91/

The digging or drilling of wells is further regulated from the standpoint of the exercise of the relevant profession. Nobody can dig or drill a well unless he holds a professional licence from the Water Authority, 92/ under penalty of a fine of up to \$CI 6,000 and/or imprisonment for up to one year. 93/ The Authority is to lay down standard qualifications for the licensing of well diggers. 94/ A record of all professional licences is kept by the Authority in a Register of Well Diggers' Licences. 95/

Licensed well diggers are made by the law a party to the law enforcement process inasmuch as they are under a statutory obligation to refrain from digging a well for a person who does not have a valid water abstraction licence. 96/ This, under penalty of a fine of up to \$CI 3,000 and/or imprisonment for up to six months, 97/ and the revocation of the professional licence at the discretion of the Water Authority. 98/ Licensed well diggers are also under the statutory obligation to report to the Authority on the works they undertake, under the above-mentioned penalties. 99/

IX. CONTROL AND PROTECTION OF WATERWORKS AND STRUCTURES

As already illustrated in previous sections, the digging or drilling of wells for ground-water abstraction is strictly controlled from the standpoint of the licensing of water abstractions and attendant works, 100/ and the separate licensing of the well diggers' profession. 101/

All works connected with the provision by the Water Authority of a piped water supply and sewerage services to the public are under the direct control of the Authority. 102/ The damaging of facilities is punished with a fine of up to \$CI 3,000 and/or imprisonment for up to six months, and the repayment of all the necessary repairs. 103/

The destruction or damaging of canals, aqueducts, reservoirs, and of appurtenant works, which result in a danger of inundation or in damage to lands or buildings, constitutes criminal offence under the Penal Code and is punished with imprisonment for life. 104/

Additional provisions can be found in the statutes which regulate specific water-related activities. Thus, destroying or damaging systems for the desalination, purification or distillation and piped distribution of water is punished with a fine, imprisonment or both. 105/ The unauthorized use of dykes constructed for mosquito control purposes is similarly punished, 106/ while mining in the close proximity of public reservoirs or dams is subject to a specific authorization. 107/

X. GOVERNMENT WATER RESOURCES ADMINISTRATION

Under the Water Authority Law, all responsibilities concerning the management of water resources in the Cayman Islands have been consolidated in the Water Authority. The Authority has corporate status and is governed by a Board of not less than seven and not more than eleven members - including a Chairman - all appointed by the Governor. Members of the Board hold office for up to two years and are eligible for re-appointment. 108/ The chief executive officer of the Authority is a Director, appointed by the Governor. The Director is also secretary to the meetings of the Board. 109/ The Authority operates subject to the policy guidelines laid down by the Governor. 110/ It enjoys financial autonomy and is subject to accounting and auditing requirements. 111/

The Water Authority is responsible under the relevant enabling legislation for (a) drafting and implementing a water resources development plan for the islands; 112/ (b) inventorying water resources and keeping them under close control; 113/ (c) administering all regulatory mechanisms provided for in the Water Authority Law for controlled water resources exploitation, and protecting the water resources from depletion and pollution; 114/ (d) providing and managing public water supply and sewerage services; 115/ and (e) advising the Governor on matters of policy and on the subsidiary legislation needed for the implementation of the Water Authority Law. 116/

Other government bodies having water-related responsibilities are the following:

(a) The Governor, under the Water Authority Law, has policy-making authority in regard to the development, conservation and use of the water resources of the islands. He further exercises control over the Water Authority inasmuch as all the members of the Authority's Governing Board, and the Director, are appointed by him. 117/ In addition, it is the Governor who administers the waste discharge permit provisions of the Water Authority Law, with respect to discharges from the sewerage system operated by the Water Authority; 118/ and the concessional régime under which the production and piped distribution of desalinated water are to be carried out; 119/

(b) The Central Planning Authority has responsibility for land use planning and control. 120/ Administration of land use regulatory controls in the islands of Cayman Brac and Little Cayman, however, is the separate responsibility of a Development Control Board; 121/

(c) The health authorities - the Chief Medical Officer and the Chief Environmental Health Officer - retain responsibility for those aspects of water resources management which bear upon the health of the public;

(d) The Mosquito Research and Control Unit has control over swampy areas from the standpoint of preventing and controlling the spread of mosquitoes;

(e) The Caymanian Protection Board exercises control over the water trucking concerns and the concerns which supply desalinated water from the standpoint of the trade licensing legislation in force. 122/

XI. SPECIAL AND AUTONOMOUS WATER DEVELOPMENT AGENCIES

Within the framework of its responsibility for promoting agricultural and industrial development, 123/ the Agricultural and Industrial Development Board may grant loans for, among others, the provision of water supplies, irrigation and anti-soil erosion measures. 124/ The Board, which is a body corporate and whose members are appointed by the Governor, enjoys financial and administrative autonomy within the policy guidelines set by the Governor. 125/

In addition, the Housing Development Corporation 126/ has responsibility for, among others, the provision and maintenance of water and sewerage systems within its area of operation. 127/ The Corporation - whose members are appointed by the Governor - has financial and administrative autonomy within the policy guidelines set by the Governor. 128/

XII. FINANCIAL ASPECTS

A. Government financial participation policies

Within the framework of agricultural and industrial development policies embodied in the legislation in force, the Government provides - through the Agricultural and Industrial Development Board - financial assistance in the form of long-term and short-term loans for, among others, the provision of water supplies, irrigation and anti-soil erosion measures. 129/ Interest can be charged with respect to such loans 130/ and specific penalties - ranging from a fine, imprisonment or both to the recalling of the loan - are envisaged for the application of a loan to a different purpose than that for which the loan had been granted. 131/

B. Special funds

A Mosquito Abatement Fund operates under the control of the Financial Secretary for the furtherance of mosquito control programmes. The Fund is financed through the proceeds from the sale or development of land reclaimed by the Government for mosquito control purposes. 132/

C. Water rates, charges and fees

The Water Authority is empowered to levy and collect rates and service charges with respect to the provision of water supply and sewerage services to the public. 133/ Water and sewerage rates and charges are to be determined in regulations to be made under the Water Authority. 134/ In addition, the Water Authority is to lay down criteria which should guide the determination of the rates chargeable with respect to the disposal of waste via private sewers. 135/

Ground water abstracted under a licence from the Water Authority is not charged for per se. 136/ Fees are charged and collected by the Authority with respect to the grant and renewal of licences and permits under the Water Authority Law, and with respect to all acts and services rendered under the law. 137/

Suppliers of piped desalinated water are empowered to charge their customers for the water delivered and the service provided, subject to the charging criteria set forth in the instrument of concession under which they operate. 138/

XIII. ENFORCEMENT AND IMPLEMENTATION

The protection of water rights, enforcement of legal provisions and implementation of administrative orders and penalties will be reviewed in the present section.

A. Protection of water rights

The Water Authority Law provides for a two-tier judicial review of determinations made by the Water Authority in the administration of the regulatory mechanisms provided for in the law. The Authority's determinations are first subject, on appeal, to review on the merits or on points of law by the Magistrate's Court. 139/ The Court's decisions may in turn be appealed before the Grand Court on points of law only, and the Grand Court's decisions are final. 140/

Water rights which had accrued from ownership of land lying above water sources underground under the common law rules in force before the enactment of the Water Authority Law are granted special protection. Under the law, water rights which had been actually exercised at any time during the year prior to the date of entry into effect of the law are entitled to a licence from the Water Authority as a matter of right - to the extent that a licence is required for the abstraction and use of water. 141/ The relevant request must be made not later than a set deadline, under penalty of forfeiting the entitlement to a licence. 142/ Licences of this kind - known as licences of right - are treated after the grant on a par with all other licences for the abstraction and use of water, and are subject to be revised or terminated by the Water Authority on the same grounds as any other licence. 143/

B. Law enforcement

The Water Authority is granted by the enabling statute a wide-ranging array of powers instrumental in implementing and enforcing the regulatory mechanisms provided for in the Water Authority Law. The Authority has broad powers of inspection and monitoring of water and related works and, in general, the power of ensuring compliance with the law and with the licences and permits granted pursuant

to it. 144/ In the exercise of these powers, the Authority may intimate that works for the abstraction and use of water or for the disposal of sewage being dangerous to life, health or property be repaired or modified to the satisfaction of the Authority. This request remains in effect, under penalty of the suspension of the licence or permit, until the required repairs or modifications have been effected. 145/

Furthermore, the Authority may issue orders intimating that such unlawful activities be terminated. These are (a) the abstracting and using of water without a licence or contrary to its terms and conditions; (b) the disposing of wastes without a permit or contrary to its terms and conditions; and (c) the wasting of water. If said orders are not carried out by the persons concerned, the Water Authority may carry them out directly at that person's expense. The latter is further liable to a fine of up to \$CI 3,000 and/or imprisonment for up to six months, in addition to having his licence or permit, if any, terminated. 146/

The Water Authority has the necessary ancillary power to enter lands. 147/ It also has the separate power to require the holder of a water abstraction licence or of a waste discharge permit to keep a record of all activities carried out under the licence or permit. 148/

It will be further recalled that the Water Authority may cut off the supply of water to customers who either fail to pay their bills or take water in excess of their reasonable needs. 149/ Comparable enforcement powers are granted the concerns which provide a piped supply of desalinated water. 150/

C. Penalties

The penalties which sanction the regulatory provisions of the Water Authority Law have been illustrated in previous sections, whenever applicable. Stiff penalties - a fine of up to \$CI 6,000 and/or imprisonment for up to one year - apply with respect to the breach of the more important provisions of the law. The penalties are halved with respect to the breach of other provisions of the law. In either case, in addition to the above penalties, continuing offences may carry a daily fine of up to \$CI 100 so long as the offence continues. 151/

Notes

- 1/ Water Authority Law, sect. 9.
- 2/ Ibid., sects. 12 (1) and 16.
- 3/ Ibid., sect. 12 (1).
- 4/ Ibid., sects. 7 (1) (c) and 12 (1).
- 5/ Water Authority Law, sect. 13 (1) (a).
- 6/ Ibid., sect. 15.
- 7/ Ibid., sect. 10.
- 8/ Ibid., sects. 11 (1) and 13 (5).

Notes (continued)

- 9/ Ibid., sects. 10 (2) and 13 (4).
- 10/ Ibid., sect. 18.
- 11/ Ibid., sect. 19.
- 12/ Ibid., sects. 21-23.
- 13/ Ibid., sect. 22 (2).
- 14/ Water Authority Law, sects. 48-49. See also sect. XIII below.
- 15/ Water Authority Law, sect. 54 (1).
- 16/ Ibid., sects. 46 (2) (a) and 47 (1). See also sect. XIII below.
- 17/ Water Authority Law, sects. 7 (1) (d) and 22.
- 18/ Water Authority Law, sects. 6 (a) and 7 (1).
- 19/ Ibid., sect. 7 (1) (c)-(e).
- 20/ Ibid., sect. 28 (1).
- 21/ Ibid., sect. 56.
- 22/ Ibid., sect. 28 (2).
- 23/ Ibid., sect. 7 (1) (g). See also sect. XI below.
- 24/ Water Authority Law, sect. 30 (1).
- 25/ Ibid., sect. 31.
- 26/ Water Authority Law, sects. 50 and 54 (2).
- 27/ Water (Production and Supply) Law, sect. 3.
- 28/ Water (Production and Supply) Law, sect. 4.
- 29/ Ibid., sect. 12 (a) (d) and (f).
- 30/ Ibid., sects. 7, 8 and 11.
- 31/ The setting of water fees and charges falls within the purview of the regulatory powers given to the Governor in regard to the terms and conditions under which a concession may be granted (Water (Production and Supply) Law, sects. 3 and 12 (f)). Applicable rates and charges are discussed in sect. XII (c) below.
- 32/ Water (Production and Supply) Law, sect. 13 (2).
- 33/ Water Authority Law, sect. 6 (c).
- 34/ Water (Production and Supply) Law, sect. 13 (2) (h).

Notes (continued)

- 35/ Ibid., sect. 13 (1) (a).
- 36/ Trade and Business Licensing Law, sects. 4 and 8, and Schedule (Industry, Agriculture and Primary Activities, No. 6).
- 37/ Water Authority Law, sect. 57.
- 38/ Development and Planning Law, sect. 6 (1) (c) (i), (3) and (4), and Second Schedule, V and VII (2) (b).
- 39/ Public Health Law, sect. 4 (1).
- 40/ Water Authority Law, sect. 31.
- 41/ Public Health Law, sects. 5 (1)-(3), 7 (2) (d), (h) and (v).
- 42/ Public Health Law, sects. 39-42.
- 43/ Public Health (Edible Ice) Regulations, sect. 3 and following.
- 44/ Ibid., sect. 13.
- 45/ Fire Brigade Law, sects. 10 (e) and 15 (a).
- 46/ Ibid., sect. 14 (d).
- 47/ Ibid., sect. 8 (2) (c).
- 48/ Development and Planning Law, sects. 24 and 26 (1) (c).
- 49/ Development and Planning Regulations, sects. 24 and 30 (3); Mosquito (Research and Control) Regulations, sect. 4 (1) (b) and (2); and Mosquito (Research and Control) Law, sect. 27. These provisions, however, apply to Grand Cayman Island only.
- 50/ Emergency Powers Law, sect. 2 (1) and 3 (1).
- 51/ Water Authority Law, sect. 6 (b).
- 52/ Ibid., sect. 7 (1).
- 53/ Ibid., sect. 32.
- 54/ Ibid., sect. 33.
- 55/ Ibid., sect. 56.
- 56/ Ibid., sects. 34 and 38 (1) (c).
- 57/ Ibid., sect. 38.
- 58/ Ibid., sect. 7 (1) (g). See also sect. XII below.

Notes (continued)

59/ Public Health Law, sect. 7 (2) (h). See also Water Authority Law, sects. 7 (1) (d) and 22.

60/ Development and Planning Regulations, sects. 6 (3) (f) and (5), 22 and 30 (3).

61/ Water Authority Law, sect. 57.

62/ Development and Planning Law, sect. 6 (1) (c) (i), (3), (4), and Second Schedule, V and VII (2) (b).

63/ Water Authority Law, sect. 37.

64/ Land Adjudication Law, sect. 12 (1) (c).

65/ Roads Law, sects. 16 (e), (f) and (h), 17, and 20 (a)-(b).

66/ Ibid., sect. 13 (d).

67/ Mosquito (Research and Control) Law, sects. 15-17 and 27; and Mosquito (Research and Control) Regulations, sect. 4.

68/ Water Authority Law, sect. 51.

69/ Ibid., sect. 54 (1).

70/ Ibid., sect. 21 (1) (b).

71/ Ibid., sect. 21 (2).

72/ Ibid., sect. 46 (2) (d).

73/ Ibid., sect. 47 (1). See also sect. XIII below.

74/ Water Authority Law, sect. 30 (1).

75/ Ibid., sect. 7 (1) (e).

76/ Water (Production and Supply) Law, sect. 8.

77/ Water Authority Law, sect. 24 (1).

78/ Ibid., sect. 26.

79/ Ibid., sect. 27.

80/ Ibid., sect. 36.

81/ Ibid., sects. 48-49. See also sect. XIII below.

82/ Water Authority Law, sect. 54 (1).

83/ Ibid., sects. 46 (2) (b) and 47 (1). See also sect. XIII below.

Notes (continued)

- 84/ Penal Code, sect. 156 (a), 32.
- 85/ Water (Production and Supply) Law, sect. 13 (3) (a).
- 86/ Public Health Law, sect. 7 (2) (i). See also sect. V.D above.
- 87/ Mosquito (Research and Control) Law, sects. 7, 8, 11, 12, 14 and 27.
- 88/ Public Health Law, sect. 7 (2) (e), (1)-(m). See also sect. V.D and sect. VI.B above.
- 89/ Water Authority Law, sect. 13 (1) (b).
- 90/ Ibid., sect. 19.
- 91/ Ibid., sect. 26 (2) (d). See also sect. VII.B above.
- 92/ Ibid., sect. 39.
- 93/ Ibid., sect. 54 (1).
- 94/ Ibid., sect. 60 (1) (p).
- 95/ Ibid., sect. 42.
- 96/ Water Authority Law, sect. 41 (1) (a).
- 97/ Ibid., sect. 54 (2).
- 98/ Ibid., sect. 40.
- 99/ Ibid., sect. 41 (1) (b), 54 (2), 40.
- 100/ See sect. III above.
- 101/ See sect. VIII above.
- 102/ Water Authority Law, sect. 56.
- 103/ Ibid., sects. 52 and 54 (2).
- 104/ Penal Code, sect. 244 (b).
- 105/ Water (Production and Supply) Law, sect. 13 (3) (a).
- 106/ Mosquito (Research and Control) Regulation, sect. 3.
- 107/ Mining Law, sect. 8 (1) (d).
- 108/ Water Authority Law, sect. 3, and Schedule, sect. 1.
- 109/ Water Authority Law, sect. 4.
- 110/ Ibid., sect. 3 (1).

Notes (continued)

- 111/ Ibid., sect. 8.
- 112/ Water Authority Law, sect. 5 (1).
- 113/ Ibid., sect. 5 (3) (a) and (c).
- 114/ Ibid., sect. 5 (3) (b).
- 115/ Ibid., sect. 6 (a)-(b).
- 116/ Ibid., sect. 5 (3) (d), (e) and (i).
- 117/ Ibid., sects. 3 (1)-(2) and 4 (1).
- 118/ Ibid., sect. 36.
- 119/ Water (Production and Supply) Law, sect. 3.
- 120/ Development and Planning Law, sects. 3 (1) and 5 (1).
- 121/ Ibid., sects. 3 (4), 11 (1) and 12 (1).
- 122/ Trade and Business Licensing Law, sects. 4 and 8, and Schedule (Industry, Agriculture and Primary Activities, No. 6).
- 123/ Agricultural and Industrial Aid Law, sects. 3, 5 (1) and 6.
- 124/ Agricultural and Industrial Aid (Loans) By-Laws, sect. 5 (g)-(h).
- 125/ Agricultural and Industrial Aid Law, sects. 4 (1)-(2), 13 and 14.
- 126/ The bill providing for the establishment of the Corporation has only recently been signed into law.
- 127/ Bill for a law to establish a Housing Development Corporation for promoting the development of housing, sect. 17 (3) (c).
- 128/ Ibid., sects. 4 (1)-(2), 16 (1) and 18.
- 129/ Agricultural and Industrial Aid (Loans) By-Laws, sect. 5 (g)-(h). See also sect. XI above.
- 130/ Agricultural and Industrial Aid (Loans) By-Laws, sect. 10.
- 131/ Agricultural and Industrial Aid Law, sects. 9 (3) and 10 (b).
- 132/ Mosquito (Research and Control) Law, sect. 3 (2).
- 133/ Water Authority Law, sect. 7 (1) (g).
- 134/ Ibid., sect. 60 (j), (k) and (m).
- 135/ Ibid., sect. 60 (l).

Notes (continued)

136/ However, ground water abstracted directly by the Water Authority for delivery to trucking concerns is payable for by the latter under the provisions empowering the Water Authority to charge for water delivered to the public via the Authority's water supply system.

137/ Water Authority Law, sects. 60 (r) and 61.

138/ Water (Production and Supply) Law, sects. 3 and 12 (f).

139/ Water Authority Law, sect. 48.

140/ Ibid., sect. 49.

141/ I.e., to the exclusion of water rights for domestic use. Since these uses have been exempted by the law from licensing requirements, "domestic" water rights accrued in the past need not seek confirmation nor claim the privilege granted by section 10 of the Water Authority Law.

142/ Water Authority Law, sect. 10. See also sect. III above. The deadline for the filing of applications under section 10 of the Law was 15 September 1983.

143/ Water Authority Law, sect. 17.

144/ Ibid., sect. 44.

145/ Ibid., sect. 45.

146/ Ibid., sects. 46, 47 and 54 (2).

147/ Water Authority Law, sect. 7 (1) (f).

148/ Ibid., sect. 43.

149/ Ibid., sect. 30 (1).

150/ Water (Production and Supply) Law, sect. 8.

151/ Water Authority Law, sect. 54.

DOMINICAN REPUBLIC

INTRODUCTION

The Dominican Republic comprises the eastern part of the island of Santo Domingo, one of the Greater Antilles. The total area of the Dominican Republic is 48,009.3 square kilometres (48,442 sq km, including the adjacent islands), and its population is approximately 5,650,000 (1981 census).

The island was discovered by Columbus, who named it "La Española" on 5 December 1492; today, it is called "Hispaniola". The capital, Santo Domingo, is the oldest American city and for 50 years was Imperial Spain's Royal Capital in the New World. The island colony was constantly attacked by French and English filibusters and corsairs. Under the Ryswick Treaty (1697), Spain was obliged to recognize the sovereignty of France over the western part of the island (now Haiti), and under the Basle Treaty (1795), Spain ceded the colony to France and renounced its sovereignty over the historical island.

The Dominican Republic was founded in 1844, but it did not attain full independence until 1865. The country today has a republican form of government. Executive power is vested in the President of the Republic, who is elected by direct ballot for a period of four years. Legislative power is exercised by a Senate and a Chamber of Deputies. Members of both Chambers are elected for a period of four years.

The country is hilly. The northern range, or Sierra de Monte Cristi, rises in the north and runs almost parallel to the northern Atlantic coast (maximum altitude of 1,400 m). In the centre of the country, running from west to east, is the Great Central Range, having an altitude of slightly more than 3,000 metres and forming the spinal column of the country. The mountains are lower on the eastern side of the island. A third mountain range, the Sierra de Neiba, cuts across the southern part of the country with spurs and foothills. A wide valley lies between the northern and central ranges. The western part of the valley, Valle del Cibao, receives water from the Yaque del Norte river (400 km long) and its tributaries. The fertile eastern part of the valley, Vega Real, is watered by the Yuna river. Rivers such as the Yaque del Sur, Ozama and others on the southern side of the central range, which is in fact the dividing line between the Atlantic Ocean and the Caribbean Sea, flow into the Caribbean Sea. In the south of the country stretches a low-lying area where lagoons abound.

The climate of the country varies, with a dry season and a wet or rainy season. Rainfall on the Caribbean coast totals 400 millimetres and sometimes there is no rain for six or seven months. The low-lying central provinces often suffer from drought, while rainfall is abundant in the mountainous areas (up to 2,000 mm annually), and the high slopes are covered with tropical vegetation.

The economy of the Dominican Republic is based on agriculture. Over 81 per cent of the population is involved in agriculture. Although more than half the country is suitable for farming, only one fourth of the land area is under cultivation. The remainder is covered in woods, where many useful species abound. The most widely cultivated crop is sugar-cane then - in order of importance - cocoa, coffee, tobacco, rice and maize. Some 120,000 hectares of agricultural land benefit from artificial irrigation, resulting in harvests that are abundant. Livestock is important to the economy more than mining. Industries continue to

develop from year to year and are no longer restricted to the processing of agricultural produce. The chief industry is the manufacture of cane-sugar and its derivatives (distillates, alcohol, rum and liqueurs), followed by cigars and cigarettes. Recently, other manufacturing industries have developed to supply the demands of the national market. Among these are chocolates, edible oils, mineral acids, ham, shoes, textiles, paper, soda, cement and the like.

I. LEGISLATION IN FORCE

The main statutes of water-related legislation are the following:

1. National Constitution;
2. Civil Code;
3. Municipalities Act No. 3455, 21 December 1952;
4. Law No. 4550, relating to mining, 20 September 1956;
5. Law relating to the ownership of waters and the allocation of public water (hereinafter referred to as "Water Act") No. 5852, 29 March 1962; 1/
6. Law No. 5856 of 2 April 1962 on forests;
7. Agrarian Reform Law No. 5879 of 27 April 1962;
8. Law No. 314 of 6 July 1964 setting up the International Waters Bureau;
9. Law No. 6 of 8 May 1965 setting up the National Water Resources Institute (INDRHI); 2/
10. Law No. 264 of 6 March 1968 setting up the Dominican Electricity Corporation;
11. Law No. 281 of 29 June 1966, setting out other duties of the National Water Resources Institute and the Agricultural Bank of the Dominican Republic;
12. Executive Decree No. 2547 of 22 June 1968, establishing the Revolving Fund for the Construction of Rural Aqueducts, administered by the National Institute for Drinking Water and Sewerage (INAPA);
13. Law No. 401 of 8 January 1969, establishing the Valdesia Corporation;
14. Law No. 487 of 15 October 1969, on Ground Water Management and Conservation;
15. Executive Decree No. 2013 of 24 February 1972, transferring to the National Institute for Drinking Water and Sewerage Systems control of the Haina River Basin to be used as a supply source for the city of Santo Domingo de Guzmán;
16. Law No. 314 of 12 April 1972 classifying lands suitable for irrigation into first, second and third categories;

17. Executive Decree No. 2275 of 18 May 1972, establishing an Expert Commission under the responsibility of the Ministry for Public Health and Social Assistance to look after the health of the inhabitants and prevent water pollution;
18. Executive Decree No. 2596 of 4 September 1972, establishing a Commission to examine environmental pollution problems;
19. Law establishing the National Institute for Drinking Water and Sewerage Systems (INAPA).

II. OWNERSHIP OF WATER

In accordance with legislation in force, the following areas are regarded as public property and, hence, cannot be appropriated by private individuals:

- (a) Rivers, streams and springs which flow through natural channels; 3/
- (b) Lakes and lagoons formed naturally on public lands, large enough to be sources of supply to communities which may construct waterworks for public use; 4/
- (c) Water which rises on public lands; 5/
- (d) Rainwater flowing through dams or gullies in the public domain; 6/
- (e) Water which flows out of the land in which it rises; 7/
- (f) Water in rivers or streams which flow only during periods of heavy rains; 8/
- (g) Mineral waters. 9/

The following are considered private water:

- (a) Water in lakes, lagoons or ponds formed naturally on private land, provided that they are not sources of supply for communities or that waterworks for public use cannot be established; 10/
- (b) Water which rises or falls on private land, provided that its course ends within the same property. 11/ It does not appear to have been established by any law or by jurisprudence if this right of ownership is acquired by occupation, if it is a usufructuary right or a mere administrative right of use.

As mentioned above and in the spirit of a law enacted subsequently to the Water Act (the Groundwater Management and Conservation Act), it may be said that the legislators intended to nationalize all surface or ground water. The preamble to the Groundwater Management and Conservation Act states that "since both underground and surface water are State property and since State property is inalienable and unprescriptible, the right to use the water shall be granted if it is in the social interest". 12/ This is confirmed in the text of the same Act which established the object of the Act as "all underground water located in the national territory, whatever the physical state in which it is found". 13/ It may be noted, however, that the terms of the Act omit surface water, and logically problems of interpretation could arise. The 1962 Constitution conferred a

privilege over all water, including ground water, to the National Institute for Drinking Water and Sewerage (INAPA). 14/ However, private individuals who have suffered damages are entitled to legal protection. In conclusion, it would seem that water rights may be privately owned, as specified in the Water Act, where they refer only to surface water. With respect to underground water, there is no doubt that the legislators intended to nationalize all such water as mentioned above.

III. RIGHTS TO USE WATER OR WATER RIGHTS

A. Mode of acquisition

Private individuals are entitled to use surface water in cases in which the Water Act grants them the right of ownership as mentioned above and, in addition, they are entitled to the use of:

(a) Water from rivers or fountains 15/ for common or household uses or for watering livestock;

(b) Water which falls on their lands; 16/

(c) Rainwater which flows adjacent to lands adjoining public roads, when used for irrigation purposes; 17/

(d) Water from public channels which flow intermittently adjacent to privately owned land, as well as water from streams or springs which flow only during rainy periods for irrigation purposes, provided that the rights of lower riparians who have already constructed dams are not affected; 18/

(e) Underground water abstracted by means of ordinary wells, provided that the public interest or acquired rights are not endangered thereby. It is, however, up to INDRHI to determine both conditions prior to, during and after the execution of the works. 19/ The law, therefore, defined ordinary wells as "wells drilled solely for domestic uses for watering animals, provided that the flow rate does not exceed one litre per second"; 20/

(f) Water from State canals or aqueducts flowing through privately owned lands, which may be used by shepherds and livestock farmers, 21/ except for dipping livestock; 22/

(g) Waters which are found in the course of mining operations or which are the result of drainage. The holder of a mining concession is entitled to such water. 23/

B. Water use authorizations, permits or concessions

A water use authorization is required in the following cases:

(a) Water in rivers and streams which flow through natural channels may be used by riparian and lateral owners. The authorization is limited to 10 litres per second, with preference being given to upper lands and land closest to the river. An authorization may be refused only if it is contrary to the law or if it may be of prejudice to third parties; 24/

(b) Use of water in ravines or public watercourses or streams or springs, which only flow when rainfall occurs for the needs of individual users; 25/

(c) Use of water which does not flow in a definite channel by the owners of the land over which these waters flow after they have left the land on which they naturally occur; 26/

(d) Abstraction of ground water by means of deep wells. These are defined by the law as all wells constructed to abstract water in excess of 1 litre per second, whether for household purposes or for watering animals, for irrigation or for municipal or industrial or other use. Wells used for collecting sewage, waste water and rainwater are also regarded as dry wells; 27/

(e) Use of private or surplus water for the household uses of mine workers. 28/

A concession is required for the use of public water for fisheries 29/ industrial uses, including energy production, 30/ agricultural uses, 31/ and whenever drainage water and irrigation water are utilized. 32/

Concession rights are defined in and protected by a Water Title. It must be noted that under the Water Act, a concession covered by a Water Title does not suffice to allow the holder to construct necessary works, or to put the water to actual use. Annual permits must be obtained for each stage. 33/ The following are the features of the Water Titles:

(a) Water Titles are granted by the Government. The grant may be refused when the water is needed for government irrigation projects or in the public interest. 34/ A request may be granted in part only for equitable distribution when the available flow makes this necessary. 35/ The grant may also be refused when the water is needed for municipal uses 36/ or for use by the National Institute for Drinking Water and Sewerage (INAPA); 37/

(b) Different uses are not set out in order of priority, except where uses prior in time are concerned; 38/

(c) No publicity is given to the procedure for obtaining the Title or to the relevant validity period, since Titles are associated indissolubly with the land which benefits from them and may be transferred to other lands by the water authority; 39/

(d) The water may not be used for other purposes unless a new concession is obtained; 40/

(e) No legal action may be taken against the Government if the flow of water is suspended or reduced; 41/

(f) INDRHI and the associations of irrigation water users may fix turns for irrigation; 42/

(g) Payment of contributions may be provided for; 43/

(h) The amount of water which may be used is stipulated - only in the case of irrigation use; 44/

- (i) A survey of irrigation streams and channels may be required in order to prevent water wastage; 45/
- (j) A permit may be required for any further use of the water; 46/
- (k) A title is valid indefinitely for fishery, 47/ energy or industrial uses; 48/
- (l) The water authorities are empowered to amend the terms of the concession in keeping with water development requirements; 49/
- (m) Titles are forfeited if the conditions under which they were granted are not fulfilled 50/ or if the right is not exercised for two years; 51/
- (n) Only the rights conferred with respect to ground-water use may be revoked, subject to INDRHI considering revocation appropriate on technical grounds. 52/

IV. ORDER OF PRIORITIES

The use of surface waters for municipal, water supply and sewerage purposes is indirectly accorded priority by the law, since Titles to the use of water for other purposes may be cancelled or modified when the water is needed for any of the purposes mentioned above.

In accordance with the Water Act, next in the order of priorities is irrigation, in those cases in which the law establishes the right to a certain volume of water as a direct consequence of the ownership of land as mentioned in the chapter on water ownership. Priority is also given to uses established before the concession is granted, whatever these uses may be. 53/

Also, the law controlling the exploitation and conservation of ground water established that ground-water use for domestic, municipal or other community purposes shall be given priority over industrial or irrigation uses. 54/ Under the Act, the term "industrial" also includes power production. 55/

V. LEGISLATION ON BENEFICIAL USES OF WATER

A. Domestic use

The inhabitants of the Dominican Republic are entitled to use public surface waters from rivers or fountains for normal household purposes. 56/ They may also use ground water for the same purposes provided that the wells - whether ordinary or deep - meet the applicable requirements. 57/

B. Municipal use

In accordance with the relevant law, the town councils may construct, maintain and administer directly or through concessions or authorizations all types of dams, reservoirs, aqueducts, pumps and water supply systems, as well as construct and maintain sewerage systems and drains for the disposal of water sewage. 58/ Ground water from deep wells may also be used for municipal purposes. 59/

C. Agricultural use, including irrigation and livestock watering

The Minister of Agriculture is in charge of planning agricultural development at the national level, preserving renewable natural resources, regulating and increasing the reasonable use thereof and managing water conservation. He must co-operate with INDRHI for the use and distribution of irrigation water and must advise them with respect to supplies to irrigable lands. The Ministry of Agriculture must also plan the water needs for livestock watering.

As a result of the introduction of agrarian communities, the Dominican Agrarian Institute is authorized to establish irrigation and drainage facilities. 60/ The law states that in keeping with State agrarian policy, one of the aims of agrarian reform is the improvement of agricultural lands and areas through the construction of irrigation systems. 61/

D. Fishing

Permanent concessions may be granted for fishing purposes provided that that is not detrimental to health or does not affect existing rights. 62/ The Valdesia Corporation is responsible for promoting and regulating fishing in the Nizao River and its tributaries as a source of food, as a sport and means of recreation and as a means of developing natural beauty areas. 63/

E. Industry and mining use

A concession is required for the use of water for industry and mining. The concession is a permanent one 64/ provided that the law is not infringed by polluting the water with substances harmful to health, vegetation or to fish and fish breeding. 65/ Concession holders may not divert the course of the rivers, damage bordering lands, irrigation lands, established industries or fishing grounds, 66/ transfer for use elsewhere or hinder the water navigation. 67/ It must be emphasized that concessions for industrial uses are granted for river water alone. Power production is included among industrial uses. 68/ These concessions are granted by the Ministry of Industry and Commerce.

Mining uses are also regulated by means of concessions granted by the same Ministry. They entitle the holders to use the water which appears in the course of mining work, whether such water comes from a drain or is surplus water. 69/ Authorizations to use water may also be granted by INDRHI through Water Titles for direct use, whether the concession holders are owners of the water or not. Concessions are not required for the extraction of mineral substances from river beds, coasts, beaches and river banks. The government authorities merely issue a permit. 70/

Mineral ground waters which may be used for industrial purposes are subject to the regulations of the Ministry of Industry and Commerce. 71/ The Dominican Electricity Corporation (CDE) implements power projects. 72/

F. Medicinal and thermal use

Underground waters having medicinal or thermal properties are subject to the special regulations of the Ministry of Public Health and Social Assistance. 73/ No mention is made of surface water for these purposes.

G. Navigation and flotation

The works erected by riparians to protect the banks must not threaten or be detrimental to navigation or flotation. 74/

VI. LEGISLATION ON HARMFUL EFFECTS OF WATER

A. Flood control

Retention structures erected by riparian landowners to protect river banks must not divert the flow of water or cause floods. Works consisting of mere walls erected on private property and running lengthwise along the course of the river are not included here. The only requirement in this connection is that INDRHI must be informed. 75/

An authorization from INDRHI is required for structures which interfere with the course or flow of rivers 76/ and for protective structures erected by riparians. 77/ Both INDRHI as well as private owners, the latter with the approval of the former, may erect structures to protect the population and to prevent overflow. 78/

B. Drainage and sewerage

The owners of lands on which still waters exist are under an obligation either to undertake drainage works, subject to the agreement of the owners of the greater part of the lands concerned or cede, subject to compensation, the lands to be drained to the landowners who wish to carry out the necessary works. 79/ The obligation to drain one's land arises also as a result of the land being declared by the Government to be "unhealthy". 80/ If the majority of landowners fails to carry out the required drainage works, the lands concerned may be expropriated. 81/

Provisions concerning mining activities regulate liquid discharge containing substances likely to pollute drinking water. 82/

VII. LEGISLATION ON WATER USE, QUALITY AND POLLUTION CONTROL

A specialized commission chaired by the Minister of Public Health and Social Assistance has been set up under that Ministry to protect the health of the inhabitants and adopt suitable measures to prevent water pollution. 83/ It is composed of the Director of the National Health Service and four other members, either doctors of medicine or experts on the subject, appointed by the Executive. 84/ Their duties include setting up dispensaries in areas where dams are constructed; installing latrines in the settlements established in the said areas; inspecting and placing warnings in infected watercourses; and constructing dams in streets which cross streams, bathing holes and public washing places. 85/ The Ministry of Public Works and Communications and the Dominican Agrarian Institute (in the agrarian settlements) may carry out works and take measures to combat epidemics or pollution. 86/

A Commission to study the problems of environmental pollution has also been set up. It is composed of an Executive Director for Civil Defense, who is also Chairman, the Minister of Industry and Commerce, the Minister of Public Health and Social Assistance, the Minister of Labour and the Executive Directors of INDRHI and INAPA. 87/

The above provisions concern general health protection measures with respect to the different uses of water. With regard to underground waters, specific requirements for the construction of deep wells and technical measures to prevent chemical or organic contamination of underground waters are called for by the ground-water legislation in force. 88/

VIII. LEGISLATION ON GROUND-WATER RESOURCES

Special legislation deals with ground water. 89/ All underground water located on national territory, whatever the physical state in which it is found, belongs to the national domain. 90/

The construction of wells is subject to a permit from INDRHI. INDRHI may cancel the permit when the holder fails to comply with the law. Cancellation may be for a fixed or indefinite period. INDRHI may also lift the penalty once the person has fulfilled his obligations. 91/ Furthermore, INDRHI has the power to take whatever measures it thinks fit to ensure that the uses to which ground water is put is not detrimental to the public interest or to other uses. In particular, measures must be taken to prevent the depletion of ground water. 92/

With a view to preventing interference with other uses of water, every user of ground water is to inform INDRHI of the dates of commencement and termination, and of the location of ground-water abstraction works. 93/ This information may be given in writing directly to INDRHI offices, or it may be sent by registered mail at least five days prior to the commencement of the abstraction works. Details of the work to be carried out and the use to which the abstracted water shall be put must be given. A similar notice must be submitted five days after termination of the works so that inspection of the same may be carried out by INDRHI. 94/

The law also vests INDRHI with the authority to prevent the drilling of deep wells if the Institute is not given prior notice in writing and if the forms given to the interested party are not completed satisfactorily. 95/

The Government is empowered to carry out abstraction works on privately owned land when this is in the public interest. It may also take the land without compensation. 96/ INDRHI is also empowered to open wells on privately owned lands for purposes of obtaining hydro-geological data. In such cases, the Government is to pay compensation for damages which may be caused as a result. 97/

IX. LEGISLATION ON CONTROL AND PROTECTION OF WATERWORKS AND STRUCTURES

INAPA is responsible for the construction, management and protection of water supply and sewerage works and structures, while INDRHI is responsible for the same activities for agricultural uses where both surface and ground water are concerned and when the works are financed by the Government. The responsibility for the management and protection of other works constructed by private owners vests in the owners themselves.

The Ministry of Industry and Commerce is responsible for the management and protection of waterworks used for industrial purposes, including power generation and mining facilities. Where state-financed works are concerned, the Dominican Electricity Corporation executes the works and projects. 98/

When works are to be used for thermal or medicinal purposes, INDRHI and the Ministry of Public Health and Social Assistance accept responsibility for management and protection. 99/ The town councils construct, manage and operate dams, reservoirs, aqueducts, pumps and water supply systems, sewage systems and drains.

The Dominican Agrarian Institute constructs, manages and administers irrigation systems and water services in the agrarian communities. 100/

The Valdesia Corporation has the mandate to construct, manage and protect the waterworks required to allow the rational use of water resources of the Nizao Basin for power generation, irrigation and water supply purposes. 101/ To this effect, the Corporation has authority to establish rules for the conservation of works, such as dams, tunnels, roads and the like. 102/

X. LEGISLATION ON THE DECLARATION OF PROTECTED ZONES OR AREAS

One of the roles of the Forestry Office, a branch of the Ministry of Agriculture, is to protect water sources and lands by establishing protected areas and forests in certain areas.

In zones containing underground water resources, the Government may, on the advice of INDRHI, establish protected areas on the basis of a survey of the resource and taking into account existing abstraction works and the maximum yield potential of the ground water. A protected area may also be established whenever current uses are found to be detrimental to the public interest. 103/

Once a protected area has been declared, abstraction works may be carried out or existing wells deepened subject to the written authorization of INDRHI. This even applies to ordinary wells. 104/

XI. GOVERNMENT WATER RESOURCES INSTITUTIONS AND ADMINISTRATION

A. At the national level

The primary focus of administrative responsibility for water resources management is INDRHI, which is an autonomous government agency. Apart from INDRHI, other government departments having responsibilities in the water resources sector are the following:

(a) Water resources planning is part of overall economic planning. Relevant responsibilities lie with the National Development Council, which promulgates the Government's economic and social policy, puts forward and adopts the measures to be taken by the different sectors of the public administration to implement its development plans; the National Development Commission, whose role is to assess projects and programmes in general; the Technical Secretariat of the Presidency, which, in co-operation with the centralized and decentralized bodies of the public administration and following the guidelines of the National Development Council,

prepares development plans and programmes; and the National Planning Office, which lays down guidelines for the country's economic and social development and for the preparation and implementation of the development plans and projects;

(b) The Ministry of Public Health and Social Assistance monitors the quality of the water supplied by INAPA and the sanitary conditions of the resources;

(c) The Ministry of Agriculture plans agricultural development and manages water conservation. Through the Forestry Office, it protects water sources and lands by establishing protected areas. It advises on the development of irrigable lands; provides INDRHI with guidelines concerning the management of water in the irrigation systems and co-operates with the Institute in the field of river basin conservation and in hydrological work for irrigation purposes; 105/

(d) The National Agricultural Council advises the Ministry of Agriculture with regard to sectoral and natural resources policies;

(e) The Meteorological Department carries out studies, supplies meteorological information and sponsors hydrological research in the major river basins with a view to forecasting floods;

(f) The Department of Hunting and Fisheries studies hunting and fisheries from the standpoints of conservation and management; 106/

(g) The Ministry of Industry and Commerce establishes energy and industrial policy and monitors the implementation thereof. It grants aqueduct servitudes for mining purposes and for the use of private surplus water and minerals in rivers and other waters.

B. At the international level

An international water bureau examines questions relating to international waters. 107/ These include the Artibonite, Dajabon and Pedernales river basins, and the El Fondo Lake Basin, all of which are shared with neighbouring Haiti. 108/

XII. LEGISLATION ON THE ECONOMIC AND FINANCIAL ASPECTS OF WATER RESOURCES

A. Government financial participation

The Government may finance any type of waterworks, directly or through autonomous agencies. The works may include water supply systems for domestic, industrial or commercial purposes; waste water and storm water disposal systems in both rural and urban districts; water supply and sewerage systems, irrigation systems, flood control structures, canals and hydroelectric facilities. Funds are provided for in the national budget by the institutions concerned or are in the form of loans from the Agricultural Bank of the Dominican Republic.

B. Reimbursement policies

The law directly shares the cost of waterworks and services between the users and the Public Administration. The Government finances all types of works, but when these are for power production and for irrigation, water rates are levied on the users of the service. 109/

The law on the ownership of water and allocation of public water provides that when the Government constructs irrigation works, the landowners who benefit from them will pay for said works in equal proportion to the benefit 110/ obtained or to the investment involved. Part payment is to be made in the form of a piece of land benefiting from the work and within reach of the channel concerned. 111/ Landowners who use or may use the water from a channel constructed by the Government are to pay their share in kind, as follows: 112/

(a) Twenty-five per cent of their irrigable lands when the crops are cultivated for subsistence;

(b) Thirty-five per cent of their irrigable grass lands;

(c) Fifty per cent of their irrigable lands when the lands are uncultivated and when pluviometric conditions prevent them from being used for any type of food crop;

(d) Eighty per cent of their irrigable lands when the latter are uncultivated and when pluviometric conditions make them unusable for any type of crop if they do not benefit from the irrigation works.

When a plot is smaller than 150 acres, the owner shall be exempt from paying his share. 113/ As soon as an irrigation system has been completed or as soon as it is in operation, INDRHI is to inform the Director-General of the Agrarian Institute, stating the investment cost and giving any other useful information so that notice in writing may be submitted to the users stating the proportion of their lands to be transferred to the State in payment for the works done. Users are given 15 days from receipt of the notification to hand over their lands. In determining the share to be handed over, account is taken of the location of the lands, transport facilities and the benefit that is gained from the water. If within the specified period the lands are not handed over voluntarily to the Government, the Director-General of the Dominican Agrarian Institute may begin proceedings for the compulsory taking of the land. 114/

Under the Water Act, the direct beneficiaries of protection works are to pay for such works. 115/ The Government, however, bears the cost of works related to navigation and protection of villages. 116/

INDRHI fixes the water and power rates jointly with the users.

With respect to the Nizao River and its tributaries, the Valdesia Corporation establishes the general, special and occasional water rates it considers appropriate, within the limits set by the national Government. 117/ Labour is to be provided only to clean and maintain the irrigation canals constructed by the State. 118/

XIII. SPECIAL AND/OR AUTONOMOUS BODIES DEALING WITH WATER

A. At the national level

INAPA - Instituto Nacional de Aguas Potables y Alcantarillados (National Institute for Drinking Water and Sewerage) - is an autonomous government agency responsible for water supply systems for human, domestic, industrial and commercial uses; and for waste water and storm water disposal systems in both rural and urban areas. If necessary, it is also responsible for constructing, extending and altering water supply and sewerage systems; and for maintaining and operating all service related to drinking water, waste water and storm water. INAPA takes precedence by law over other government bodies in the use, control and monitoring of all waters belonging to the public domain for its own statutory purposes. 119/

INDRHI - Instituto Nacional de Recursos Hidráulicos (National Water Resources Institute) - administers, controls and regulates the use of surface and ground water; it also undertakes studies, projects and plans for all water and power related works necessary for the overall development of river basins, in co-operation with other agencies concerned and in accordance with national development plans. It manages the national irrigation systems with the help of the users and in co-operation with the Ministry of Agriculture, and it operates the hydroelectric plants.

The Dominican Electricity Corporation is in charge of generating and distributing electric energy, as well as constructing and operating the necessary waterworks on behalf of the Government.

The municipalities construct, maintain and administer, directly or through concessions or authorizations, works such as dams, reservoirs, aqueducts, pumps and water distribution systems. They also construct and maintain the sewerage systems and drains for the disposal of storm water and waste water.

The Agricultural Bank of the Dominican Republic provides loans and technical assistance to farmers and irrigators who hold annual permits in conformity with the Water Act.

B. At the regional or basin level

The Valdesia Corporation was set up as an autonomous government institution with legal personality and financial autonomy. 120/ The purpose of the Corporation is to ensure the rational use of the water resources of the Nizao River and its tributaries. It is in charge of implementing and operating the Valdesia Dam project for irrigation and power generation, and for the provision of a guaranteed water supply to the city of Santo Domingo de Guzmán. 121/ The Corporation is managed by a Board of Directors which includes a Chairman, a Vice-Chairman and one member, all appointed by the Government. 122/

The Dominican Electricity Corporation administers and operates the waterworks of the upper reaches of the Yaque del Norte, Yaque del Sur and Bao Rivers on behalf of the State.

C. At the user level

The Dominican Agrarian Institute, acting in accordance with national agrarian policy, constructs irrigation and drainage systems. It provides water and power services in the areas in which it establishes agricultural communities. 123/

According to the water law, INDRHI must gradually establish irrigation districts in different parts of the country which it will itself manage under special rules. 124/ The Water Act also provides for the setting up of associations of irrigation water users. The purpose of these associations is for the building of irrigation channels to improve the distribution and use of public waters from the source to points where the members of the association can use the water on their own lands. 125/ These associations can be set up either by a decision taken by the majority of the water users in the area, or by a decision taken by INDRHI, provided that the water users number at least 10 and the irrigable land totals at least 200 hectares or when in INDRHI's opinion it is in the interest of local agriculture to do so. 126/

The associations establish their own rules 127/ and elect an executive body, the Governing Board, in which agricultural and industrial communities may be represented. It is the Board's task, among others, to establish water distribution schedules, taking account of the needs of the different crops and ensuring that in times of water shortages water is distributed in the most suitable way.

XIV. IMPLEMENTATION OF WATER LEGISLATION

A. Juridical protection of existing rights

Fishing, power and industrial water rights are granted on a permanent basis. 128/ With respect to underground water, INDRHI is to keep a register by zone or region containing details of existing and future ground-water abstraction works. 129/ Any person affected by the construction of a new well may complain to INDRHI stating the reasons, and INDRHI may accept or reject the complaint. An appeal against the decision may be brought before the Board of Directors of INDRHI within 15 days of the date of the resolution. The Board's decision is final. 130/

B. Modification or re-allocation of water rights

Apart from the cases in which concessions are granted in perpetuity, the terms of a water use concession may be amended by the administering authority. 131/ Water Titles granted for other than fishing, power or industrial uses may be forfeited for non-compliance with the terms of the Title 132/ or if the right has not been exercised for two years. 133/

With respect to ground water, INDRHI may at any time cancel the right to use ground water for justifiable reasons. 134/

C. Water tribunals, courts and other judicial water authorities

On the subject of surface water, Justices of the Peace are competent to settle differences between members of associations of irrigation water users when the Governing Board of the association is unable to settle the matter. 135/

As regards underground water, INDRHI has the authority to start legal action for infringement of the law and regulations with respect to the construction of works to abstract underground water or to the use of such water. Relevant reports are used by the courts as evidence. 136/ Jurisdiction in these matters rests with the Justices of the Peace. 137/

D. Penalties

The legislation on underground water establishes some types of penalties, including cancellation of operating permits granted by INDRHI for non-compliance with the applicable legislation. Cancellation may be for a limited period and the Institute is empowered to lift the penalty as soon as the offender has fulfilled his obligations. 138/ Illegally erected structures may be demolished by INDRHI or an order may be given to suspend works already begun either because the law is being breached or because the work being carried out differs from that for which authorization was given, or when abstracted waters are diverted, used for other purposes or in ways which are detrimental to rivers or underground water tables. If the illegal works are not demolished within the deadline set by INDRHI, the policy may be requested to demolish the structure at the expense of the offender. 139/

Apart from the specific penalties mentioned, a fine of between \$RD 5.00 and \$RD 2,000 is set as an overall penalty for any infringement of the ground-water legislation in force, in addition to the demolition by the offender of any illegal structure, confiscation of the equipment used, or a prison sentence ranging from six days to six months. Compliance with the penalties does not entitle the offender to use the water obtained illegally. 140/

Notes

- 1/ Amended by Law No. 134, 9 June 1971, which replaces art. 70.
- 2/ Art. 12 amended by Law No. 591 of 24 June 1970.
- 3/ Water Act, art. 11.
- 4/ Ibid., art. 19.
- 5/ Ibid., art. 11.
- 6/ Ibid., art. 3.
- 7/ Ibid., art. 12.
- 8/ Ibid., art. 9.
- 9/ Ibid., arts. 17 and 18.
- 10/ Ibid., art. 20.
- 11/ Ibid., arts. 12 and 2.
- 12/ Official Gazette No. 9162 of 1 September 1969.

Notes (continued)

- 13/ Ground Water Management and Conservation Act, art. 2.
- 14/ Decree No. 8955 big, art. 2 (p).
- 15/ Water Act, art. 120.
- 16/ Ibid., art. 2.
- 17/ Ibid., art. 6.
- 18/ Ibid., art. 7.
- 19/ Ground Water Management and Conservation Act, art. 3.
- 20/ Ibid., art. 1 (5).
- 21/ Water Act, arts. 62 and 63.
- 22/ Ibid., art. 77.
- 23/ Mining Act, art. 50.
- 24/ Water Act, arts. 13 and 14.
- 25/ Ibid., arts. 3, 5, 8 and 10.
- 26/ Ibid., art. 12.
- 27/ Ground Water Act, art. 1 (6).
- 28/ Mining Act, art. 50.
- 29/ Water Act, art. 34.
- 30/ Ibid., art. 38.
- 31/ Ibid., art. 47.
- 32/ Ibid., art. 119.
- 33/ Ibid., arts. 47 and 59.
- 34/ Ibid., art. 48.
- 35/ Water Act, art. 51.
- 36/ Ibid., art. 121.
- 37/ Executive Decree No. 8955 big, art. 2 (p).
- 38/ Water Act, arts. 34 and 38.
- 39/ Ibid., arts. 49, 52, 117 and 118.

Notes (continued)

- 40/ Ibid., art. 55.
- 41/ Ibid., art. 56.
- 42/ Ibid., arts. 65 and 95 (4).
- 43/ Ibid., art. 61.
- 44/ Water Act, art. 54.
- 45/ Ibid., art. 66.
- 46/ Ibid., arts. 47 and 50.
- 47/ Ibid., art. 37.
- 48/ Ibid., art. 43.
- 49/ Ibid., art. 63.
- 50/ Ibid., art. 58.
- 51/ Ibid., art. 64.
- 52/ Ground Water Act, art. 5.
- 53/ Water Act, arts. 34 and 38.
- 54/ Ground Water Act, art. 19.
- 55/ Water Act, art. 38.
- 56/ Water Act, art. 120.
- 57/ Underground Water Act, art. 1 (5) and (6).
- 58/ The Municipalities Act.
- 59/ Ground Water Act, art. 1, chap. 6.
- 60/ Law on Agrarian Reform, art. 36.
- 61/ Ibid., art. 12.
- 62/ Water Act, art. 34.
- 63/ Law setting up the Valdenia Corporation, art. 11 (k).
- 64/ Water Act, art. 43.
- 65/ Ibid., art. 42.
- 66/ Ibid., art. 38.

Notes (continued)

- 67/ Ibid., art. 41.
- 68/ Water Act, arts. 38 and 46.
- 69/ Ibid., art. 50.
- 70/ Ibid., art. 64.
- 71/ Underground Water Act, art. 21.
- 72/ Law No. 264 of 6 March 1968.
- 73/ Underground Water Act, art. 21.
- 74/ Water Act, art. 27.
- 75/ Ibid., art. 27.
- 76/ Ibid., art. 28.
- 77/ Ibid., art. 29.
- 78/ Ibid., art. 32; and Law No. 281 of 29 June 1966, art. 3.
- 79/ Water Act, art. 103.
- 80/ Ibid., art. 104.
- 81/ Ibid., art. 105.
- 82/ Ibid., art. 45.
- 83/ Executive Decree No. 2275 of 18 May 1972 - clause I, art. 1.
- 84/ Ibid., art. 2.
- 85/ Ibid., art. 4.
- 86/ Executive Decree No. 2275, art. 6.
- 87/ Executive Decree No. 2596 of 4 September 1972.
- 88/ Underground Water Act, art. 28.
- 89/ Law No. 487, in Ground Water Management and Conservation.
- 90/ Ibid., art. 2.
- 91/ Ground Water Act, art. 23.
- 92/ Ibid., art. 4.
- 93/ Underground Water Act, art. 80.

Notes (continued)

- 94/ Ibid., arts. 9 and 16.
- 95/ Ibid., art. 7.
- 96/ Ground Water Act, art. 17.
- 97/ Ibid., art. 18.
- 98/ Law No. 264, establishing the Corporation.
- 99/ Underground Water Act, art. 21.
- 100/ Agrarian Reform Act, arts. 12 and 36.
- 101/ Law establishing the Valdesia Corporation, art. 2.
- 102/ Ibid., art. 11 (h).
- 103/ Underground Water Act, art. 11.
- 104/ Ibid., art. 12.
- 105/ Law No. 8 of 8 September 1965 and Decree No. 1142 of 28 April 1966; and Decree No. 49 of 8 September 1965.
- 106/ Executive Decree No. 1142 of 28 November 1966.
- 107/ Law No. 314 of 6 July 1964.
- 108/ See Food and Agriculture Organization of the United Nations, systematic index of International Water Resources Treaties, Declarations, Acts and Cases by Basin, Legislative Study No. 15, Rome, 1978; and idem, vol. II, Legislative Study No. 34, Rome, 1984.
- 109/ Ibid., p. 32.
- 110/ Law No. 134 of 29 April 1971 amending art. 70 of Law No. 5852 of 29 March 1962.
- 111/ Ibid., para. I (d).
- 112/ Law No. 134 of 29 April 1971 amending art. 70 of the law cited, para. I.
- 113/ Ibid., para. I (e).
- 114/ Law No. 134 of 29 April 1971 amending art. 70 of the law cited, para. III.
- 115/ Water Act, art. 30.
- 116/ Ibid., art. 32.
- 117/ Law establishing the Valdesia Corporation, art. 6 (h).
- 118/ Water Act, art. 72.

Notes (continued)

- 119/ Ibid., table 2 No. 15.
- 120/ Law establishing the Valdesia Corporation, art. 1.
- 121/ Ibid., art. 2.
- 122/ Ibid., art. 5.
- 123/ Agrarian Reform Act, arts. 12 and 36.
- 124/ Water Act, arts. 68, 69, 72 and 87.
- 125/ Ibid., art. 89.
- 126/ Water Act, art. 88.
- 127/ Ibid., art. 89.
- 128/ Water Act, arts. 37 and 43.
- 129/ Law concerning Ground Water Management and Conservation, art. 10.
- 130/ Underground Water Act, art. 20.
- 131/ Water Act, art. 63.
- 132/ Ibid., art. 58.
- 133/ Ibid., art. 64.
- 134/ Underground Water Act, art. 5.
- 135/ Water Act, art. 96.
- 136/ Law on the Ownership of Surface Waters and Distribution of Public Waters, art. 25.
- 137/ Ibid., art. 28.
- 138/ Ground Water Act, art. 23.
- 139/ Ibid., art. 14.
- 140/ Ground Water Act, art. 26.

HAITI

INTRODUCTION

The Republic of Haiti comprises the western part of the island of Santo Domingo and covers an area of 27,844 square kilometres. It is bordered on the north by the Atlantic Ocean, on the east by the Dominican Republic and on the south and west by the Caribbean Sea. Haiti is one of the most densely populated countries in Central America, with a population of 6 million inhabitants. Ruled by France since 1697, Haiti was proclaimed an independent country by General Dessalines from Haiti on 1 January 1804.

Haitian law derives largely from former colonial legislation. The Civil Code, promulgated in 1825, is a transcription of the Napoleonic Code, except for a few differences in form, not substance.

In spite of its small surface area, Haiti has an extensive coastline, stretching almost 1,210 kilometres. The country is mountainous and is traversed by many mountain chains, the summits of some rising to considerable altitudes (e.g., Mount de la Salle, 2,715 m). There are numerous plains - several are very large, such as the Plaine du Nord (2,000 square kilometres) where tropical crops are cultivated.

Although Haiti is situated in the tropical zone, the high mountains, lush forests, general topography of the country and abundant rainfall all have a favourable effect on the climate. Rainfall is above average and is fairly evenly distributed. There are two well-defined rainy seasons - one in May and the other in August-September. Rivers and streams abound as a result and most of them become seasonal torrents. The largest river in Haiti is the Artibonite, which flows for 320 kilometres, drains into a wide river basin and originates in the Dominican Republic. There are also several lagoons and numerous hot springs.

The economy of Haiti is based exclusively on agriculture. Coffee, cotton, sugar-cane, sisal, cocoa and camwood are its main crops. Stockbreeding, particularly cattle-raising, is another source of income. Deposits of gold, silver, copper and iron are known to exist, but they are not mined.

Industrial activity is restricted almost exclusively to the processing of agricultural products.

I. LEGISLATION IN FORCE

The following are the main legal enactments concerning water resources:

1. Constitution of the Republic of Haiti of 1964, amended on 14 January 1971;
2. Civil Code of 27 March 1825;
3. Rural Code of 24 May 1962, which is divided into 19 chapters or laws;
4. Act of 5 September 1952 entrusting the Department of Public Works Irrigation Service with the overall control of the water resources of the Republic;

5. Act of 20 September 1952 defining the status of the users of the irrigation and drainage systems established and controlled by the State;
6. Order of 13 March 1953 establishing cadastral survey and irrigation offices in the regions with an irrigation network or irrigation systems controlled by the Department of Public Works;
7. Organic Law of 17 March 1958 of the Department of Agriculture, Natural Resources and Rural Development;
8. Act of 19 September 1958 regarding the protection of the soil against erosion and control of forest exploitation;
9. Act of 25 November 1959 setting up a special irrigation fund consisting of a special non-budgetary account to be funded with the revenue from irrigation taxes;
10. Act of 27 August 1963 declaring the Morne l'Hôpital River Basin a "protected area";
11. Decree of 17 February 1967 setting up the National Council for Development and Planning under the direct responsibility of the President of the Republic;
12. Act of 3 September 1979 regulating public servitudes.

II. OWNERSHIP OF WATER

A. Surface water

In accordance with the general principle set out in the Constitution and in the Civil Code, the Rural Code provides that springs, rivers and other watercourses, lakes, lagoons and natural ponds form part of the public domain and cannot be appropriated. 1/

B. Underground water

The régime applicable to underground water differs considerably from that governing surface water, since ownership of the soil conveys ownership of the subsoil. Landowners may undertake works and excavate the subsoil, and extract from these excavations the products provided thereby, subject to the restrictions stemming from police and mining regulations. 2/

III. RIGHTS TO USE WATER OR WATER RIGHTS

A. Mode of acquisition

The right to use water is to a great extent controlled, as are the servitudes which any such right entails. Therefore, when a watercourse rises on privately owned land, the owner may use the whole of it for his domestic and farming needs, provided that two thirds of the water is used for the benefit of the land and that the latter is under cultivation or intended for grazing and that it is well cared

for. 3/ Furthermore, the owner of a holding which contains an entire lagoon or pond has the exclusive right to use it for the aforementioned purposes, provided that the exercise of this privilege is in no way detrimental to the breeding of fish or other aquatic animals which may be found therein. The competent authorities will terminate the right should public health requirements demand that the lagoon or pond be drained temporarily or permanently. Should this be necessary, the owner is notified not later than one month in advance. 4/ The right cannot be sold, transferred or leased under pain of being declared void. 5/

The Civil Code contains provisions that are ancillary to those already mentioned. The owner of land on which a spring occurs can use the spring as he wishes, unless the lower landowner has acquired a title to it. 6/ In case title has been acquired by way of prescription, the prescribed right is acquired only if the privilege had been enjoyed for an uninterrupted period of 20 years, dating from the time when the lower landowner undertook and completed visible works to facilitate the flow of water to his property. 7/ The owner of a spring cannot change the course of it when the spring is the source of supply for the local population. However, if the inhabitants have not acquired the right to use the water or if the right has not been forfeited on account of prescription, the owner may claim compensation, the amount of which will be fixed by experts. 8/ Another ancillary provision is the obligation of the person using water crossing his land to restore it to its normal course when it leaves his land. 9/

Alluvial deposits benefit the riparian owner except in special cases anticipated by law. The same principle applies to lands which are left dry when the water moves slowly from one bank of a river to the other. The owner of the bank that is left exposed benefits from the alluvium, and the riparian owner of the other bank cannot claim the land he has lost. This right does not apply to land abandoned by the sea as it recedes. 10/ There is no alluvium where ponds are concerned. The owner retains the land covered by the water, but he does not acquire any right to riparian lands that his water may cover when flooding occurs. 11/

Other provisions of the Civil Code make reference to the situation whereby a river sweeps away part of a property which becomes attached to another holding, in which case the owner of the part swept away by the current loses ownership thereof, although he may claim it within a period of one year. 12/ Likewise, when a river changes course and abandons its former bed, the owners of the land occupied by the new course may each, by way of compensation, take over a part of the former river bed equal in size to the part of the land they have lost. 13/

When the location of a private estate is such that it is dependent on water flowing naturally from an upper holding, the owner may not construct dams to obstruct the flow of the water, but he may erect structures to facilitate the flow of water to his estate. If the terrain is such that it is necessary to erect these structures on the upper property and if the owner of that property refuses to grant his consent, the dispute will be referred to a Justice of the Peace. Whether he consents or refuses, the owner of the upper property must endure this servitude without receiving any compensation. 14/ The Civil Code reinforces this provision by establishing that the upper riparian owner may not do anything to worsen the situation of the servient estate. 15/

A right of passage and the right to draw water is granted to the owners or occupiers of lands which adjoin other lands in which a watercourse rises or where a lagoon or pond occurs, provided that there is no closer source from which water can be obtained. 16/

Riparian owners may only use the running water which borders or crosses their property subject to the restrictions provided by the law and the regulations. 17/

The right to use the water in an irrigation system attaches to the property to which it has been assigned regardless of the changes in ownership which may occur, provided that the users fulfil certain obligations. A user may only cede his right to another user on a temporary basis, for a period not exceeding three years. The authorities in charge of the irrigation system must be informed of the transfer. 18/

When irrigation channels are established by a private individual, a group of private individuals or a company, the owners whose lands are subject to a servitude of channel cannot be refused water, nor can neighbouring landowners if they offer to contribute to upkeep, repair and improvement expenses and if the volume of water flowing through the channel is sufficient to satisfy all requests. Any unjustified refusal may result in the cancellation of the authorization granted by the competent authorities. These shall take over the management of the system or the part of the system in dispute, without any compensation to those who established it. 19/

No servitude of discharge can be imposed on a pasture or livestock enclosure while drainage works are in progress, unless the drainage pipes are underground or the pasture can be divided. In the latter case, the responsibility for and cost of fencing off the drainage canal on both sides shall be incumbent upon the person carrying out the work. 20/

The government departments in charge of administering the irrigation systems shall be the only authorities with the power to impose servitudes of abstraction, channel and passage to the lands which depend on a system of irrigation. This authority may not be delegated to a private individual or company. 21/

The owner of land through which an irrigation channel runs or on which irrigation works are carried out by the Government is not entitled to any compensation if he benefits from the said channels or works. If, however, by virtue of priority criteria, he is refused the use of the water for his land, he shall be entitled to compensation. The amount of it will be fixed by the government department concerned or, should the owner fail to agree, by a commission composed of a representative of the government department concerned, a representative of the landowner and the Chairman of the local rural council. Final recourse may be had in this matter before the Minister of Agriculture. 22/ The owner is also entitled to compensation in the event of channels or works being constructed by a private individual for the sole benefit of the land owned by the latter or other lands which are not affected by the servitude. 23/

The unjustified refusal to use the water from an irrigation system does not entitle the owner of the land subject to the relevant servitude to any compensation. 24/

When pastures and livestock enclosures exist prior to the establishment or improvement of an irrigation system, they are not subject to servitudes of channel or passage deriving therefrom, unless the channel is underground. If, however, the pasture is sufficiently large and can be split up, the servitude may be imposed by the competent authorities, provided that the latter undertake to fence off both sides of the channel. 25/

B. Water use authorizations, permits or concessions

The authorization, in writing, of the Ministry of Agriculture or another competent authority is required to establish intakes in river banks or to use temporary or permanent dams or pumps to abstract water. Written authorization is also required to construct any type of structure in the bed of a river. Authorization is granted only after the site has been visited and a survey carried out to show that the intake or diversion is in the public interest. 26/ An authorization shall not be granted when the total flow of the source is already being used in accordance with the provisions of the Rural Code. 27/ An authorization will state the conditions for use of the water by the beneficiary. It is withdrawn when it no longer complies with the above-mentioned provisions or with the conditions set by the administrative authority. 28/ A permit from the Ministry or one of the aforementioned bodies 29/ is also required for the sinking of artesian wells for agricultural or industrial purposes.

IV. ORDER OF PRIORITIES

Generally speaking, priorities of water use have not been established. Priorities have, however, been established with respect to irrigation and these will be examined below. 30/

V. LEGISLATION ON THE BENEFICIAL USES OF WATER

In addition to the provisions of the Civil and Rural Codes governing the use of water for domestic purposes and the necessities of life in general, as well as the special provisions which apply to water supply and sewerage in the townships, there are provisions governing the use of water for agricultural and fishing purposes.

A. Agricultural uses, including irrigation, livestock watering and agricultural industries

The Ministry of Agriculture is in charge of managing all irrigation systems, whether they are managed at the sole expense of the Government or with the financial contribution of the users. Furthermore, the Ministry has control over all other irrigation systems established by private individuals or companies whether for their exclusive benefit or not. 31/ The term "irrigation system" means any set of irrigation channels, with or without stonework structures, fed by a diversion from a natural watercourse or by a spring or well. 32/

Law No. V of the Rural Code - on Cultivation, Use and Conservation of the Soil - provides for the establishment of systems of irrigation and drainage, by either the central Government or the town councils or the farmers, united in a common effort. In the latter case, the local rural councils and qualified officers of the Ministry of Agriculture or some other competent government authority shall see that the necessary works and structures are carried out. 33/

Lands are assured of irrigation water according to a classification system based on an order of priorities. 34/ Lands which benefit from an irrigation system are divided into two classes: (a) those that can be irrigated on a permanent basis and (b) those that can only be irrigated temporarily. The former are the lands

which cannot be irrigated throughout the year or those which can be irrigated throughout the year only in part. 35/ The above classification is based on the following factors which are listed in order of importance:

- (a) System of farming;
- (b) Nature of the soil;
- (c) Position of the section of the main channel from where the secondary channel branches off, vis-à-vis the location of the water intake;
- (d) Location of the land with respect to the above-mentioned section of the main canal;
- (e) Rotation. 36/

Intensive farming takes priority over extensive farming. A farming system is considered intensive when the nature, quality and quantity of fertilizer applied to the soil, as well as the means of protection against erosion, insects and disease permit a large per hectare gross income. 37/ Priority is given to fertile soils over poor soils. 38/ The distance of the section of the main channel from the land which is to be irrigated will be an indication of priority. 39/ There are also factors which will be used to determine priority when lands of the same category are involved. No other criterion or principle can be used as a basis for exclusion or discrimination. 40/ Soils which are under rotation to increase productivity or for conservation purposes will be given precedence over others. 41/

When an industry and a crop or livestock farm are competing for water, precedence shall be given to the industry when this enhances the value of a farm or livestock product of the region and if the resulting expansion of the crop or livestock farm supplying the industry contributes to a more profitable use of the land. 42/

The users of an irrigation system are responsible for cleaning and weeding the secondary and tertiary channels which supply their plantations. The volumes of water to be delivered, the schedule of irrigation and other conditions needed to ensure that the water is distributed to the satisfaction of all concerned are to be defined in regulations. 43/

The government irrigation authorities are to draw up a plan of irrigated and irrigable lands and, if necessary, alter the boundaries. They may request to see the deeds of ownership, the plan of the property and the boundary demarcation document. 44/

Even before the Rural Code was promulgated, the law of 20 September 1952 defining the status of the users of irrigation and drainage systems established and managed by the Government provided that all private estates of the Republic of Haiti, in proportion to the size and quality of the land involved and the crops cultivated, would enjoy equal rights to water provided by the Government. It is the users' responsibility to establish and maintain the channels required for irrigation, install mechanical or other equipment and support the structures necessary to convey water to public channels or isolated lands. 45/ Water supplied in this way to private estates forms an integral part of the estate until an express decision to the contrary is made by the Minister of Public Works, based on a report by the Director of Irrigation and with the approval of a qualified

representative of the Ministry of Agriculture. 46/ Water from an irrigation network or system is distributed among property owners according to a timetable prepared by the cadastral survey and irrigation offices. 47/

B. Fishing

Fishing in lakes, bodies of water where there is no current, as well as in rivers and other watercourses which form part of the public domain, is free. 48/ It is prohibited, however, to dig tunnels or place plant roots in the banks, either for the purpose of fishing or to catch bait or for any other reason. 49/ Fishing is also prohibited in lakes or dams, rivers or the mouths of rivers during the spawning season. 50/ It is also prohibited to set up barriers or any type of device to obstruct the passage of fish, spawn or fry and to fish using chemicals, drugs or explosives. 51/

C. Other uses

When the two banks of a river belong to different owners, each riparian owner is entitled to remove all the natural products as well as mud, sand and stones from the half of the river adjacent to his land, provided that he does not alter the state of the water and makes sure that the water remains clean. 52/ Cleaning includes the work necessary to restore the width and depth of the river, subject to the provisions of article 462 of the Civil Code regarding alluvial deposit. 53/

VI. LEGISLATION ON HARMFUL EFFECTS OF WATER

A. Overflow and bank protection

Owners, lessees and occupiers of lands on which rivers or springs occur must plant bamboo or some other appropriate species at a distance of 5 metres to 15 metres from the bank of the river or spring, depending on the size of the watercourse. This must be done on both banks of the river and around the spring. 54/ When the land bordering the watercourse or spring is less than 15 metres wide, the owner, lessee or occupier of the adjacent land must continue the plantation at a distance of 15 metres. 55/ Species which may be planted in addition to bamboo are forest species and fruit trees. 56/

B. Soil erosion

Landowners are obligated to cultivate, farm and protect the land, particularly against erosion, as provided for by law. 57/ The Rural Code ratifies this precept of the Constitution, 58/ which is further reflected in servitudes established for a public purpose. These servitudes cannot be transferred and may only be terminated through government decree. 59/

Erosion is defined as the decay, degradation or collapse of soils caused by run-off or running water as well as by large-scale shifting of soil particles by the wind. 60/ The usual bans apply with respect to stripping or ploughing land depending on the location - in arid, semi-arid or rainy zones, and the gradient of the land. 61/ The zones mentioned above are defined according to recorded annual average rainfall figures, calculated on the basis of data collected over a minimum

period of 10 consecutive years. When such data is not available, the figures are calculated using available data and taking into consideration the type of plant cover, or on the basis of the latter alone, when pluviometric data are not available. 62/ One of the main obligations of a lessee of private land is to use the land responsibly to avoid cultivating crops which cause or favour soil erosion. 63/ Lastly, the individual who, with permission, carries out logging operations shall reforest and maintain the zone being worked and abide by the required distances with respect to springs, banks of watercourses and slopes. 64/

C. Drainage and sewerage

Drainage is considered an agricultural improvement. Therefore, every owner of land which benefits from it or which may one day benefit because of the nature, position or topography of the land, must maintain the discharge pipes which serve the plantations. 65/

The owners of the land which is close to a drainage system or which is crossed by a drainage channel, will be entitled to empty the drainage water from their land into it, provided that they keep the channels which run to their land in good condition. 66/

The State may carry out all the drainage work required for crop and livestock farming purposes or to safeguard public health interests without the consent of the landowners, subject, however, to the giving of offence notice to the latter and to the occupiers concerned. 67/ Landowners may not refuse or oppose having drainage facilities on their lands. 68/

The Ministry of Agriculture or any other competent government authority may compel a landowner to drain his land, when this is required for crop or livestock farming purposes or for public health reasons. In that case, the Government may offer the owner technical and financial aid. 69/

The owners of lands through which drains or other drainage structures run are not entitled to compensation when the lands benefit from the drainage system or when they are likely to benefit because of their topography and position vis-à-vis the channels. 70/ The owner is entitled to compensation, however, when his lands do not or cannot benefit from the drainage system. 71/

The landowners or companies wishing to carry out drainage works in a particular rural area must first obtain permission from the Ministry of Agriculture or other competent government authority. 72/ These provisions are to be supplemented by administrative regulations. 73/ Permission is also required to discharge waste water from factories and dwellings into natural watercourses and irrigation and drainage channels, for this is otherwise strictly prohibited. A request for permission must be submitted to the Ministry of Agriculture or other competent government authority. After the request has been examined, it may be refused or accepted in accordance with public health requirements and with the consent of the Ministry of Public Health. 74/

VII. LEGISLATION ON WATER USE, QUALITY AND POLLUTION CONTROL

A. Waste and misuse of water

The Ministry of Agriculture or any other competent government authority may set certain conditions to be fulfilled by the users of artesian wells to prevent the wastage of water. They may also impose limits on the number of wells that may be sunk on a property or in a rural area. 75/

B. Health preservation and pollution control

The Rural Code contains several provisions concerning the preservation of health and water pollution.

On farms where there are stabled animals, the waste of the animals must be collected together with the straw and used in the preparation of manure. The pits required for this purpose must be built of cement rubble, at a minimum distance of 30 metres from any dwelling and below the level of watercourses and wells. Its location vis-à-vis the stables must allow the urine and waste water from them to discharge into the pits. 76/ Landowners are to take steps to prevent the pollution of springs, lagoons and ponds on their lands and, if necessary, to request the help of the Government to make sure that the waters are free from pollution. 77/

It is prohibited to discharge or throw human waste into or in the vicinity of watercourses, springs, bodies of still water, dams or wells, 78/ and to accumulate piles of, or thrown into such water, manure, rubbish 79/ or the corpses of animals or bury the latter close to dwellings, wells, fountains or watering places. 80/

It is also prohibited to bathe, wash clothes or dip animals in springs and reservoirs which supply drinking water. 81/ Wells used for domestic purposes must be cleaned at least twice a year, and a certificate to this effect is issued free of charge by the local rural council. 82/

Burials are also prohibited within the catchment area of springs or at a distance of less than one kilometre from a natural or man-made watercourse. 83/ Similarly, within areas designated jointly by the Ministries of Agriculture and Public Works for the protection of the catchment area of watercourses, it is prohibited to construct dwellings, lavatories, cowsheds, stables or cemeteries. 84/ Pools of water and standing water must be drained or filled in by the owner or occupier of the land on which they occur. 85/ Utensils or other articles which can retain water and become a suitable breeding ground for mosquitoes must be destroyed and buried. 86/

VIII. LEGISLATION ON GROUND WATER

A prior authorization is not required for the use of ground water. However, the written permission of the Ministry of Agriculture or other competent government body is required to drill an artesian well for agricultural or industrial purposes. 87/ In addition, wells cannot be sunk at a distance of less than three feet from a neighbour's wall so as not to inconvenience him. 88/ No reference is made to drilling, exploration or exploitation licences. The government departments in charge of the irrigation systems are allowed to drill wells on privately owned land without paying compensation, provided that the land also benefits from the works.

The Ministry of Agriculture or any other competent government authority may impose on the users of artesian wells conditions aimed at preventing water waste. They may also impose limits on the number of wells which may be sunk in a rural area. 89/ Likewise, any person having drilled a well prior to the enactment of the Rural Code must submit to the competent department of the Ministry of Agriculture or any other qualified government authority a statement providing all the information that the above-mentioned department or authority may require. 90/

IX. LEGISLATION ON THE CONTROL AND PROTECTION OF WATERWORKS AND STRUCTURES

The Ministry of Agriculture is responsible for all irrigation systems, whether they are paid for entirely out of government funds or receive financial assistance from the users. 91/ The Ministry of Agriculture also controls all other irrigation systems set up by private individuals and companies, whether they are for the sole use of the latter or not. 92/ Likewise, in accordance with the organic law of the Ministry of Agriculture, Natural Resources and Rural Development, the duties of the Natural Resources Directorate of the Ministry include the management of all existing irrigation and drainage systems, as well as the preparation of studies to improve such systems and establish new networks. 93/ The Directorate is also responsible for waterworks. The users of the irrigation systems whose lands benefit therefrom are responsible for cleaning and weeding the secondary and tertiary channels. However, expenses incurred in upkeeping, repairing and improving the main channels are borne by the Government. 94/

Maintenance of the drainage channels is carried out by the landowners who benefit therefrom or whose plantations may benefit from the drainage systems by virtue of the nature, position or topography of the land. 95/ The landowners are under an obligation to maintain the channels feeding their lands, whether they are situated close to a system of drainage or are crossed by a channel in which drainage water from their lands flows. 96/ Furthermore, the lessee shall bear the cost of cleaning the wells unless there is a clause to the contrary.

X. LEGISLATION ON THE DECLARATION OF PROTECTED ZONES OR AREAS

A. In the case of beneficial uses of water

The Rural Code provides that a forest area which protects the catchment areas of byways, mountain ridges and slopes of gradients exceeding 60° shall be declared a protected zone. Should these catchment areas, mountain ridges and slopes be either totally or partly deprived of vegetation, they shall be declared reserved zones and if State-owned, they shall be placed under the management of the Ministry of Agriculture or other competent government authority. 97/ Owners of lands which fall within these reserved zones may be expropriated upon payment of just compensation. 98/ Should the greater part of, or the entire, reserved zone be privately owned, the owners or their trustees or representatives are to reforest the property and manage it according to a plan drawn up by the Ministry of Agriculture or other competent government authority. 99/

B. In the case of harmful effects of water

The Morne l'Hôpital river basin has been designated a "protected zone". A large number of springs supplying drinking water to the country's capital, Port au Prince, rise in the Morne l'Hôpital river basin. Devastating floods from this river basin have caused serious damage to the city. In view of the accelerating rate of erosion throughout the area, it was considered vital for the protection of lives and property in the capital city that all farming and industrial activity requiring the working of the land in the Morne l'Hôpital river basin should cease. For that reason, the law prohibits the following activities in the protected zone: the rearing of cattle, goat, pig or sheep, the felling of timber or cutting of firewood, the extraction of sand, gravel, rocks and stone quarries for building purposes, the operation of lime-kilns or the cultivation of crops that require prior clearing, such as millet, maize, cassava or sweet potato. 100/

XI. GOVERNMENT WATER RESOURCES INSTITUTIONS AND ADMINISTRATION

A. At the national level

The administration of water resources at the national level also occurs at the district or township level. The principal authority for water resources management, however, is the Ministry of Agriculture, Natural Resources and Rural Development. The Ministry is in charge of all operations designed to improve agriculture, the conservation and utilization of natural resources and the organization of rural communities. 101/ The following are the main duties and obligations of the Ministry's Natural Resources Directorate:

- (a) To ensure the conservation and wise use of all natural resources, such as water, soil, forests and wildlife;
- (b) To control the exploitation of non-renewable natural resources (mines, quarries and the like);
- (c) To ensure river control by taking steps to protect the river basins and implementing all the necessary works;
- (d) To manage all the existing irrigation and drainage systems and to prepare studies with a view to improving the latter and establishing new networks;
- (e) To take steps towards soil conservation by controlling erosion on sloping ground;
- (f) To develop fisheries and the like. 102/

The Natural Resources Directorate is composed of the following divisions:

- (a) Soil and forest conservation and wildlife protection;
- (b) Water distribution, irrigation channel maintenance and river control;
- (c) Hydrography, hydrology and meteorology;
- (d) Geology and mines;

(e) Agricultural chemistry and the use of lands;

(f) Fisheries. 103/

Before the Organic Law of the Ministry of Agriculture, Natural Resources and Rural Development was passed, control of water resources rested with the Irrigation Division of the Ministry of Public Works, in accordance with the law of 5 September 1952. 104/ When the Irrigation Division was transferred to the Ministry of Agriculture, Natural Resources and Rural Development, that Ministry took over the former functions and attributions of the Ministry of Public Works. The duties of the Natural Resources Directorate now include the carrying out of studies on irrigation and drainage projects or recommending that such studies be carried out. 105/ They also include the granting of permission to private landowners to establish irrigation systems or build irrigation works. The works are implemented under the control of the Directorate mentioned above. The law reserves to the Directorate the right to carry out small irrigation works which do not call for any particular study or large works and structures on areas not exceeding 50 hectares. 106/

Finally, it is the responsibility of the Ministry of Agriculture or other competent government authority to authorize the discharge of sewage from industrial plants and dwelling houses into natural watercourses and irrigation and drainage channels. 107/

The National Council for Development and Planning is responsible for formulating the nation's overall economic and social development policy. The Council's role is also to guide, encourage and intensify economic and social planning work, and to guide the planning efforts of public and private institutions. 108/

B. At the regional level

Cadastral surveys and irrigation offices are located in the regions in which there are government-managed irrigation networks or services. Under the supervision of the Director of the Irrigation Division, these offices are especially concerned with the registration of irrigated lands, as well as with the management and operation of irrigation and drainage systems. 109/ According to the provisions of article 7 of the law of 20 September 1952, 110/ the Director of the Irrigation Division or his representative must ensure that privately owned lands enjoy the right to use irrigation water supplied by the Government, in proportion to the land area owned. 111/ The cadastral survey and irrigation offices, under the supervision of the Director of the Irrigation Division, set the schedules for distributing water from an irrigation network or system among the various private landowners. These schedules come into force once they are approved by the Minister. 112/

C. At local or user level

For each irrigation system, a local committee composed of a representative of the Ministry of Agriculture, a representative of the Ministry of Public Works and from three to five representatives of the users is set up. The role of the Committee is to make suggestions and comments to the competent government authority to ensure the efficient operation of the system. 113/ Local rural councils

encourage the establishment of agricultural co-operatives, which can also serve as electricity and water co-operatives. 114/

The watercourses and irrigation systems are inspected by officers appointed by the Ministry of Agriculture. 115/ In some cases, there may be two representatives per rural area. The officers report monthly to the agricultural officer on offences under the Rural Code, on the state of the irrigation systems and how they may be improved, and on the details of inspections undertaken. The officers carry out at least one inspection per week, 116/ and during their rounds must be granted access to the private lands through which the watercourses and irrigation systems flow. Where possible, they should be accompanied by the owner or occupier of the lands or their representatives. 117/

One of the duties of the rural guards, trustees and forest guards is to report violations of the Rural Code and relevant regulations to the agricultural officer or any other representative of the Ministry of Agriculture. 118/

XII. LEGISLATION ON THE ECONOMIC AND FINANCIAL ASPECTS OF WATER RESOURCES

A. Government financial participation

The Natural Resources Directorate of the Ministry of Agriculture, Natural Resources and Rural Development through its various divisions 119/ is responsible for determining the Government's financial participation. The Director-General of the Irrigation Division is in charge of drawing up the programme of works to be implemented each financial year and decides on the priority to be accorded to each project. 120/ Once the projects have been approved by the responsible Minister, the costs of implementing them 121/ are charged to the Special Irrigation Fund. The Special Irrigation Fund, set up by the law of 25 November 1959, is replenished with the reserve from water rates. The capital is used exclusively for maintaining and constructing irrigation channels, drilling wells, installing and operating irrigation pumps, constructing dams, and cleaning and repairing irrigation channels. 122/

When the Ministry of Agriculture or other competent government authority considers it necessary for certain lands to be drained for either crop or livestock purposes or for public health reasons and compels the landowners to drain their lands, the landowners concerned are provided technical and financial assistance by the Government. 123/

The landowner through whose land an irrigation channel flows, or on whose land irrigation works are carried out by the Government, is entitled to compensation if he is not permitted to use the water for the benefit of his land. The amount to be paid is decided jointly by the owner and the government department concerned and, if they fail to reach an agreement, by a commission composed of a representative of the owner, a representative of the Government and the chairman of the village council. Should they fail to reach an agreement, the matter is submitted to the Minister of Agriculture. 124/

Landowners through whose lands drain or other drainage works pass are also entitled to compensation when they do not or cannot benefit from the drainage system, 125/ because of the topography or the position of the lands vis-à-vis the channels. In such cases, the amount to be paid is determined as stated above. 126/

B. Rates and taxes

All privately owned lands that benefit from irrigation water controlled and distributed by the Government are liable to an annual tax calculated on the basis of the area under cultivation and the quantity of water supplied. 127/ Proceeds from the irrigation taxes are deposited in a special, non-budgetary account, the Special Irrigation Fund. 128/ The taxes, which are calculated on the basis of the number of litres supplied per second and per hectare, range between G6 and G75. 129/* Landowners who use water from a government-controlled irrigation system to drive their equipment, pay G35 per annum for every machine or mechanical item or any other type of equipment which develops up to 7 horsepower, plus a further G5 for each additional unit of horsepower. 130/ Rm producers and users of water for cooling purposes are also liable to taxes. 131/

In order to calculate the irrigation taxes, the land area of each holding must be determined as accurately as possible. The irrigation and cadastral survey offices are, therefore, authorized to request the landowners concerned to provide deeds of ownership, plans and boundary demarcation documents. After having informed the interested parties, the surveyors of the above offices may undertake a survey of the properties located in an irrigation area placed under the control of the Irrigation Division.

XIII. WATER LAW IMPLEMENTATION

All government authorities concerned with water, particularly the Ministry of Agriculture, Natural Resources and Rural Development, are responsible for implementing the water laws. Disputes involving substantive water law matters are dealt with by local courts (Justices of the Peace), which have authority to impose the penalties provided for by the law.

It is an offence under the law for any user to divert, without permission, water supplied to him for use on his land, or to use it for other purposes; for any user to divert, without permission from a qualified representative of the Irrigation Division, the waters of an irrigation or drainage channel; for any person to damage an irrigation channel or the ancillary structures. 132/ The Rural Code provides specific offences and penalties. Relevant charges are brought by qualified representatives of the Ministry of Agriculture, rural guards, trustees, forest guards or rural police officers. Penalties consist of fines ranging between G5 and G200, and prison terms of between one day and one month. In the case of a second conviction, the penalties are doubled, the maximum penalty is applied or both penalties are applied simultaneously. In addition, damages must be recovered. Payment of a fine does not exempt the offender from recovering the damage done. Appeals against convictions under the Rural Code result in the staying of execution only in cases where imprisonment is involved. 133/

The Rural Code further penalizes rural guards, trustees or forest guards who, for no legitimate reason, fail to carry out their inspection rounds. They are first suspended from office and, in case of a relapse, they are relieved of their duties. 134/

* 1 gourde = \$US 0.20 as at August 1984.

Notes

- 1/ Rural Code, art. 131. See also art. 22 of the Constitution, and art. 443 of the Civil Code.
- 2/ Civil Code, art. 457.
- 3/ Rural Code - Law No. VII, art. 132.
- 4/ Ibid., art. 133.
- 5/ Ibid., art. 136.
- 6/ Civil Code, art. 519.
- 7/ Ibid., art. 520.
- 8/ Ibid., art. 521.
- 9/ Ibid., art. 522.
- 10/ Civil Code, art. 462.
- 11/ Ibid., art. 463.
- 12/ Ibid., art. 464.
- 13/ Ibid., art. 465.
- 14/ Rural Code, Law No. IV, art. 36.
- 15/ Civil Code, art. 518, last paragraph.
- 16/ Rural Code, Law No. VII, art. 131.
- 17/ Ibid., art. 141.
- 18/ Rural Code, Law No. VII, art. 162.
- 19/ Ibid., art. 171.
- 20/ Ibid., art. 179.
- 21/ Ibid., art. 166.
- 22/ Ibid., art. 167.
- 23/ Ibid., art. 168.
- 24/ Ibid., art. 169.
- 25/ Rural Code, Law No. VII, art. 170.
- 26/ Ibid., art. 137.

Notes (continued)

27/ Ibid., art. 138.

28/ Ibid., art. 139.

29/ Ibid., art. 147.

30/ See sect. V.C below.

31/ Rural Code, Law No. VII, art. 152.

32/ Ibid., art. 151.

33/ Rural Code, Law No. V, art. 55.

34/ Rural Code, Law No. VII, art. 153.

35/ Ibid., art. 154.

36/ Ibid., art. 155.

37/ Rural Code, Law No. VII, art. 156.

38/ Ibid., art. 157.

39/ Ibid., art. 158.

40/ Ibid., art. 159.

41/ Ibid., art. 160.

42/ Ibid., art. 161.

43/ Ibid., art. 164.

44/ Rural Code, Law No. VII, art. 165.

45/ Law cited, art. 7.

46/ Order establishing cadastral survey and irrigation offices in regions which have an irrigation network or system managed by the Ministry of Public Works, art. 5.

47/ Ibid., art. 4. See sect. XI.B below.

48/ Rural Code, Law No. IX, art. 212.

49/ Ibid., art. 213.

50/ Ibid., art. 214.

51/ Ibid., art. 215.

52/ Rural Code, Law No. VII, art. 142.

Notes (continued)

- 53/ Ibid., art. 143. See sect. III.A above.
- 54/ Rural Code, Law No. V, art. 76.
- 55/ Ibid., art. 77.
- 56/ Ibid., art. 78.
- 57/ Constitution, art. 22.
- 58/ Rural Code, Law No. IV, art. 21.
- 59/ Law of 3 September 1979 governing the exercise of Public Servitudes, arts. 6 (c), 10 and 12.
- 60/ Civil Code, Law No. V, art. 62.
- 61/ Rural Code, Law No. V, art. 63.
- 62/ Ibid., art. 64.
- 63/ Rural Code, Law No. XIV, art. 284.
- 64/ Law concerning the protection of the soil against erosion, determining zonal expansion and governing forest exploitation in Haiti, art. 3.
- 65/ Rural Code, Law No. VII, art. 180.
- 66/ Ibid., art. 181.
- 67/ Rural Code, Law No. VII, art. 172.
- 68/ Ibid., art. 173.
- 69/ Ibid., art. 174.
- 70/ Ibid., art. 175.
- 71/ Ibid., art. 176. See sect. III.A above.
- 72/ Rural Code, Law No. VII, art. 177.
- 73/ Rural Code, Law No. VII, art. 178.
- 74/ Ibid., art. 140.
- 75/ Ibid., art. 148.
- 76/ Rural Code, Law No. V, art. 74.
- 77/ Ibid., Law No. VII, art. 135.
- 78/ Rural Code, Law No. XV, art. 297.

Notes (continued)

- 79/ Ibid., art. 298.
- 80/ Rural Code, Law No. XV, art. 299.
- 81/ Ibid., art. 302.
- 82/ Ibid., art. 304.
- 83/ Ibid., art. 305.
- 84/ Rural Code, Law No. VII, art. 146.
- 85/ Rural Code, Law No. XV, art. 306.
- 86/ Ibid., art. 307.
- 87/ Rural Code, Law No. VII, art. 147.
- 88/ Civil Code, art. 543.
- 89/ Rural Code, Law No. VII, art. 148.
- 90/ Ibid., art. 150.
- 91/ See sect. V.A above.
- 92/ Rural Code, Law No. VII, art. 152.
- 93/ Law as mentioned, art. 2.
- 94/ Rural Code, Law No. VII, art. 163.
- 95/ Ibid., art. 180.
- 96/ Ibid., art. 182.
- 97/ Rural Code, Law No. VIII, art. 184.
- 98/ Ibid., art. 185.
- 99/ Ibid., art. 186.
- 100/ Law declaring the Morne l'Hôpital river basin a protected zone, art. 3.
- 101/ Organic Law of the Ministry of Agriculture, Natural Resources and Rural Development, art. 1.
- 102/ Ibid., art. 9.
- 103/ Organic Law of the Ministry of Agriculture, Natural Resources and Rural Development, art. 10.
- 104/ Act granting control of all the water resources of the Republic to the Irrigation Department of the Ministry of Public Works, art. 2.

Notes (continued)

105/ Ibid., arts. 3 and 4.

106/ Law granting control of all the water resources of the Republic to the Irrigation Department of the Ministry of Public Works, art. 5.

107/ Rural Code, Law No. VII, art. 140.

108/ Decree establishing a permanent and independent body - called the National Council for Development and Planning - under the direct control of the President-for-life, art. 3.

109/ Order establishing cadastral survey and irrigation offices in regions possessing an irrigation network or irrigation systems managed by the Ministry of Public Works, art. 2.

110/ Order establishing cadastral survey and irrigation offices in regions possessing an irrigation network or irrigation systems managed by the Ministry of Public Works, art. 5.

111/ Ibid., art. 3.

112/ Ibid., art. 4.

113/ Law granting control of all the water resources of the Republic to the Ministry of Public Works, art. 7.

114/ Rural Code, Law No. V, art. 81.

115/ Rural Code, Law No. XVIII, art. 338.

116/ Ibid., art. 339.

117/ Ibid., art. 340.

118/ Ibid., art. 342.

119/ See sect. XI.A above.

120/ Decree authorizing the Ministry of Agriculture, Natural Resources and Rural Development to bear the cost of construction and maintenance studies for irrigation systems, art. 1.

121/ Ibid., art. 3.

122/ Law establishing the Special Fund, supplied through proceeds from irrigation rates, constituting a special, non-budgetary account, art. 4.

123/ Rural Code, Law No. VI, art. 174.

124/ Rural Code, Law No. VII, art. 167.

125/ Ibid., art. 175.

Notes (continued)

126/ Ibid., art. 176.

127/ Law establishing the status of the users of irrigation and drainage systems established and controlled by the State, art. 2.

128/ Law establishing the Special Fund, supplied from income from irrigation rates, which shall be considered a special, non-budgetary account, art. 1.

129/ Law establishing the Special Fund, supplied through proceeds from irrigation rates, constituting a special, non-budgetary account, art. 2.

130/ Ibid., art. 3.

131/ Law establishing the status of the users of irrigation and drainage systems established and controlled by the State, art. 5.

132/ Order establishing irrigation and cadastral survey offices in regions in which there is an irrigation network or irrigation systems managed by the Ministry of Public Works, art. 8.

133/ Rural Code, Law No. XIX, arts. 348 to 400.

134/ Rural Code, Law No. XVIII, art. 344.

JAMAICA

INTRODUCTION

Jamaica forms part of the Greater Antilles and is the third largest of these islands. The land area of Jamaica is 11,450 square kilometres. At the end of 1982, the population was estimated at 2,265,000 inhabitants.

Jamaica was discovered by Columbus during his second voyage on 5 May 1493, and the island was christened Santiago. It was held by the United Kingdom of Great Britain and Northern Ireland from 1655 until 1962, when it achieved independence.

Jamaica formed part of the Federation of the West Indies, together with Barbados, Trinidad and the Leeward and Windward Islands, but it seceded following a referendum in 1961.

In accordance with its Constitution, the Governor-General of Jamaica is appointed by the Queen. The Senate, or Upper House, is composed of 21 nominated members, 13 of whom are appointed by the Governor-General upon the recommendation of the Prime Minister and the remaining 8 upon the recommendation of the Head of the Opposition. The House of Representatives is composed of 60 members and is elected, at least once every five years, by universal suffrage. The Prime Minister is appointed by the Governor-General, who selects the person most likely to obtain a majority support of the House of Representatives.

Justice is administered by the Supreme Court, the resident magistrates' courts, the circuit court and the justices of the peace. There is also a Court of Appeal.

The north coast of Jamaica is rugged and steep, and the south coast is indented and surrounded by dangerous reefs, in spite of which there are many good ports. The interior of the island consists of picturesque hills, and in the Blue Mountains, which is covered with forests, Blue Mountain Peak rises to an altitude of 2,243 metres. There are numerous rivers, but Black River, in the south-west, is the only one that is navigable by small boats.

The climate is tropical and uniform. There is no real dry season in Jamaica, but the rainiest months are from May to October and the less rainy, from January to April. The average precipitation is 930 millimetres in Kingston and 2,300 millimetres on the north-east coast. Devastating hurricanes occur less frequently in Jamaica than in the other West Indian islands.

The economy of Jamaica is basically agricultural, and agriculture absorbs 40 per cent of the country's labour force. The two most important export crops are banana and sugar, followed by coffee, cocoa, pepper, ginger and citrus. Through the Agricultural Development Corporation and the Agricultural Marketing Corporation, the Government provides instructions in agriculture as well as economic aid and guaranteed markets for farmers. Since 1959, there has been an increase in manufacturing, ranging from the processing of a few agricultural products to the production of a number of articles from both local and foreign raw materials.

I. LEGISLATION IN FORCE

Jamaican water law consists of English common law and an overlay of statutes. The statute law comprises numerous acts designed for specific purposes, but is not in any sense a water code. Thus, the common law subsists wherever particular legislation has not replaced it.

The following statutes and subsidiary regulations have been reviewed for the purposes of the present study as they appear, except where otherwise stated, in the Laws of Jamaica (1973 edition, periodically updated) and in the Laws of Jamaica, Subsidiary Legislation (1974 edition, also periodically updated):

A. Statutes

1. Bath of St. Thomas the Apostle Act;
2. Black River (Upper Morass) Reclamation Act;
3. Forest Act;
4. Flood Water Control Act;
5. Housing Act;
6. Irrigation Act;
7. Kingston and St. Andrew Building Act;
8. Kingston and St. Andrew Water Supply Act;
9. Kingston Improvements Act;
10. Land Authorities Act;
11. Local Improvements (Community Amenities) Act;
12. Malicious Injuries to Property Act;
13. Milk River Bath Act;
14. Mining Act;
15. National Water Commission Act;
16. Parish Councils Building Act;
17. Parishes Water Supply Act;
18. Parochial Water Works Charges Act;
19. Petroleum Act;
20. Planning Institute of Jamaica Act, 1984 (No. 2);

21. Public Health Act, 1974 (No. 47); 1/
22. Quarries Control Act, 1983 (No. 16);
23. River Rafting Act;
24. Roads Protection Act;
25. Town and Country Planning Act;
26. Underground Water Control Act;
27. Water Act;
28. Water Supply Act;
29. Watersheds Protection Act;
30. Wild Life Protection Act.

B. Subsidiary legislation

1. Factories Regulations, 1961;
2. Kingston and St. Andrew Improvements (Construction and Use of Sewers) Regulations, 1963;
3. Kingston and St. Andrew Water Commission (Sewage Treatment Plants) (Construction) Regulations, 1979 (Jamaica Gazette, Supplement, 21 September 1979, No. 55B);
4. Rio Cobre Canal Regulations, 1940 (omitted from the Laws of Jamaica - Subsidiary Legislation);
5. Underground Water Control (Abstractions) Regulations, 1961;
6. Underground Water Control (Licensing) Regulations, 1961;
7. Water (Non-riparian Use) Regulations, 1949.

II. OWNERSHIP OF WATERS

A. Surface waters

Under current legislation, surface waters can be either (a) public and be vested in the Crown 2/ or (b) private and be subject to the exclusive use rights of the owners of riparian land. 3/ Determining what kinds of water belong to which category is a formidable exercise in view of the threefold statutory distinction between "public streams", "public water" and "private water". Public streams under the Water Act are natural streams of water which (a) flow in a well-defined channel, whether perennial or seasonal, and (b) are susceptible to use by the owners of riparian land. The Act states that a stream which fulfils the above requirements with respect to only part of its course is accordingly public only in part. 4/ There can be streams which are public for part of their course and

"non-public" for other parts for failure to meet one or the other standard. The Act provides for the authoritative determination of the public or non-public character of a stream by the Water Courts acting on a specific request of the Minister responsible for water resources. 5/ The "public streams" category further includes the "stream of water" flowing in a permanent flood-water channel or course in which flood-water control projects have been carried out under the Flood-Water Control Act. 6/ Under the Water Act, "public water" includes all the water which flows in a public stream, excluding storm water, the latter being water flowing in excess of the normal, or average, flow. 7/ The seeming implication of the above definition is that in a public stream there can flow public and non-public water - the latter not to be confused with private water, for private water cannot, by definition, be water flowing in a public stream. "Private" water includes, under the Water Act, water which rises naturally on the land or which falls or drains naturally on to it, so long only as it remains on that land and does not join a public stream. 8/ The statutory definition of private waters corresponds to the category of waters known in water law as "diffused" surface waters, and to springs.

B. Underground waters

Since the definition of "public streams" under the Water Act does not exclude a priori streams flowing underground, it can be argued that underground waters which flow in a known and defined channel have public status and vest in the Crown. 9/ Other ground waters, such as percolating ground waters, or underground aquifers, are subject in principle to the unrestricted right of enjoyment which accrues at common law to the owner of the land. This principle, however, as will be seen shortly, has been entirely overridden by intervening statutory regulations.

III. RIGHT TO USE WATERS

A basic distinction is made under Jamaican statutory law between (a) the right to use private waters, which accrues from ownership of land, and is free from government controls; and (b) the right to use public waters, which also basically accrues from ownership of riparian land, but which is subject to government regulation at the same time. Separate regulations govern the use of all underground waters, irrespective of their ownership status. Water rights may also be granted directly by statute to special purpose bodies or as an incident of regulated activities.

A. Right to use public waters

Under the Water Act (a) domestic, drinking and "ordinary" livestock-watering uses of public water are permitted by statute to anyone who has legal access to the source; 10/ whereas (b) all other uses of public waters by the owners of land riparian to the source are subject to an "authorization" from the Minister responsible for water resources, whether the water is used in connection with riparian or non-riparian land. 11/ The holders of water rights under the Act may claim a number of specific servitudes instrumental to the enjoyment of their rights, in the manner provided for in the Act. A right to the use of public water may also accrue by virtue of a right held prior to the enactment of the Water Act, provided such right has been actually used. 12/ These senior rights, and the water rights granted under the Water Act, are forfeited if not used for three years in a row. 13/ It is worth noting that this is the only cause of loss of a water right under the Water Act.

The right to use public water for mining and petroleum exploration and exploitation purposes is subject to separate regulations, which are administered by the Ministry of Mining and Energy. Under the Mining Act, and subject to the exceptions which will be reviewed in subsection D below, the use of public water for mining purposes is subject to the grant of a corresponding right by the above-mentioned Minister and to the terms and conditions specified in the grant. 14/ Specific procedural requirements call for the giving of public notice of an application and the hearing of objections, if any. 15/ A water right is to be valid for the duration of the mining lease 16/ and can be varied at the request of the holder or by the authority of the Minister. 17/ Water rights are revocable by the Minister on specific grounds 18/ and are transferable subject to the Minister's approval. 19/

Comparable provisions apply with respect to the grant of water rights for petroleum exploration and exploitation purposes. 20/

B. Right to use private waters

The owner of the land on which private waters occur has, by statute, the sole and exclusive rights of enjoyment and use of the water. 21/ The statutory provision is consistent with common law rules applicable with respect to the water categories known as "diffused" surface water, and to springs. 22/ Water rights, like other property interests, may be sold or otherwise transferred together with or separately from the land, and they may be acquired by way of prescription. 23/

C. Right to use underground waters

By virtue of the extension of the "critical area" provisions of the Underground Water Control Act to the entire island, 24/ all abstractions of ground water anywhere in Jamaica are subject to licensing requirements, regardless of whether the water vests in the Crown or not under the Water Act. 25/ The abstraction of ground water solely for domestic consumption, however, is exempted from the licensing requirements 26/ and is free. Regulations in force contain procedural provisions calling for (a) the giving of public notice of an application for a licence, and (b) the making of objections thereon. 27/

D. Statutory grant of water rights

There are various instances in Jamaican legislation in which water rights are granted directly by statute, as opposed to the grant by a discretionary act of the government authority. Statutory water rights are granted to special-purpose public bodies or as an incident of a regulated activity.

A foremost example of the former category is the grant of exclusive rights in the waters of the Ferry, Iron, Plantain and Ginger Rivers and tributaries, and of the Waq Water River, to the National Water Commission for the supply of water to the parishes of Kingston and St. Andrew. 28/ A most noteworthy feature of the grant is that it covers all the water of the designated rivers and tributaries the Commission may need. 29/ Withdrawals from the Iron, Plantain and Ginger Rivers, however, may not exceed a fixed amount during the dry months of the year. 30/ The grant therefore amounts to a virtual reservation of all the waters of the Ferry River and its tributaries, and of the Waq Water River, all year round, and of the

waters of the other three rivers and their tributaries during the wet months of the year, for public water supply purposes, to the potential exclusion of any incompatible or competing use.

Another important example of a statutory grant of water rights to special-purpose bodies is offered by the Irrigation Act. The Irrigation Authorities, which are to manage irrigation water under government-approved irrigation projects, are granted by the Act the right to divert and distribute ground water and public water for the purposes and subject to the limitations of such projects. 31/ A ministerial authorization given to Parish Councils to construct and manage water supply works under the Parishes Water Supply Act also seemingly conveys the implicit grant of a right to take water from rivers for the above purposes. 32/

The mining legislation in force provides for the statutory grant of water rights as an incident of regulated mining activities. The grant of a prospecting right under the Mining Act conveys a right in the public waters available for the pursuit of the prospecting activities. However, should such rights interfere with other existing water rights, the former must give way and accommodate the latter. 33/ Similarly, the grant of a mining lease conveys a right in the public waters which flow on the land comprised in the lease. Pre-existing water rights, however, must not be disturbed. In addition, the water must be returned to its natural course after use. 34/

IV. ORDER OF PRIORITIES

Under the Water Act, various uses of public water are classified as "primary", "secondary" or "tertiary" for the purposes of regulating competition among the claims of riparian landowners. "Primary" uses of public water include domestic use, drinking and the watering of animals. 35/ Such uses must not be impaired by secondary or tertiary uses made by other riparians. 36/ "Secondary" uses include irrigation and use for the raising of cattle. 37/ These uses must not interfere with primary uses, 38/ but they take precedence over tertiary uses. 39/ The latter include industrial uses, use for mechanical purposes 40/ and, arguably, for hydropower generation. 41/

The Water Act further seemingly endorses a tentative preference for non-riparian use of public water in the watershed of origin of the water over non-riparian use of the same water in another watershed. 42/

In addition, the statutory grant of rights in virtually all the waters of the Ferry, Iron, Plantain, Ginger and Wag Water Rivers made to the National Water Commission for the supply of water to the parishes of Kingston and St. Andrew 43/ implicitly gives absolute priority to the use of the waters of the above-mentioned rivers for public water supply purposes in contrast to all other uses.

V. LEGISLATION ON BENEFICIAL USES OF WATER

A. Domestic and household consumption

Domestic and household consumption of public water and of ground water is free from regulation under the Water Act 44/ and the Underground Water Control Act, 45/ respectively. However, the withdrawal of water from the Rio Cobre Irrigation Works for domestic use is subject to a permit from the managing government authority. 46/

B. Public supply

1. Provision and regulation of the service

As a result of the merger of the Kingston and St. Andrew Water Commission with the National Water Authority, the responsibility for the provision of public water supply services has since been consolidated in the National Water Commission and has been given island-wide scope. 47/ At the local level, Parish Councils may continue to provide water supply services to the public under ministerial authorization. 48/ The Minister, however, has authority to consolidate the water supply services provided by Parish Councils, 49/ and the National Water Commission has stand-by authority to take over the water supply works of Parish Councils. 50/

The unauthorized taking of water from the mains of the National Water Commission or from those of Parish Councils constitutes an offence. 51/ The sale of water supplied by the National Water Commission, and the supply of water from any source by any person or concern other than the Commission in the latter's area of operation, are restricted and a licence from the Commission is required. 52/

2. Planning aspects

The public water supply works come within the regulatory purview of the Town and Country Planning Act. Under the Act, the government-approved land development plans, which are to guide and regulate the development of land in designated areas, may make provisions "facilitating the establishment, extension or improvement" of, among others, works for the provision of water supplies to the public. 53/ The inclusion of provisions for such works in an approved land development plan would have the effect of barring all land development at variance with the provisions made in the plan. It should be noted, in this connection, that the actual or foreseeable inadequacy of, among others, water supply services in the area covered by an approved development order can be cause for the refusal or conditional grant of permission to develop land under the Act. 54/

When as a result of, among others, disregard for or lack of land development regulatory controls, the water supply service to residential development areas is found by the Minister responsible for housing to be inadequate, ad hoc schemes can be adopted by that Minister with a view to remedying the inadequacy of the service. Prior consultation with, among others, the national Water Commission is required in the process leading to approval of remedial schemes. 55/ The local Parish Council or the Kingston and St. Andrew Corporation must be consulted with respect to, among others, the provision of public water supply services, within the framework of the process of approval of housing, slum clearance or improvement schemes envisaged by the Housing Act. 56/

C. Agricultural use

Under the Water Act, riparian landowners are free to take public water to satisfy their farming needs other than irrigation and for the watering of a "reasonable" number of animals. A ministerial authorization is required instead for the use of public water for irrigation, and for the watering of livestock, on riparian land. 57/ All agricultural use of any amount of public water on non-riparian land is seemingly subject to a ministerial authorization. 58/

Within the limits of areas designated as "irrigation areas" under the Irrigation Act, withdrawals of water from irrigation works are subject to ad hoc regulations made by the local Irrigation Authorities and escape the regulatory provisions of the Water Act. 59/ Under the special regulations in effect with respect to the Rio Cobre Irrigation Works, water withdrawals for irrigation purposes are restricted in quantity according to the specific crops under cultivation. 60/ In addition, the managing government authority may arrange for the delivery of irrigation water from the works at fixed periods as opposed to providing a constant supply. 61/

D. Fishing

Inland waters fishing is regulated by the Wild Life Protection Act. The Act provides for the establishment of seasons and catch limits by regulation, 62/ prohibits certain methods of killing fish 63/ and prohibits allowing "trade effluent or industrial waste" into water containing fish. 64/

E. Hydropower generation

The Water Act provides that the responsible Minister may authorize the use of public water for the generation of power. 65/

F. Mining and quarrying

The Mining Act grants a statutory water right to mining prospectors. 66/ The holder of a prospecting permit is limited to an amount of public water that will satisfy his domestic needs and allow him to test the mineral characteristics of the land. He may not interfere with other users of the water. The holder of a mining lease has a statutory right to divert public water for his needs as long as he returns the water to its channel and does not disturb the rights of others. 67/ These statutory rights may be overridden by the Minister in charge of mining, who can grant a water right under such terms as he sees fit. 68/ If the right derogates from the rights of others, the grantee must compensate them. 69/ Under the petroleum legislation the Minister in charge of mining and energy can grant a water right for petroleum exploration and exploitation purposes, subject to compensation by the grantee if the rights of others are disturbed. 70/

The taking of sand and gravel from the bed of rivers, watercourses and gullies as material for construction, commercial, industrial or manufacturing purposes comes within the regulatory purview of the Quarries Control Act 71/ and is subject to a licence from the Minister in charge of mining. 72/ The licensing requirements, however, may be waived by the Minister if the material to be quarried does not exceed 100 cubic yards, and it is meant for the personal use of the quarry operator for construction purposes. 73/ Prior to deciding on an application for a licence, the Minister is to consult with (a) the local Parish Council or the Kingston and St. Andrew Corporation; (b) the Ministry of Works; (c) the Natural Resources Conservation Department in the Ministry of Science, Technology and the Environment; (d) the Ministry of Agriculture; and (e) any other statutory body or agency concerned. 74/ Adverse effects on the underlying ground waters or on the surface drainage patterns, and "pollution to the neighbourhood", are singled out in the Act among the grounds for the refusal to grant a licence. 75/ The licence may have a duration of up to five years, and it may, on expiration, be renewed at the

discretion of the Minister. 76/ A licence is not transferable, 77/ and it may be suspended or revoked on the grounds specified in the Act. 78/ Detailed provisions are made for the enforcement of the regulatory controls provided for in the Act. 79/

Under the Roads Protection Act, the taking of sand and gravel from the bed of, among others, watercourses or gullies within a safety distance of 132 feet from roads, bridges or other road works is severely restricted. 80/

G. Transportation

A specialized form of inland water transportation in Jamaica is river rafting, using bamboo rafts and manual propulsion, developed and regulated primarily as a tourist attraction. 81/ Under current regulations in force with respect to the Rio Grande River and the Martha Brae River, the trade can be carried out only by duly licensed raftsmen 82/ on duly licensed rafts. 83/ Other regulations concern the safety of transport by rafts and the conduct of licensed raftsmen.

H. Medicinal and thermal

There are two medicinal baths in Jamaica regulated by special laws. The Milk River Bath and the Bath of St. Thomas the Apostle are governed by a board appointed according to the respective statutes. 84/

I. Other uses

Recreational uses of rivers - other than river rafting - can be the subject of local regulations made by the Parish Councils. 85/ The use of public water for "mechanical" or industrial purposes is regarded under the Water Act as a "tertiary" use, which can be effected as such only subject to the satisfaction of "primary" and "secondary" uses. 86/

VI. LEGISLATION ON HARMFUL EFFECTS OF WATER

A. Flood control

The Flood Water Control Act provides for the carrying out of flood control projects by government bodies. It neither creates a specialized flood control agency nor prescribes general obligations with respect to floods. Overflow and embankment protection are also within the purview of the statute.

Flood damage control is within the purview of the forestry legislation, both in force and in draft. Under the Forest Act now in force, the Minister responsible for forestry may designate "protective areas" and restrict all land use activities in such areas for, among others, protection against floods. 87/

B. Erosion control (soil and water conservation)

Soil and water conservation, as well as the control and prevention of soil erosion, come within the purview of the Watersheds Protection Act, the Forest Act and the Land Authorities Act. Under the first Act, a Watersheds Protection

Commission is established with the duty of declaring protected watershed areas and prescribing land use rules for such areas for water conservation purposes. 88/ Provision is also made in the Act for compulsory and government-assisted improvement schemes. 89/

Under the Forest Act, the Minister responsible for forestry may designate "protective areas", and regulate all land activities in such areas for, among others, the conservation of soil and water resources, and the protection of land from erosion. 90/

The Land Authorities Act does not contain any specific reference to soil and water conservation per se, yet the soil conservation regulations which are in force with respect to areas designated for land improvement purposes under the Act buttress the argument that soil and related water conservation come within the purview of the Act. 91/ The Act provides for compulsory and government-assisted improvement schemes. 92/

C. Drainage and sewerage

1. Provision and regulation of the public sewerage service

As a result of the merger of the Kingston and St. Andrew Water Commission with the National Water Authority, responsibility for the provision of sewerage services to the public has since been consolidated in the National Water Commission, and has been given island-wide scope. 93/ The Commission has authority to require that houses and buildings at large be connected to the public sewerage system if the service is available. 94/ In addition, the legislation regulating the operation of factories requires that effluents resulting from processes which generate a considerable amount of wetness on the factory floor must be drained into a public sewer if public sewerage is available, and subject to the requirements laid down by the responsible authority. 95/

Detailed regulations are in effect concerning the public sewerage system of Kingston. The National Water Commission is responsible for the public sewers, i.e., all underground main, branch and connecting sewers up to the premises to be connected, whereas the owner of the premises is responsible for house sewers. Connections to the public sewers and all house sewerage work can be done only by persons duly licensed by the Commission and subject to its consent. Detailed provisions regulate, among others, the quality of pipes and fittings to be employed in, and the construction of, house sewers; the discharge into public sewers of designated industrial and other wastes which may be dangerous to the waste-carrying capacity of the sewer; and the appliances to be used in connection with indoor sanitation and the disposal of waste. 96/

Outside of Kingston, indoor sanitation and the disposal of sewage from buildings are subject to uniform regulations in effect at the parish level. 97/ Separate regulations govern the construction of sewage treatment plants in connection with land development outside the Kingston-St. Andrew urban area. Responsibility for the construction of the plant rests with the concerned developer, subject, however, to close supervision and control by the National Water Commission and the public health authorities. 98/ After completion of the plant to the satisfaction of the supervising authorities, the National Water Commission is to take over the operation after a successful trial period. Throughout such period the developer is held financially responsible for all remedial works to the plant which may become necessary. 99/

2. Planning aspects

Sewerage, drainage and sewage disposal works for the service of the public come within the regulatory purview of the Town and Country Planning Act. Under the Act, the government-approved land development plans, which are to guide and regulate the development of land in designated areas, may make provisions "facilitating the establishment, extension or improvement" of, among others, sewerage, drainage and sewage disposal works for the service of the public. 100/ The inclusion of provisions for such works in an approved land development plan would have the effect of barring all land development at variance with the provisions made in the plan. In this connection, it should be noted that the actual or foreseeable inadequacy of, among others, sewerage services in the area covered by an approved development order can be cause for the refusal or conditional grant of permission to develop land under the Act. 101/

When as a result of, among others, disregard for or lack of land development regulatory controls, the sewage disposal service to residential development areas is found by the Minister responsible for housing to be inadequate, ad hoc schemes can be adopted by that Minister with a view to remedying the inadequacy of the service. Prior consultation with, among others, the National Water Commission is required in the process of approval of remedial schemes. 102/ The "local authority" concerned with, among others, the public sewerage service is to be consulted within the framework of the process of approval of housing, slum clearance or improvement schemes under the Housing Act. 103/

3. Other provisions concerning land drainage

Irrigation authorities are given general responsibility for drainage within their areas. 104/ In its area, the Black River Drainage and Irrigation Board is given broad powers to drain, irrigate and reclaim land, and to maintain the watercourse of the Black River and other streams within its area of operations. 105/ Property owners may be ordered to remove any drainage obstruction that adversely affects other land, 106/ and those owning more than 50 acres may be required to contribute to reclamation, irrigation and drainage schemes ordered by the Board. 107/ Stream clearing may be ordered by the Black River Drainage and Irrigation Board, 108/ the Minister responsible for water resources 109/ and undertakers under the Flood Water Control Act. 110/

Under the regulations still in force, users of irrigation water supplied by the Rio Cobre Canal Works are under an obligation to provide for drainage to the satisfaction of the responsible government authorities (presumably, the Ministry of Works). Failure to comply with the above provisions may entail the discontinuance of the supply of water from the canal and cancellation of the relevant supply contract. 111/

It may be also recalled that, in dealing with applications for quarrying licences, the Minister in charge of mining is to take into account, among other factors, the impact which the proposed quarrying activity may have on the surface drainage pattern, and that the Minister may reject an application in case of anticipated adverse impact. 112/

VII. LEGISLATION ON WATER QUALITY AND POLLUTION CONTROL

A. Waste and misuse of water

The waste of water constitutes an offence under the Irrigation Act, 113/ the Water Act 114/ and the Underground Water Control Act. 115/ Under the last Act, the Courts are empowered to order the well sealed or the taking of any other measure which is necessary to prevent the waste of ground water. The Court orders may eventually be carried out by the Underground Water Authority, at the defaulting party's expense. 116/ Implicit in all specific grants of water for a particular purpose is a limitation of the grant to the purpose and the amount of water stated in it. The taking of water in excess of one's entitlement under a licence constitutes an offence under the Underground Water Control Act 117/ and the Irrigation Act. 118/ The Courts have, under the former Act, the same powers they have in relation to convictions on account of the waste of water. 119/ Likewise, the taking of water from the water mains in excess of one's entitlement under a water supply arrangement with the responsible Parish Council is an offence under the Parishes Water Supply Act. 120/ The grant of a water right for mining purposes can be revoked for, among others, the breach of any of the terms of the grant 121/ including, by implication, those concerning the purpose for which the water is to be used and the amount of water which can be taken for use.

The Irrigation Act and the Underground Water Control Act also contain specific provisions designed to prevent the waste of ground water struck in the course of mining operations. 122/

B. Pollution control

Water pollution control is the concern of several statutes, but no means of co-ordinating the various provisions are seemingly provided for.

The Water Act makes it an offence to "pollute or foul the water of an irrigation work or of a public stream". 123/ Rex v. West Indies Sugar Company 124/ involved an appeal from a conviction under this provision. The appellant claimed that it had acquired a prescriptive right to pollute prior to the enactment of the former Water Law. Section 59 of the Act protects existing rights actually used. The court held that section 59 protected the defendant not only in its accustomed pollution but also in any increase of amount. Therefore, old established polluters could not be held liable even should they increase the scale of their activities. On the other hand, a prescriptive right to violate a statute cannot be acquired, so claimed prescriptive rights unperfected at the time the former Water Law was passed (1922) cannot shield against prosecution. A year after that decision was taken, the Public Health Law, which has since been repealed, was enacted. Permit requirements for the discharge of industrial and other waste into watercourses were introduced within the framework of provisions concerning nuisances. 125/ No permit, however, has seemingly been granted under that law, nor has the permit-granting process ever been regulated. The Public Health Law of 1942 was subsequently repealed by the successor Public Health Act of 1974, which did not retain the water pollution control provisions of the predecessor law. As a result, the status quo which existed before the enactment of the 1942 Public Health Law has been restored, and the courts would now be free to follow the precedent of Rex v. West Indies Sugar Company. 126/

The Wild Life Protection Act prohibits the polluting of water containing fish by industrial wastes. 127/ The sections of the Mining Act which provide for water rights also contain some safeguards against pollution. It is an offence in connection with mining or prospecting to permit "any poisonous or noxious matter to be discharged into any public water in such a quantity as to be injurious to animal, fish, or vegetable life". 128/ In addition, the water rights of others are explicitly protected against interference through mining activities. 129/ Moreover, separate water pollution control regulations are called for by the Petroleum Act 130/ and the Public Health Act. 131/ To the author's knowledge, however, regulations under the above Acts have not been issued.

The control and prevention of pollution of inland surface waters come also within the purview of the Town and Country Planning Act. Under the Act, the approved government-land development plans, which are to guide and regulate land development activities in designated areas, may provide for the control of water pollution, among other things.

C. Health preservation

The water supply laws implicitly repose responsibility of the wholesomeness of public water supplies in the operating bodies, but only the National Water Commission Act mentions the quality of water in a brief reference. 132/

VIII. LEGISLATION ON UNDERGROUND WATERS

By virtue of the extension of the "critical areas" provisions of the Underground Water Control Act to the entire island, 133/ a licence from the Underground Water Authority is required for (a) the boring or extension of a well for ground-water abstraction purposes, 134/ (b) the abstraction of ground water from an unlicensed well, or borings made for other purposes than the abstraction of ground water, and (c) the abstraction of ground water for non-domestic use from a domestic well. 135/ Wells built and employed for domestic use are exempted from the licensing requirements. 136/ Borings made for the purpose of exploring the occurrence of ground water also do not require a licence but the prior "consent" of the Underground Water Authority must be secured. 137/ Borings to be made in connection with mining operations are subject to the prior filing of a statement of intent with the Underground Water Authority by the concerned operator, and to the restrictions and measures which the Authority may impose with a view to conserving ground water which may be struck in the course of the boring operations. 138/ Reporting requirements apply with respect to all wells or borings made for ground-water exploration purposes, or in production, which reach a depth of 50 feet or more. 139/ Separate, detailed requirements of the recording of the quantities and quality of ground water abstracted for non-domestic purposes are also in effect. 140/

Comparable regulatory provisions are contained in the Irrigation Act. 141/ In case of conflict the provisions of the Underground Water Control Act prevail. 142/ In view of which, and considering that the entire island is currently a critical area under the Underground Water Control Act, the ground-water control provisions contained in part V of the Irrigation Act arguably have been pre-empted by the comparable provisions of the Underground Water Control Act, and are, for the time being, ineffective. 143/

In addition, separate regulations for "the regulation of all wells", and for "the regulation of the sinking, construction, maintenance and use of all new wells", are called for by the National Water Commission Act. The regulations are to be made by the National Water Commission, "notwithstanding the provisions of any other enactment". 144/

It will be finally recalled that, in dealing with applications for quarrying licences under the Quarries Control Act, the responsible Minister is to take into account, among other factors, the impact which the proposed quarrying activity may have on the underlying water table, and may reject the application in case of anticipated adverse effects. 145/

IX. LEGISLATION ON CONTROL AND PROTECTION OF WATERWORKS AND STRUCTURES

Most laws authorizing a particular activity or type of project establish certain standards and procedures for hydraulic structures. There is legislation authorizing public and private works, requiring and prohibiting private works, and prohibiting interference with the works of others.

A. Public works

The construction, operation and maintenance of public water supply and sewerage works are the responsibilities of the National Water Commission. 146/ All construction works require prior ministerial approval of plans and estimates. 147/ The Commission is further empowered by separate legislation to construct waterworks and draw water from specified sources of supply, again subject to ministerial approval. 148/

Public water supply works, and related river-training works on non-navigable watercourses, are within the province of Parish Councils. All construction works by the latter are also subject to ministerial approval. 149/

Under the Irrigation Act, the Irrigation Authorities are to manage drainage and irrigation works in declared areas. 150/ A "provisional irrigation scheme" must describe the proposed works, among other particulars. Provisions are made for a public notice, a hearing of objections in the Water Court and a final decision by the Minister. 151/ The Irrigation Authorities may divert water for any approved scheme free of the provisions of the Water Act. 152/ The Authorities determine the mode of distribution of water under a scheme. 153/ In its own area of operations, the Black River Drainage and Irrigation Board is authorized to execute projects, build works and improve and maintain watercourses. 154/ The Board is also authorized to prepare and adopt schemes towards these ends. 155/ The Water Act authorizes the responsible Minister to undertake similar activities island-wide. 156/

Under the Flood Water Control Act, a prospective undertaker must prepare a detailed flood-control scheme, publish it and solicit objections, and submit the scheme and eventual objections for ministerial approval. 157/ Upon approval, a project undertaker is authorized to do the necessary works, dredging, correcting of stream course and associated activities. 158/ He is under an obligation to perform all works authorized by an approved scheme. 159/

It is worth pointing out that all public works affecting waters that are to be carried out in an area covered by a land development order made under the Town and Country Planning Act are, by implication, subject to a land development permit from either the local planning authority - the local Parish Council or the Council of the Kingston and St. Andrew Corporation - or the town and Country Planning Authority. However, works for inspecting, repairing or renewing public sewers or water mains are expressly exempted from land development regulatory controls and attendant permit requirements. 160/

B. Private works

Private sewerage and related drainage works are the subject of detailed regulatory controls. 161/ In quite another context, under the Mining Act a mining lessee is empowered to impound public water existing within the confines of the mining lease without any other authority than the Act itself and irrespective of the grant of a water right. 162/ The grant of a water right under both the Mining Act and the Petroleum Act conveys a right to construct works for the impoundment and conveyance of public water from without the area of the lease. 163/

More commonly, private works are not explicitly permitted, but are required. The Black River Drainage and Irrigation Board may require land owners to contribute to its schemes, 164/ and it may order them to improve streambanks and clear watercourses. 165/ Irrigation Authorities may order a land owner to establish and maintain proper drainage. 166/ One who subdivides land in an irrigation area is required to extend the irrigation works as the Irrigation Authority determines. 167/ Under the watersheds Protection Act, the owners of lands designated as watershed areas are required to carry out soil erosion control and water conservation works within the framework of either a voluntary, government-assisted or a compulsory, government-enforced improvement scheme. 168/ Comparable requirements are provided for with respect to soil erosion control works in "improvement areas" designated under the Land Authorities Act. 169/

All private waterworks that are to be carried out in an area covered by a land development order made under the Town and Country Planning Act are, by implication, subject to a land development permit from either the local planning authority - the local Parish Council or the Council of the Kingston and St. Andrew Corporation - or the Town and Country Planning Authority.

C. Protection of works

Several laws make it an offence to damage or interfere with works authorized under the relevant law. 170/ The Wild Life Protection Act forbids damaging a dam, floodgate or sluice with intent to take, kill or injure fish. 171/ The Black River Drainage and Irrigation Board is forbidden from interfering with existing lawful works. 172/

Under the Mining Act, prospecting and mining activities can be carried out in the vicinity of public waterworks, reservoirs or dams only with the prior authorization of the Commissioner of Mines. Prior to giving his authorization, the Commissioner is to consult with the public authority in charge of the affected works. 173/ Special provisions apply with respect to the Rio Cobre Canal Works. 174/ It may be recalled that the malicious damaging of, among other works, aqueducts so as to render them dangerous constitutes a felony and is punished with imprisonment for life. 175/

X. LEGISLATION TO DECLARE PROTECTED ZONES OR AREAS

A. In the case of beneficial uses of water

"Critical" ground-water areas may be designated by the responsible Minister with respect to areas in need of special measures for the protection and conservation of ground-water resources, including ground waters which are the source of a public water supply. 176/ The designation brings into effect licensing requirements and other restrictions with respect to the drilling of wells and the abstraction of ground water. 177/ As noted earlier, the critical area designations under the Act currently cover the entire island of Jamaica. 178/

Under the Irrigation Act the Minister responsible for irrigation may designate (a) "irrigation" areas, and (b) "restricted" areas. 179/ Irrigation areas are designated for the better development, conservation and use of irrigation water, both surface and underground. In addition, restrictions quite comparable in scope and effect to those envisaged by the Underground Water Control Act with respect to designated "critical" ground-water areas are automatically in effect in the "irrigation" areas. 180/ "Restricted" areas can be designated apparently to bring into effect therein the same regulatory controls with respect to borings and ground-water withdrawals that are in effect in the irrigation areas. 181/ It is a noteworthy feature of the fairly complex system envisaged in the Irrigation Act that the regulatory ground-water controls in effect in irrigation and in restricted areas bear no apparent relationship to the use of protected ground water for irrigation. Since the whole of Jamaica is currently a "critical" area under the Underground Water Control Act, and by virtue of the statutory provision whereby, in case of overlap of "critical" areas under that Act and "irrigation" and "restricted" areas under the Irrigation Act, the former are to prevail, 182/ the ground-water control provisions of the Irrigation Act are arguably fully pre-empted by the comparable provisions in the Underground Water Control Act and are, as a consequence, ineffective for the time being. 183/

B. In the case of harmful effects of water

Protected, controlled or restricted areas in connection with the control and prevention of the harmful effects of water, as well as soil and water conservation can be designated under the Flood Water Control Act, the Watersheds Protection Act, the Land Authorities Act and the Forest Act.

Under the Flood Water Control Act, the responsible Minister may designate flood-water control areas with a view to securing the control of, and protection from, floods due to the overflow of watercourses. 184/ The designation of such areas brings into effect the provisions of the Act empowering designated "undertakers" to design and carry out flood control schemes and relevant works. 185/ The Watersheds Protection Act empowers the responsible Minister to designate watershed areas for the purpose of conserving water resources. 186/ As a result of the designation of a watershed area, regulations restricting the use of land and programmes of work for the improvement of land can be brought into effect by the Watersheds Protection Commission. 187/ Comparable land use regulations and improvement projects may come into effect with respect to areas designated as "improvement" areas under the Land Authorities Act for purposes of effecting the economic and efficient utilization of the land, 188/ including soil and water conservation. 189/ Whenever there is a conflict or overlap between watershed areas and improvement areas, the former prevail as far as land use regulations - as opposed to land improvement projects and programmes - are concerned. 190/

Lands other than Crown lands can be declared "protective areas" under the Forest Act for protection from floods, and for soil and water conservation purposes. A designation of protective area brings into effect land use restrictions. 191/

XI. GOVERNMENT WATER RESOURCES ADMINISTRATION AND INSTITUTIONS

In Jamaica, several government departments 192/ and agencies have sectoral responsibilities for the development, conservation and use of fresh water resources. In addition, local governments and agencies operating at the basin or local level also concur in the management of the country's fresh water resources. The formation of water users' associations is also provided for by current legislation.

A. At the national level

The Minister of Finance and Planning is responsible for economic planning and policy. He administers the land use regulatory controls provided for in the Town and Country Planning Act, 193/ and oversees the newly established Planning Institute of Jamaica (see below).

The Minister of Science, Technology and Environment, through the Natural Resources Conservation Department, administers the watersheds Protection Act, 194/ and the Wild Life Protection Act. 195/

The Minister of Construction is responsible for public works at large and for the administration of the Flood-Water Control Act, 196/ the Housing Act and the Local Improvements (Community Amenities) Act. 197/

The Minister of Public Utilities and Transport oversees the National Water Commission (see below) and the Underground Water Authority (see below). The Minister has ultimate responsibility for the administration of the regulatory controls provided for in the Underground Water Control Act and in the Water Act.

The Minister of Agriculture is responsible for, among others, the administration of the Forest Act. 198/ He also oversees the Land Authorities (see below). Through the Commissioner of Lands, the Ministry of Agriculture is responsible for the management of the Rio Cobre Irrigation Works. 199/

The Minister of Health is responsible for the administration of the Public Health Act. 200/

The Minister of Local Government is responsible for domestic water supplies, and irrigation and drainage. In the latter capacity, he administers the Irrigation Act, 201/ and oversees the Irrigation Authorities and the Black River Drainage and Irrigation Board (see below). He further oversees the Parish Councils and the Kingston and St. Andrew Corporation (see below).

The Minister of Mining and Energy administers the Mining Act, the Petroleum Act and the Quarries Control Act. 202/

The Minister of Tourism oversees the River Rafting Authority (see below). In addition, he oversees the Milk River Bath Board and the Directors of the Bath of St. Thomas the Apostle, which is responsible for the management of the respective mineral baths. Both the Board and the Directors have corporate status, with seven members each, all of whom are appointed by the Minister. The Minister further retains policy-making authority. 203/

The National Water Commission resulted from the merger of the Kingston and St. Andrew Water Commission and the National Water Authority. 204/ It has island-wide responsibility for the provision of water supply and sewerage services to the public and, subject to ministerial approval, it has authority to (a) construct and operate relevant works; (b) levy rates and charges for the services rendered; (c) acquire the water supply works of Parish Councils and substitute itself for them in the relevant service; and (d) make and administer regulations concerning the provision of public water supply and sewerage services and wells at large. 205/ The Commission has corporate status 206/ and is composed of nine members, at least one of whom is to be a civil engineer, one a person with business experience and two are to represent local government interests. All of the members of the Commission are appointed by the Minister of Public Utilities and Transport and hold office for up to three years, subject to revocation of the appointment or reappointment. The Minister also has authority to appoint a Chairman and a Deputy Chairman from among the members of the Commission. 207/ He further retains policy-making authority over the Commission. 208/

The Underground Water Authority administers the ground-water control provisions of the Underground Water Control Act. 209/ The Authority has corporate status 210/ and is composed of not less than five members, all appointed by the Minister of Public Utilities and Transport. They can hold office for up to three years, subject to reappointment. The Minister also appoints a Chairman from among the members of the Authority. 211/ He further retains policy-making authority. 212/

The Watersheds Protection Commission is responsible to the Minister of Science, Technology and the Environment for the administration of the soil and water conservation provisions and programmes under the watershed Protection Act. 213/ The Commission has corporate status, 214/ consisting of nine members, all appointed by the Minister. They can hold office for up to three years, subject to revocation of the appointment or reappointment. The Minister also appoints a Chairman from among the members of the Commission. 215/ He further retains policy-making authority over the Commission. 216/

The Town and Country Planning Authority is responsible to the Minister of Finance and Planning for the administration of the land use controls provided for in the Town and Country Planning Act. 217/ The authority consists of not less than three members, to be appointed by the Minister. The Minister has authority to appoint a Chairman from among the members of the Authority. Members of the Authority hold office not longer than two years and may be removed from office at any time, or reappointed by the Minister. 218/

The River Rafting Authority is responsible for controlling, regulating and developing river rafting. 219/ The Authority has corporate status 220/ and consists of (a) ex officio members who are members of the Tourist Board, and (b) not more than five members appointed by the Minister of Tourism. The Minister also has authority to appoint a Chairman from among the ex officio members of the Authority. 221/ The Minister further retains policy-making authority. 222/

The Planning Institute of Jamaica has recently been established to undertake economic, social and physical development planning, as well as to co-ordinate national, regional and sectoral development planning. 223/ However indirectly, water resources may eventually come within the purview of the Institute's statutory responsibilities from the standpoint of (a) co-ordination of sectoral development plans, including, by implication, water-sector plans; and (b) co-ordinating water-sector plans with broader economic, social and physical development plans. The Institute has corporate status, 224/ consisting of a Director-General and from six to eight directors, all appointed by the Minister of Finance and Planning. The directors hold office for not less than three and not more than five years, subject to revocation of the appointment or reappointment. 225/ The Minister retains policy-making authority over the Institute. 226/

A Quarry Advisory Committee has been established by the Quarries Control Act to advise the Minister responsible for mining on matters concerning quarries, and on applications for quarrying licences, including, by implication, applications for licences to quarry materials from the bed of rivers, watercourses and gullies. 227/ The Committee consists of not less than six and not more than 10 members, all of whom, including a Chairman from among them, are appointed by the above-mentioned Minister and serve for up to three years. 228/

B. At the local level

The Black River Drainage and Irrigation Board was established by the Black River (Upper Morass) Reclamation Act, with responsibility for the execution and administration of projects and programmes for the reclamation of land, irrigation and drainage in the areas designated under the Act; and the maintenance of watercourses therein, including the maintenance of the navigability of a designated stretch of the Black River. 229/ The Board has corporate status 230/ and consists of (a) four appointees of the Minister of Local Government, including a Chairman, at least one of whom other than the Chairman is to be the owner of land in the area of operations of the Board; (b) two members elected by the owners of land in the Board area; and (c) one appointee of the local Parish Council. 231/

Irrigation authorities can be established by the Minister of Local Government with respect to areas declared "irrigation areas" under the Irrigation Act. 232/ The Irrigation Authorities are principally responsible for (a) the design and implementation of irrigation schemes, including the construction and management of irrigation works; and (b) the allocation of water under an approved scheme. 233/ For the above purposes, the Authorities are by law the grantees of water rights in ground water and public waters, without the need for a licence under the Water Act. 234/ Irrigation Authorities have corporate status, 235/ and the members, including the Chairman, are appointed by the Minister and hold office at his pleasure. 236/

Land Authorities can be established by the Minister of Agriculture with respect to the areas designated as "improvement areas" under the Land Authorities Act. 237/ The Land Authorities are responsible for the administration of land use regulations and land improvement schemes - including regulations and schemes for soil and related water conservation - in effect in the designated areas. 238/ Land Authorities have corporate status, 239/ and the members, including the Chairman, are appointed by the Minister and hold office at his pleasure. 240/

The Parish Councils have responsibility for, among others, the provision of public water supply services, subject to approval of the Minister responsible for local government. 241/ In addition, the Parish Councils have authority to regulate (a) the installation of sewers, 242/ and (b) the recreational uses of rivers, navigation, and more in general, the "control" of rivers. 243/ In case of conflict of regulations under (b) above with the comparable regulations made under the River Rafting Act, the latter prevail. 244/ Unless they are expressly pre-empted by the Central Planning Authority, the Parish Councils administer the land development permission provisions of the Town and Country Planning Act with respect to areas covered by land development orders made under the Act. 245/

The Kingston and St. Andrew Corporation is a unit of local government resulting from the incorporation of the parish of Kingston and that of St. Andrew. 246/ The Corporation's only responsibilities in water-related matters are those stemming from the Town and Country Planning Act. Unless expressly pre-empted by the Town and Country Planning Authority, the Corporation has authority to administer the land development permission provisions of the Town and Country Planning Act with respect to Corporation areas covered by land development orders made under the Act. 247/

The Watersheds Protection Commission has, subject to the approval of the responsible Minister, authority to set up Watershed Protection Committees with respect to the areas designated as "watershed areas" under the Watersheds Protection Act. 248/ The Watershed Protection Committees are to assist the Commission in the discharge of its duties, subject to specific statutory limitations. 249/

C. At the users' level

Under the Water Act, the owners of lands susceptible of being brought under irrigation by means of works of common interest may petition the Minister in charge of water resources with a view to having (a) the lands authoritatively surveyed and (b) the proposed works designated as an irrigation scheme under the Act. 250/ Upon the grant of a petition, the owners of lands affected by an irrigation scheme are bound to contribute to the cost of relevant projects. 251/ The Minister may appoint an Irrigation Board consisting of representatives of affected landowners to carry out and manage one or more irrigation schemes. 252/

XII. LEGISLATION ON FINANCIAL ASPECTS OF WATER RESOURCES MANAGEMENT (WATER RATES AND CHARGES)

Subject to ministerial approval, the National Water Commission has authority to fix rates and charges for water supply and sewerage services. 253/ The Commission is directed to establish rates for both bulk and individual sales of water that will exactly match the Authority's costs, including interest, capital repayment, depreciation and appropriate reserves. 254/ Parish Councils have comparable charging and rate-setting authority with respect to the water they supply. The Parishes Water Supply Act authorizes a "water rate" which may be based on the value of property, its nature, the amount of water supplied, the number of livestock possessed or a combination of these factors. 255/ Only property connected to the supply system is subject to the rate. Both charges and rates are subject to ministerial approval. The Councils may also supply water free of charge to areas not connected to the piped supply 256/ (this water is delivered by

truck). Both Parish Councils and the Commission may further supply water at cost to specified schools. 257/ The public water supply service can be discontinued if the relevant rates or charges have not been paid. 258/

Under the Irrigation Act, the Minister of Agriculture has authority to levy, with respect to all lands which fall within the areas designated as "irrigation areas" under the Act and which stand to benefit from irrigation projects undertaken pursuant to the Act, irrigation rates and irrigation "dues", the latter being charges for the water delivered. 259/ The delivery of water can be suspended by the local Irrigation Authority if the above rates or dues are not paid. 260/ Water supplied from the Rio Cobre Irrigation Works is charged for according to the amount of water delivered, and the charges vary according to the purpose or use of the water. 261/ It should be emphasized that the irrigation "dues" under the Irrigation Act and the charges under the Rio Cobre Canal Regulations offer the sole example of charges which apply with respect to the water per se as opposed to the means or services whereby water is delivered.

XIII. IMPLEMENTATION OF WATER LEGISLATION

Under the implementation of water legislation are grouped and will be reviewed provisions concerning (a) protection of water rights, (b) law enforcement, (c) penalties, and (d) special water tribunals.

A. Protection of water rights

The protection of lawful water rights from competing legitimate claims of prospective users or of the Government is ensured by current legislation in a number of ways. These include (a) the right to make representations on proposed administrative action potentially affecting existing rights, prior to the taking of such action; 262/ and (b) the right to be compensated for legitimate interferences with existing rights. 263/ In addition, the holders of water rights are generally afforded recourse from administrative or judicial determinations impairing their rights before the higher-ranking administrative or judicial authority. 264/

Water rights which existed prior to the enactment of the Water Act were expressly exempted from the regulatory purview of the Act, on the sole condition that they had actually been used. 265/

B. Law enforcement

Virtually all the statutes reviewed in the present study make an express grant of some fairly standard law enforcement powers to the government departments or agencies responsible for the administration of the statutes. It is standard practice to grant the Government the authority to (a) enter lands, (b) inspect and investigate regulated or restricted activities, or simply private property, and (c) request information and documents from concerned individuals in connection with a regulated activity, the provision of a public service or the execution of government-approved projects. 266/ Additional enforcement powers can be granted (a) to issue administrative orders requiring the person or concern carrying out a regulated activity to do something generally, but not necessarily, as a result of faulty conduct; and (b) to execute said orders in lieu of the person or concern which is supposed to, if it fails to comply. 267/

C. Penalties

Virtually all the statutory and other provisions reviewed in the present study are sanctioned by a general or a specific penalty, monetary or otherwise. The violation of any of the provisions of the Underground Water Control Act, for example, including by implication those which regulate the digging of wells and the abstraction of ground water in "critical areas", carries a fine of up to \$J 200 or imprisonment for up to 12 months, and a daily fine of up to \$J 40 in case of a continued offence. 268/ In addition, if the violation involves the waste or misuse of ground water, the Court hearing the case may order the well in question sealed. 269/ Under the Water Act, a fine of up to \$J 50 or imprisonment for up to six months (\$J 200 or one year, respectively, on a second and any subsequent conviction) or both, equally applies with respect to a number of offences ranging from the pollution of, or interference with, a public watercourse to waste and misuse of public water. 270/ If the pollution, waste or misuse is wilful or malicious, however, the ceilings are \$J 1,000 and two years, respectively. 271/ The unauthorized taking of water supplied by means of works belonging to an Irrigation Authority is sanctioned with a fine of \$J 50 or imprisonment for three months or both. 272/ The waste of water by the owner of land irrigated from the above-mentioned works is separately sanctioned with a fine of \$J 50. 273/ Far stiffer penalties are envisaged by the more recent acts, most notably the Mining, Petroleum, National Water Commission, and Quarries Control Acts. Violations under the first two Acts, including, by implication, the taking of public water for mining and petroleum exploration or exploitation purposes without a duly granted water right carries a fine of up to \$J 1,000 or imprisonment for up to 12 months or both. 274/ The unlicensed quarrying of material from, by implication, the bed of watercourses is punished with a fine of up to \$J 500 or imprisonment for up to 12 months (\$J 1,000 and two years, respectively, in case of a second or any subsequent conviction), and with a daily fine of up to \$J 200 or imprisonment for up to two years in case of a continuing offence. 275/ The unauthorized taking of water from the mains of the National Water Commission, and the unauthorized sale of water supplied by the Commission, both carry a fine of up to \$J 1,000 or imprisonment for up to three months. 276/ Some regulatory statutes envisage the suspension or revocation of licences or comparable instruments as an additional penalty for the breach of statutory provisions, or of the terms and conditions of the licence or other regulatory instrument. 277/

D. Water courts

Under the Water Act, Water Courts may be appointed by the Minister in charge of water resources to hear and adjudicate disputes concerning the "use, diversion and appropriation of water", and to carry out a number of quasi-administrative and advisory functions including, in particular, determining if a stream is "public" or not. 278/ The Water Courts are specialized courts, consisting of a senior barrister or solicitor, and of two "assessors", one of whom must be an engineer. 279/ The jurisdiction of the Water Courts is exclusive of the concurrent jurisdiction of the courts of law, 280/ but decisions made by the Water Courts in their judicial capacity can be appealed before the Court of Appeal. 281/ The same decisions have the force of judgements rendered by a Resident Magistrate's Court, 282/ and can be enforced in any competent court. 283/

Notes

1/ The Public Health Act, 1974, which repealed the former Public Health Law of 1942, has not yet been brought into effect. As a result, the 1942 law is, from a formal standpoint, still in force. References have been made only to the 1974 Act on the assumption that that Act will soon be given full effect.

2/ Water Act, sect. 4.

3/ Ibid., sect. 3.

4/ Ibid., sect. 2.

5/ Ibid., sect. 36 (c). See also sect. XIII.D below.

6/ Flood Water Control Act, sect. 14.

7/ Water Act, sect. 2.

8/ Ibid.

9/ Pursuant to section 4 of the Water Act.

10/ Water Act, sects. 5-6.

11/ Ibid., sects. 6, 11 and 13. A simplified procedure is in effect for the granting of authorizations for the use of public water (a) on non-riparian land, and (b) for the generation of hydroelectric energy (Water (Non-riparian Use) Regulations, sects. 3-4).

12/ Water Act, sect. 59 (1). See also sect. XIII.A below.

13/ Water Act, sect. 59 (1).

14/ Mining Act, sect. 50.

15/ Ibid., sects. 50 (6) and 51.

16/ Ibid., sect. 50 (3).

17/ Ibid., sects. 52-53.

18/ Ibid., sect. 56.

19/ Ibid., sect. 54.

20/ Petroleum Act, sects. 23-25. No express provision under the Act is made, however, on (a) the duration of the water right, and (b) the variation, transfer and revocation of the right.

21/ Water Act, sect. 3.

22/ See R. E. Clark, ed., Water and Water Rights (1967), pp. 300 and 334.

23/ R. E. Clark, op. cit., pp. 353 and 355.

Notes (continued)

- 24/ See, on this point, sect. X.A below.
- 25/ Underground Water Control Act, sects. 11 (1) and 12 (1).
- 26/ Ibid., sect. 11 (3) (a). "Domestic" use includes the use of water for (a) drinking, washing, cooking and sanitary purposes; (b) the watering of gardens and horses and car-washing - provided no hosepipe is used for the purpose; and (c) the carrying on of a profession on premises of which the greater part is used as a house - with the exception of laundering (ibid., sect. 2).
- 27/ Underground Water Control (Licensing) Regulations, sects. 4-5.
- 28/ Kingston and St. Andrew Water Supply Act, sects. 3, 6 and 7.
- 29/ Ibid., sects. 3 and 6.
- 30/ For example, 5 million gallons per day in January, February, July, August and September of each year (ibid., sect. 7).
- 31/ Irrigation Act, sect. 19 (1). See also sects. X.A and XI.B below.
- 32/ Parishes Water Supply Act, sect. 6. The grant, however, is seemingly (a) limited to non-navigable rivers, and (b) subject to compensation if other water rights are disturbed.
- 33/ Mining Act, sect. 19 (1) (e).
- 34/ Ibid., sect. 35 (e).
- 35/ Water Act, sect. 6. The reference to the uses as "primary" uses, however, is contained in sect. 7.
- 36/ Water Act, sects. 7 and 9.
- 37/ Ibid., sect. 6.
- 38/ Ibid., sect. 7.
- 39/ Ibid., sect. 9.
- 40/ Ibid., sect. 6 (b).
- 41/ Ibid., sect. 13.
- 42/ Ibid., sect. 11.
- 43/ See Kingston and St. Andrew Water Supply Act, sects. 3, 6 and 7. See also sect. III.D above.
- 44/ Water Act, sect. 5.
- 45/ Underground Water Control Act, sects. 6 (1) (a) and 11 (3).
- 46/ Rio Cobre Canal Regulations, sect. 8 (c).

Notes (continued)

47/ National Water Commission Act, sect. 4 (1). Section 4 (3) of the Act restricting the area of operation of the then National Water Authority to areas outside the limits of the Kingston and St. Andrew corporate area, has been repealed by section 5 of the National Water Authority (Change of Name and Amendment) Act, 1980.

48/ Parishes Water Supply Act, sects. 4-6. By virtue of section 2 of the Act (as amended by the National Water Authority (Change of Name and Amendment) Act, 1980), the above provisions of the Act are not in effect with respect to the parishes of Kingston and St. Andrew.

49/ Water Supply Act, sect. 3 (1).

50/ National Water Commission Act, sect. 4 (2) (c).

51/ National Water Commission Act, sect. 25; Parishes Water Supply Act, sect. 39. The penalties envisaged under the two Acts are, respectively, a fine of up to \$J 1,000 or, in default of payment, imprisonment for up to three months (National Water Commission Act, sect. 28); and a fine of up to \$J 60 (Parishes Water Supply Act, sect. 39).

52/ National Water Commission Act, sects. 26-28.

53/ Town and Country Planning Act, sect. 10 (1) (c), and Second Schedule, part V.

54/ Ibid., sect. 18 (d) (ii). The inadequacy of water supply services is further cause for denying compensation for the diminished value of land resulting from the refusal or the conditional grant of permission to develop land (ibid.).

55/ Local Improvements (Community Amenities) Act, sects. 3 (1)-(2), 12 and 14. Under sect. 16 of the Act, the National Water Commission arguably retains authority for the carrying out of the water supply works.

56/ Housing Act, sect. 9. Under the now prevailing circumstances, the reference to the Kingston and St. Andrew Corporation should probably be read as a reference to the National Water Commission.

57/ Water Act, sect. 6.

58/ Ibid., sect. 11.

59/ Irrigation Act, sects. 19 and 20 (1). See also sect. X.A below.

60/ Rio Cobre Canal Regulations, sect. 8 (b).

61/ Ibid., sect. 8 (e).

62/ Wild Life Protection Act, sect. 13.

63/ Ibid., sect. 9.

64/ Ibid., sect. 10.

Notes (continued)

65/ Water Act, sect. 13.

66/ Mining Act, sect. 19.

67/ Ibid., sect. 35.

68/ Mining Act, sect. 48.

69/ Ibid.

70/ Petroleum Act, sect. 22.

71/ This can be safely inferred from the fact that the Act has repealed, among others, precisely those provisions of the Parish Councils Act and of the Kingston and St. Andrew Corporation Act which had vested corresponding regulatory authority in the local governments (Quarries Control Act, Second Schedule). At the same time, section 37 (3) of the Act provides for the continued validity of licences granted by local governments under the relevant provisions of the two above-mentioned Acts.

72/ Quarries Control Act, sect. 5 (1).

73/ Ibid.

74/ Ibid., sect. 8 (3) (6).

75/ Ibid., sect. 9 (1) (e) and (h).

76/ Ibid., sect. 8 (5).

77/ Ibid., sect. 13.

78/ Ibid., sect. 11.

79/ Ibid., sects. 20 and 29. See also sect. XIII.B below.

80/ Roads Protection Act, sect. 3. This provision, however, is probably now pre-empted by the provision of sections 8 (3) and (6) (b) of the Quarries Control Act, whereby the authority responsible for the administration of the Roads Protection Act is associated at an early stage with the licensing process under the Quarries Control Act.

81/ Under the River Rafting Act, sects. 4 and 9. Relevant authority rests with the River Rafting Authority (see sect. XI.A below).

82/ River Rafting Regulations, sect. 3.

83/ Ibid., sect. 11.

84/ Respectively under the Milk River Bath Board Act, and the Bath of St. Thomas the Apostle Act.

85/ Parish Councils Act, sect. 121 (1) (y) and (2).

Notes (continued)

86/ Water Act, sect. 12. See also sect. IV above.

87/ Forest Act, sect. 10.

88/ Watersheds Protection Act, sects. 5 and 8.

89/ Ibid., sects. 10-16.

90/ Forest Act, sect. 10.

91/ See the Soil Conservation (Yallahs Valley) By-laws, 1952, and the Soil Conservation (Christiana Area) By-laws, 1957. Both sets of by-laws were made under the authority of section 16 of the Act.

92/ Land Authorities Act, sects. 7-12.

93/ The National Water Commission Act does not contain any explicit grant of authority to the National Water Commission in the public sewerage sector. However, indirect references in the Act - most notably, the reference to sewerage systems "constructed, extended, or operated" by the Authority - and the fact that the Commission has succeeded in the responsibilities, assets and liabilities of the now defunct Kingston and St. Andrew Water Commission - including those related to the provision of public sewerage services in the latter's area of operations - support the statement made in the text. See, in addition, the outright grant of authority made to the National Water Commission with respect to public sewerage in the Parish of Kingston, in section 5 of the Kingston Improvements Act, as amended.

94/ National Water Commission Act, sect. 12; see also the Kingston Improvements Act, sect. 10.

95/ Factories Regulations, sect. 65.

96/ Kingston Improvements Act, sects. 9-26; and Kingston and St. Andrew Improvements (Construction and Use of Sewers) Regulations.

97/ See, for instance, the Parish Councils Building (Lucea) By-laws, 1952, sects. 26-29, made under section 2 of the Parish Councils Building Act.

98/ Kingston and St. Andrew Water Commission (Sewage Treatment Plants) (Construction) Regulations, sect. 3.

99/ Kingston and St. Andrew Commission (Sewage Treatment Plants) (Construction) Regulations, sects. 4-5.

100/ Town and Country Planning Act, sect. 10 (1) (c), and Second Schedule, part V.

101/ Town and Country Planning Act, sect. 18 (d) (ii). The inadequacy of sewerage services is further cause for denying compensation for the diminished value of land as a result of the refusal or the conditional grant of permission to develop land (ibid.).

Notes (continued)

102/ Local Improvements (Community Amenities) Act, sects. 3 (1)-(2), 12 and 14. Under sect. 16 of the Act, the National Water Commission arguably retains authority for the carrying out of the sewerage works.

103/ Housing Act, sect. 9. In the light of the circumstances prevailing today, the reference to the "local authorities" should be read as a reference to the National Water Commission.

104/ Irrigation Act, sects. 6-7.

105/ Black River (Upper Morass) Reclamation Act, sect. 7.

106/ Ibid., sect. 12.

107/ Ibid., sect. 8.

108/ Ibid., sects. 7, 9 and 12.

109/ Water Act, sect. 61.

110/ Flood Water Control Act, sect. 10.

111/ Rio Cobre Canal Regulations, sect. 9.

112/ Quarries Control Act, sect. 9 (1) (e). See also sect. V.F above.

113/ Irrigation Act, sects. 39 (1), 40 and 46 (8) (a). On the continuing effectiveness of the latter provision as a result of the extension to the entire island of the critical area provisions of the Underground Water Control Act, however, see sect. VIII below.

114/ Water Act, sect. 66 (c)-(d).

115/ Underground Water Control Act, sect. 12 (4) (a).

116/ Ibid., sect. 20 (2).

117/ Ibid., sect. 12 (4) (b). The Act actually refers to the licensee's "reasonable requirements".

118/ Irrigation Act, sect. 46 (8) (b). This Act also refers to the licensee's "reasonable requirements". See also footnote 113 above on the continuing effectiveness of that provision of the Act.

119/ Underground Water Control Act, sect. 20 (2).

120/ Parishes Water Supply Act, sect. 39. A comparable provision is not in effect with respect to the water supplied from the National Water Commission mains.

121/ Mining Act, sect. 56.

122/ Underground Water Control Act, sect. 11 (4); and Irrigation Act, sect. 46 (6). See also sect. VIII below.

Notes (continued)

123/ Water Act, sect. 66.

124/ 4 Jamaica Law Review 14 (Ct. App. 1941).

125/ Public Health Law, 1942, sects. 64 (xii) and 65.

126/ It should be noted, however, that the Public Health Act, 1974, since its passage by the Jamaican Legislature, has never been brought into effect. As a result, the Public Health Law of 1942 is, from a formal standpoint, still in force.

127/ Wild Life Protection Act, sect. 11.

128/ Mining Act, sect. 49.

129/ Ibid., sects. 19 and 35.

130/ Sect. 26 (1) (c). The relevant provision calls for regulating (a) the prevention of pollution at large, and (b) the taking of remedial action after pollution has occurred. The unqualified reference to "pollution" can be construed as including, but not being limited to, fresh water resources, both surface and underground.

131/ Public Health Act, sect. 14 (1) (d). The unqualified reference therein made to "water pollution" encompasses by implication both surface and underground waters.

132/ National Water Commission Act, sect. 4 (1) (c).

133/ See, on this particular point, sect. X.A below.

134/ Underground Water Control Act, sect. 11 (1).

135/ Ibid., sect. 12 (1).

136/ Ibid., sect. 11 (3).

137/ Underground Water Control Act, sect. 11 (2).

138/ Ibid., sect. 11 (4).

139/ Ibid., sect. 8.

140/ Ibid., sect. 6; and Underground Water Control (Abstractions) Regulations, sects. 3-4.

141/ Irrigation Act, sect. 46.

142/ Underground Water Control Act, sect. 10 (b).

143/ As a consequence, mining prospectors and lessees who intend to carry out boring operations anywhere in the island will have to comply only with the ground-water control provisions of section 11 (4) of the Underground Water Control Act, and not with the parallel provision of section 46 (6) of the Irrigation Act - should the borings be located in an irrigation or restricted area under section 3 of the latter Act.

Notes (continued)

- 144/ National Water Commission Act, sect. 29.
- 145/ Quarries Control Act, sect. 9 (1) (c). See also sect. V.F above.
- 146/ See sects. V.B and VI.C above and references therein.
- 147/ See the National Water Commission Act, sect. 4 (1) (b); and the Kingston Improvements Act, sect. 8 (2).
- 148/ Kingston and St. Andrew Water Supply Act, sects. 3, 6, 7 and 10. See also sect. III.B above.
- 149/ Parishes Water Supply Act, sects. 4 and 6. See also sect. V.B above.
- 150/ Irrigation Act, sect. 5-6.
- 151/ Ibid., sects. 8-12.
- 152/ Ibid., sect. 18.
- 153/ Ibid., sect. 20.
- 154/ Black River (Upper Morass) Reclamation Act, sects. 7 and 9.
- 155/ Ibid., sect. 8.
- 156/ Water Act, sect. 61.
- 157/ Flood Water Control Act, sects. 5-9.
- 158/ Flood Water Control Act, sect. 10.
- 159/ Ibid., sect. 11.
- 160/ Town and Country Planning Act, sect. 5 (2) (c).
- 161/ See sect. VI.C above and references therein.
- 162/ Mining Act, sect. 35 (e).
- 163/ Ibid., sect. 50 (d)-(e); and Petroleum Act, sect. 22 (1) (c)-(d).
- 164/ Black River (Upper Morass) Reclamation Act, sect. 8.
- 165/ Ibid., sect. 12.
- 166/ Irrigation Act, sect. 7.
- 167/ Ibid., sect. 65.
- 168/ Watersheds Protection Act, sects. 10, 11 and 16.
- 169/ Land Authorities Act, sects. 7, 8 and 12.

Notes (continued)

170/ Black River (Upper Morass) Reclamation Act, sects. 24 and 27; Irrigation Act, sect. 42; and Mining Act, sect. 91.

171/ Wild Life Protection Act, sect. 9.

172/ Black River (Upper Morass) Reclamation Act, sect. 7.

173/ Mining Act, sect. 8 (1) (d) and (2) (a).

174/ Rio Cobre Canal Regulations, sects. 1-4.

175/ Malicious Injury to Property Act, sect. 26.

176/ Underground Water Control Act, sect. 9.

177/ See sect. VIII above, and statutory references therein.

178/ By virtue of the combined operation of (a) the Clarendon Plain (Critical Area) Order, 1963; (b) the St. Catherine (Critical Area) Order, 1969; (c) the Montego Bay River Basin (Critical Area) Order, 1973; (d) the Black River Basin (Critical Area) Order, 1973; (e) the Yallahs River Basin (Critical Area) Order, 1973; and (f) the Jamaica (Critical Area) Order, 1977.

179/ Irrigation Act, sect. 3. Through the end of 1983, three areas had been designated as irrigation areas under the Act.

180/ Irrigation Act, sect. 46. See also sect. VIII above.

181/ Irrigation Act, sects. 3 (b) and 46. See also sect. VIII above. "Restricted" areas under the Act are in fact referred to only in connection with the provisions of part V of the Act, on Conservation and Protection of Water Resources.

182/ See Underground Water Control Act, sect. 10 (b).

183/ That is to say, theoretically until one or more of the critical area orders which have been made under the Underground Water Control Act are revoked, and the uncontrolled withdrawal of ground-water resources in the area is restored.

184/ Flood Water Control Act, sects. 3 (1) and 5 (1). Through the end of 1983, 14 areas had been designated pursuant to section 3 of the Act.

185/ Flood Water Control Act, sects. 5 and 10. See also sect. IX.A above.

186/ Watersheds Protection Act, sects. 4-5. Through the end of 1983, 41 areas had been designated pursuant to the Act.

187/ Watersheds Protection Act, sects. 8, 10 and 16. See also sects. VI.B and IX.B above.

188/ Land Authorities Act, sects. 3 and 5 (a). See also sects. VI.B and IX.B above.

Notes (continued)

189/ See the Soil Conservation (Yallahs Valley) By-laws, 1952, and the Soil Conservation (Christiana Area) By-laws, 1957, made under section 16 of the Act.

190/ Watersheds Protection Act, sect. 6 (b).

191/ Forest Act, sect. 10. See also sects. VI.A and VI.B above.

192/ The break-down of government Ministries which follows is taken from the Gazette Extraordinary No. 60 A of 9 December 1983, as subsequently amended.

193/ See sect. V.B.2 and VI.C.2 above.

194/ See sect. X.B above.

195/ See sect. VII.B above.

196/ See sect. VI.A above.

197/ See sect. V.B and VI.C above.

198/ See sect. VI.A and B above.

199/ This is to be argued from the fact that the authority granted to the Minister responsible for irrigation to set up a separate Irrigation Authority for the management of the Rio Cobre irrigation works under section 63 (1) of the Irrigation Act has not yet been exercised. As a result, the works continue to vest in the Commissioner of Lands, while all business concerning the supply of water from the works is transacted by the Works Manager of the Rio Cobre Irrigation Works (under the Rio Cobre (Delivery of Water) Order, 1972).

200/ See sect. VII.B above.

201/ See sect. V.C and VIII above.

202/ See sect. V.F above.

203/ Milk River Bath Act, sects. 4 and 7, and Second Schedule, sects. 1 and 12; Bath of St. Thomas the Apostle Act, sects. 2, 3, 7 and 14.

204/ Effected by the National Water Authority (Change of Name and Amendment) Act, 1980. The Kingston and St. Andrew Water Commission used to be responsible for public water supply and sewerage services limited to the parishes of Kingston and St. Andrew, under the since repealed Kingston and St. Andrew Water Commission Act. The National Water Authority had instead responsibility for comparable services in the remainder of the island, under the since amended National Water Authority Act.

205/ National Water Commission Act, sects. 4, 11, 12, 19 and 29. See also the Kingston Improvements Act, sects. 8-9, and sects. V.B and VI.C above.

206/ National Water Commission Act, sect. 3 (1).

207/ Ibid., First Schedule, sects. 1, 3 (1), (3) and 4.

Notes (continued)

- 208/ National Water Commission Act, sect. 18 (1).
- 209/ Underground Water Control Act, sect. 4. See also sect. VIII above.
- 210/ Underground Water Control Act, sect. 3 (1).
- 211/ Underground Water Control Act, Schedule, sects. 1, 3 (1) and 4.
- 212/ Underground Water Control Act, sect. 19.
- 213/ Watersheds Protection Act, sects. 4, 5, 8 (1), 10 (1), 11 (1) and 16.
See also sect. X.B above.
- 214/ Watersheds Protection Act, sect. 3 (1).
- 215/ Ibid., Schedule, sects. 1, 3 (1) and 4.
- 216/ Watersheds Protection Act, sect. 27.
- 217/ Town and Country Planning Act, sects. 3, 5 and 12. See also
sects. V.B.2, VI.C.2, VII.B, IX.A and B above.
- 218/ Town and Country Planning Authority (Composition Powers and Duties)
Order, 1977, sects. 2-4 and 8.
- 219/ River Rafting Act, sect. 4. See also sect. V.G above.
- 220/ River Rafting Act, Schedule, sect. 8 (1).
- 221/ Ibid., sects. 1 and 3 (1).
- 222/ River Rafting Act, sect. 8.
- 223/ Planning Institute of Jamaica Act, sect. 4 (1) (a) and (2) (e).
- 224/ Ibid., sect. 3 (1).
- 225/ Ibid., sect. 7 (1)-(2), and Schedule, sects 1, 2 (2) and 5.
- 226/ Planning Institute of Jamaica Act, sect. 5 (1).
- 227/ Quarries Control Act, sects. 6-7.
- 228/ Ibid., First Schedule, sects. 1, 3 (1) and 4.
- 229/ Black River (Upper Morass) Reclamation Act, sects. 3 (1), 7, 8, 9
and 12. See also sects. VI.C, IX.A and B above.
- 230/ Black River (Upper Morass) Reclamation Act, sect. 3 (1).
- 231/ Ibid., sect. 4 (1). The Board is subject to the supervisory authority of
the Minister of Local Government.

Notes (continued)

232/ Irrigation Act, sect. 56 (1)-(2). Through the end of 1983, three Irrigation Authorities had been created, namely, the Mid-Clarendon Irrigation Authority (in 1950); the Saint Dorothy Plain Irrigation Authority (in 1961); and the Hounslow Irrigation Authority (in 1969).

233/ Irrigation Act, sects. 5 and 20.

234/ Ibid., sect. 19 (1). See also sect. III.D above.

235/ Irrigation Act, sect. 57 (1).

236/ Ibid., sect. 56 (3)-(4).

237/ Land Authorities Act, sect. 23 (1). Through the end of 1983, 16 Land Authorities had been established, covering the entire island.

238/ Land Authorities Act, sects. 5, 7, 12 and 16.

239/ Ibid., sect. 24.

240/ Ibid., sect. 26 (1).

241/ Parishes Water Supply Act, sects. 4 and 6.

242/ Parish Councils Act, sect. 121 (1) (s).

243/ Ibid., sect. 121 (1) (y). The term "control" should be read in context with, and be qualified by, the reference to recreational uses of rivers.

244/ Parish Councils Act, sect. 121 (2).

245/ Town and Country Planning Act, sects. 11 (1) and 12 (1).

246/ Effected by the Kingston and St. Andrew Corporation Act, sect. 5.

247/ Town and Country Planning Act, sects. 11 (1) and 12 (1).

248/ Watersheds Protection Act, sect. 22.

249/ Ibid., sect. 23.

250/ Water Act, sects. 16-17.

251/ Ibid., sect. 18.

252/ Ibid., sect. 19.

253/ National Water Commission Act, sect. 19 (1) (a).

254/ Ibid., sect. 11 (1).

255/ Parishes Water Supply Act, sect. 16. See also the Parochial Water Works Charges Act, sect. 3.

Notes (continued)

256/ Parishes Water Supply Act, sect. 24 (a).

257/ Ibid., sects. 24 (b) and 25.

258/ Ibid., sect. 32 (1) (g); National Water Commission Act, sect. 24.

259/ Irrigation Act, sect. 47 (b)-(c).

260/ Ibid., sect. 21.

261/ Rio Cobre Canal Regulations, sect. 8.

262/ As expressly provided for, e.g., within the framework of (a) the "authorization" process with respect to non-riparian use of public water, or use of public water for hydropower generation purposes (Water Act, sect. 14 (1); Water (Non-Riparian Use) Regulations, sect. 3); or (b) the licensing process for the abstraction of underground water (Underground Water Control (Licensing) Regulations, sect. 5); or (c) the process of granting water rights in connection with mining or petroleum exploration and exploitation (Mining Act, sect. 51; Petroleum Act, sect. 24); or (d) the process of approval of land development plans (Town and Country Planning Act, sect. 6 (3) (d)).

263/ As expressly provided for, e.g., in connection with the grant of a right to make non-riparian use of public water, or to use public water for hydropower generation purposes (Water Act, sect. 14 (2)); and in connection with the statutory grant of a water right for purposes of prospecting for minerals (Mining Act, sect. 19 (1) (e)).

264/ As in the case of decisions rendered by the Water Courts in the exercise of their judicial functions (Water Act, sect. 39); or in the case of determinations made by the Underground Water Authority (Underground Water Control Act, sect. 15).

265/ Water Act, sect. 59 (1). These rights, however, are forfeited if not used for three consecutive years, after the enactment of the Act (ibid.).

266/ As provided for, among others, in the Water Act, sect. 62; the Watersheds Protection Act, sect. 9; the Irrigation Act, sects. 22 and 24; the National Water Commission Act, sect. 5; the Underground Water Control Act, sect. 5; and the Flood-Water Control Act, sect. 10.

267/ As provided for, among others, in the Water Act, sect. 60; and the Quarries Control Act, sect. 29.

268/ Underground Water Control Act, sect. 20 (1). It will be recalled that currently the entire island constitutes a "critical area" under the Act.

269/ Underground Water Control Act, sect. 20 (2). See also sect. X.A above.

270/ Water Act, sect. 66.

271/ Ibid., sect. 67.

272/ Irrigation Act, sect. 39 (1).

Notes (continued)

273/ Ibid., sect. 40.

274/ Mining Act, sect. 98, in connection with sect. 48; and Petroleum Act, sect. 28 (c) in connection with sect. 23 (1).

275/ Quarries Control Act, sect. 5 (3) (c).

276/ National Water Commission Act, sect. 28, in connection with sects. 25 and 26.

277/ As provided for in section 11 (1) (b) and (c) of the Quarries Control Act; and in section 56 (1) of the Mining Act, but not, for instance, in the Underground Water Control Act, or in the Water Act.

278/ Water Act, sects. 25 and 36. To this date, these and the other provisions of the Act concerning the Water Courts have never been put into effect.

279/ Water Act, sect. 26.

280/ Ibid., sect. 35 (1).

281/ Ibid., sect. 39.

282/ Ibid., sect. 38.

283/ Ibid., sect. 35 (2).

MONTSERRAT

INTRODUCTION

Montserrat is an island of the Leeward Islands group of the Lesser Antilles in the Caribbean Sea, with an area of 39.5 square miles and a population of 18,000 (1980). The island of Montserrat consists of a serrated range of volcanic peaks rising in three main hill masses, the summits of which are forested.

The economy of Montserrat is based mainly on agriculture; tourism and light industry are being encouraged. Once the main crop, sugar is no longer grown because supplemental irrigation during the dry months is unavailable. Banana, vegetables and cotton are currently exported. Poultry, cattle farming and peanuts are also important to the island's economy.

Water is fairly abundant, with rainfall averaging 46-50 inches in the north, and over 80 inches in the centre and south of the island. Springs are the main source of water supply in the island. A number of rivers are perennial, based on spring base flow.

Montserrat is a Crown colony of the United Kingdom of Great Britain and Northern Ireland. A ministerial system of government was introduced in 1960. The Executive Council is composed of four elected members and two ex officio members. The Legislative Council consists of a Speaker, two ex officio members, two nominated unofficial members and seven elected members.

I. LEGISLATION IN FORCE

The following statutes currently in force bear on the development, conservation and use of fresh water resources in Montserrat, and have been reflected in the present study:

1. Agriculture Ordinance, CAP 87 of the Revised Laws of Montserrat (1965 edition) (hereinafter referred to as the Revised Laws of Montserrat);
2. Building and Sanitary Regulations, CAP 197 of the Revised Laws of Montserrat;
3. Common Law (Declaration of Application) Act, CAP 14 of the Revised Laws of Montserrat;
4. Forestry Ordinance, CAP 95 of the Revised Laws of Montserrat;
5. Interim Water Supply Regulations, 1967, as amended;
6. Land Adjudication Ordinance, 1978, as amended;
7. Malicious Damage Act, CAP 49 of the Revised Laws of Montserrat;
8. Montserrat Land Development Authority Ordinance, 1971;
9. Montserrat Letters Patent, 1959, as amended;

10. Mosquito Control Regulations, CAP 209 of the Revised Laws of Montserrat;
11. Pesticides Control Ordinance, 1975;
12. Plymouth Improvement Ordinance, CAP 175 of the Revised Laws of Montserrat;
13. Prescription Ordinance, CAP 60 of the Revised Laws of Montserrat;
14. Public Health Ordinance, CAP 209 of the Revised Laws of Montserrat, as amended;
15. Public Health Ordinance, 1981;
16. Registered Land Ordinance, 1978, as amended;
17. Roads Ordinance, CAP 248 of the Revised Laws of Montserrat;
18. Rural District Boards Ordinance, CAP 160 of the Revised Laws of Montserrat;
19. Town and Country Development Planning (Plymouth and South-western Area) Control Order, 1966;
20. Town and Country Development Planning (General) Regulations, 1966;
21. Town and Country Planning Ordinance, 1975;
22. Underground Water Ordinance, 1967;
23. Water Authority Ordinance, 1972, as amended.

II. OWNERSHIP OR OTHER STATUS OF WATERS

All underground water resources in Montserrat are vested in the Crown 1/ and have public domain status. Springs, however, are implicitly excepted and follow the legal régime of surface waters. 2/

The legal status of surface waters, including springs, is quite complex. Various statutes in force in the past have given the central and local governments express authority to purchase surface waters and springs for public water supply purposes. 3/ Other statutes had granted the Government authority to purchase land for comparable purposes and, consistent with the principles of riparian common law, had explicitly conveyed to the Government the right to use watercourses and springs. 4/ Subsequent statutes granted the Government the authority to bring surface watercourses and springs within the regulatory framework of legal provisions for the supply of water to the public. These watercourses and springs would automatically be vested in the Crown. 5/ As a consequence, all the surface water resources and springs that have been purchased by or conveyed to the Government in the course of time have now, under current statutory law, either Crown property status or the status of property of the Water Authority. 6/ All other surface waters, including springs, follow the rules of common law, which does not admit of ownership of running water, but of control and use thereof by the owners of riparian land. However, springs which exhaust themselves within the confines of a landholding are to be regarded as the property of the owner of the relevant land.

III. RIGHT TO USE WATER

A different legal régime applies with respect to (a) the abstraction and use of underground water, and (b) the diversion and use of surface waters.

The abstraction and use of all underground water resources is subject to a licence from the Minister in charge of water resources. Specific provisions regulate the licensing process, including the protection of affected interests and judicial review of administrative determinations. 7/ Underground water abstractions which were in effect at the time the licensing system took effect, however, have been exempted from licensing requirements. Depending on their respective legal titles, those abstractions were either left undisturbed 8/ or subjected to registration and reporting requirements. 9/

The diversion and use of surface waters, including springs, which are found in water-controlled areas, 10/ are subject to a licence from the Minister in charge of water resources. However, diversions which have been in effect in any given water-controlled area immediately before 1 January 1972, or which are in effect in any such area by virtue of an agreement between the Government and the water user, are exempted from the licensing requirements. Water diverted in excess of the user's entitlement, however, is not covered by the exemption. 11/ Unlike ground-water abstraction licences, the licensing process for surface water diversion and use is not regulated by current statutory law.

The diversion and use of surface waters, which are not subject to special protective measures, follow the rules of common law, 12/ whereby a right to take and use running surface waters accrues to the owner or occupier of riparian land, subject to the equal rights of other riparian landowners. Springs, in particular, follow the riparian régime if they form a watercourse. 13/ Those which exhaust themselves within the confines of a given landholding, however, may be regarded as subject to the landowner's exclusive right of enjoyment and use. The latter rights, and riparian water use rights, can be acquired with the transfer of the relevant land or separately from the land. 14/ In particular, current legislation permits the government Water Authority to acquire - in compulsory fashion if need be - the right to take and use water from any source for its statutory purposes. 15/

Riparian water rights being imprescriptible, prescription running for 20 or 40 years according to cases can be regarded as a valid mode of acquiring a water right in springs which are the landowner's property. 16/

IV. LEGISLATION ON BENEFICIAL USES OF WATER

The beneficial uses of water in Montserrat can be conveniently grouped under the water supply umbrella, and relevant legislation reviewed from the standpoint of (a) provision and regulation of water supply services to the public; (b) building and planning regulations; and (c) public health aspects.

A. Water supply services

The provision of water supplies to the public for domestic and non-domestic consumption, as well as related construction, operation and maintenance activities, is the responsibility of the Montserrat Water Authority. The extension of the

distribution system to newly developed areas, however, is the responsibility of the relevant developer, but the Authority retains technical control over the construction activity, ownership of the facilities installed and responsibility for the maintenance thereof. 17/ The Authority has, in addition, an exclusive franchise for the sale of water for domestic consumption in the island. 18/

Connections to the public distribution system can only be effected on application to the Authority in buildings and houses which meet with the Authority's approval, and by personnel authorized by the Authority. 19/ An application to the Authority is also required for the supply of water to ships. 20/ Water supplied for domestic or non-domestic consumption can be metered by the Authority free of meter rental charge to the consumer. 21/ All water supplied by the Authority is charged for according to the water rates in effect, and all services rendered by the Authority are charged a fee. 22/

B. Building and planning regulations

The conveyance of water into the premises supplied by the Authority is regulated from a construction standpoint with regard to the size of pipes and the kinds of fittings to be employed in connection with the service. Restrictions apply to the size of baths in the premises served by the Authority, and the latter's permission is required for the installation of tanks for the storage of water supplied by the Authority. 23/

In addition, the construction and maintenance of water supply distribution systems at large are subject to the land use planning regulations currently in effect. Under existing legislation, all construction activities - including, by implication, those carried out by the Authority for the fulfilment of its mandate - are subject to a planning permission from the Development Control Authority. 24/ However, repair works to public utilities installations or services - including, by implication, works by the Water Authority - are exempted from the planning permit requirements. 25/

The Development Control Authority is further empowered to regulate "water supply" within the framework of the land use regulatory authority devolving upon it. 26/

C. Public health aspects

Responsibility for the wholesomeness of water supplied to the public by the Authority rests with the latter. 27/ Corresponding regulatory authority vests, however, in the Governor-in-Council. 28/

Separate regulations provide for the wholesomeness of water employed in the manufacture of aerated beverages. 29/

V. LEGISLATION ON THE HARMFUL EFFECTS OF WATER

Current legislation on the harmful effects of water covers (a) drainage and sewerage, (b) control of soil erosion, and (c) flood control, and will be reviewed accordingly.

A. Drainage and sewerage

Land drainage comes within the purview of legislation on land use controls, road construction and maintenance, and adjudication of interests in land.

By virtue of the land use control legislation in effect, all works for the drainage of land are, by implication, subject to prior clearance with the Development Control Authority. 30/ However, land drainage works carried out by government departments or agencies are expressly exempted from the clearance requirements. 31/ Roads regulations empower the Government to provide drains for the drainage of public roads and penalize anyone who interferes therewith. In addition, it is the duty of concerned landowners to prevent damage to public roads from the run-off of storm water, and to remedy any damage resulting from their negligence. 32/ Finally, within the framework of the process of adjudicating claims to land, the adjudication officer is empowered to enter the reservations he deems necessary to effect the better drainage of adjoining lands. 33/

The public health legislation provides for the drainage of dwelling houses in the town of Plymouth. 34/

Sewerage appears to be regulated from a land use control viewpoint only. While sewerage works are implicitly subject to prior clearance from the Development Control Authority, works carried out by government departments or agencies are expressly exempted from the clearance requirements. 35/ In addition, the Development Control Authority is empowered to regulate "sewerage" within the framework of the land use regulatory authority vested in it. 36/ The provision of sewerage services to the public is not regulated by existing legislation.

B. Soil erosion

Under the soil conservation legislation in force, agriculturalists at large have the responsibility of preventing surface waters from causing soil erosion in the course of agricultural land management operations. This responsibility is enforceable by the Government in assuming direct control over land management operations at fault, which may thereby become subject to restrictions and requirements in the interest of soil conservation under penalty of a fine or imprisonment, and direct execution of works by the controlling authority. Furthermore, it is the concerned agriculturalists' responsibility to maintain anti-erosion works carried out under an order of the Government, subject to a fine and/or imprisonment. 37/

Similar restrictions are in effect with respect to the lease of farm holdings by the Land Development Authority for land settlement purposes. 38/ Furthermore, under general legislation and by virtue of the meaning which the technical term "good husbandry" is given by the specialized legislation reviewed above, every contract for the lease of agricultural land carries the implied obligation of the lessee to prevent soil erosion in the course of farming operations, under penalty of the termination of the contract by the lessor. 39/

Finally, the forestry legislation provides that any land can be declared a protected forest for purposes of, among others, controlling soil erosion. 40/

C. Flood control, overflow and bank protection

Significant zoning-type regulations for the prevention of flood damage are in effect in the town of Plymouth, whereby sites which are liable to flood damage can be designated for a ban on the construction of buildings under penalty of a fine up to \$EC 240. 41/

In addition, within areas that can be designated for water conservation purposes, a licence from the Water Authority is required for the cultivation of land in the immediate vicinity of surface water bodies, under penalty of a fine of up to \$EC 250 or imprisonment for up to three months or both, and an additional daily fine up to \$EC 10 for a continuing offence. 42/ To the extent that this provision seeks to protect the banks of rivers and streams, and the shores of lakes, the licensing requirement mentioned above can be directly instrumental in preventing overflow and consequent flooding. Furthermore, the act of damaging or destroying with malicious intent the banks of rivers thereby exposing land and buildings to overflow is punished with imprisonment up to three years. 43/

VI. LEGISLATION ON WATER USE, QUALITY AND POLLUTION CONTROL

A. Waste and misuse of water

Detailed legislative provisions deal with the waste and misuse of water supplied by the Water Authority, whether through private or public connections. Consumers who waste or misuse water on account of their damaging or tampering with the water fittings in place, or on account of negligence in repairing them, are penalized with a fine of up to \$EC 100, and with the discontinuance of the service for as long as the waste or misuse is allowed to continue. 44/ The service can be discontinued also in a number of specific instances of wastage of water supplied to private connections. 45/ Consumers with private connections are under an obligation to report to the Water Authority any leaks, damages or defects to the pipes and fittings. 46/

With specific regard to public standpipes, the use thereof is restricted to the filling of receptacles only, under penalty of a fine of up to \$EC 120. 47/ Furthermore, the Water Authority is empowered by law to close or lock off any tap or standpipe which is left running. 48/

The Water Authority is further empowered to meter private connections and to bill consumers accordingly. 49/ To the extent that consumers are thereby deterred from wasteful practices, metering can be instrumental in fostering the conservation of water. 50/

The "improper" abstraction from its source of water, which belongs to a public water supply system operated by the Water Authority, and the waste thereof are specifically forbidden under penalty of a fine up to \$EC 250 or imprisonment for up to three months or both, and to an additional daily fine up to \$EC 10 for as long as the offence continues. 51/

B. Pollution prevention and control

A specific ban on activities liable to pollute the waters of springs, rivers, lakes and other surface water bodies at large is in effect within areas which the Government has authority to designate for water resources conservation and protection purposes. Bathing, washing and discharging wastes - including sewerage-borne wastes - in surface water bodies are accordingly forbidden without exceptions, subject to a fine up to \$EC 250 or imprisonment up to three months or both, and to an additional daily fine up to \$EC 10 for as long as the violation continues. 52/

For pollution prevention purposes, health regulations prescribe that in disposing of night soil from houses outside the town of Plymouth a minimum given safety distance from watercourses must be observed. 53/ The prevention of water pollution may further be within the scope of regulations to be issued by the Government for controlling the use of pesticides in agriculture. 54/

Separate regulations are in effect for the prevention and control of pollution of public water supplies. Specific activities liable to pollute water supplies belonging to a scheme operated by the Water Authority are banned, and the ban sanctioned with a fine up to \$EC 250 or imprisonment up to three months or both, and an additional daily fine up to \$EC 10 for as long as the banned activities continue. These include bathing, washing and disposing of wastes - including sewerage-borne wastes - in the reservoirs, springs, lakes and wells which form part of a water supply scheme as defined above, and bathing and washing at public standpipes. 55/

The contamination of public water supplies provided by the Water Authority resulting from acts of omission or commission by consumers is separately punished with a fine up to \$EC 100. 56/ In addition, the Water Authority may disconnect the service. 57/

The act of putting lime or "noxious material" into ponds, reservoirs, pools and water at large with malicious intent is separately penalized with the stiffer penalty of imprisonment up to three years. 58/

C. Public health protection

Detailed regulations exist for the prevention and control of mosquitoes. Regulations in force prescribe, among others, measures to be taken with regard to wells, roof gutters and receptacles for the storage of water and the drinking of animals. 59/ Additional specific mosquito-control regulations are in effect in the town of Plymouth. 60/

VII. GROUND-WATER RESOURCES CONTROL AND PROTECTION

Full government control is effected by current legislation over the exploration for, and the exploitation of, underground water resources. As previously noted, all underground water resources in Montserrat are vested in the Crown 61/ and have public domain status. Accordingly, they can be abstracted and used for any purpose subject to the grant of a government licence, and to attendant terms and conditions. The unlicensed abstraction of underground water and the breach of the terms and conditions of a licence are penalized with a fine up to

\$EC 500 or imprisonment up to six months. The breach of conditions in the licence may further entail the cancellation of the licence. 62/ Furthermore, the search and exploration of land for underground water are subject to a government permit distinct from, and additional to, the exploitation licence mentioned above. 63/ Governmental control over exploratory activities is enhanced by the obligation of permittees to report to the Government promptly should underground water be struck in the course of permitted operations. In the latter event, the owners or occupiers of the relevant land are under an obligation to take measures for the conservation of the water. Failure to report the striking of underground water or to take the necessary water conservation measures is penalized with a fine up to \$EC 50 or imprisonment up to three months. 64/

The protection of ground-water quality by and large escapes the scope of current legislation. It is only with respect to "wells" which form part of a public water supply scheme operated by the Water Authority that current regulations ban all activities liable to cause water pollution. 65/ Other wells and underground water resources at large are not protected from direct or indirect threats, such as the disposal of liquid wastes on or under the ground.

VIII. CONTROL AND PROTECTION OF WATERWORKS AND STRUCTURES

Legislation exists on the technical and administrative control over the construction, operation and maintenance of water supply lines, and on their protection from man-made interference.

The Water Authority has by law responsibility for operating and maintaining its own water supply schemes and related works and facilities. 66/ In addition, the Water Authority is empowered to lay down uniform standards of construction for all water supply schemes and related works and facilities at large. 67/ Man-made damages to the water supply lines and installations of the Water Authority are punished with a fine up to \$EC 250 or imprisonment up to three months or both. 68/

In addition, damaging or breaking waterworks such as dams, river banks and drains with malicious intent is punished with imprisonment up to three years. 69/

IX. DECLARATION OF PROTECTED AREAS

Under current legislation the Governor-in-Council has authority to designate any area in Montserrat for joint water quality protection and controlled water abstraction and use. Designation orders made by the Governor are subject to confirmation by the Legislature. As a result of the designation of an area as a water-controlled area, a number of specific activities liable to encroach on the quality of waters therein are absolutely forbidden, while other activities that affect the availability of water are placed under direct government control. Accordingly, a government permit is required for land uses which are liable to interfere with the banks of watercourses and the shore of lakes and ponds. In addition, and subject to exceptions, a government permit is required for the abstraction and use of water. The above-mentioned restrictions are all equally sanctioned with a fine up to \$EC 250 or imprisonment up to three months or both, and with an additional daily fine up to \$EC 10 for as long as an offence continues. 70/

It should be noted that, by virtue of pertinent statutory language, the provisions outlined above are available only for the protection of surface water bodies, including springs. 71/

X. GOVERNMENT WATER RESOURCES ADMINISTRATION

The principal centres of governmental responsibilities for the development, conservation and use of water resources in Montserrat at the central level of government are the Minister in charge of water and the Montserrat Water Authority.

The Minister in charge of water is responsible for the administration of the licensing system in effect with regard to the exploitation of underground water resources, 72/ and for the administration of the permit system in effect with regard to the exploitation of surface waters within designated water control areas. 73/

The Montserrat Water Authority is responsible for the provision of water supply services to the public, and enjoys an exclusive franchise for the sale of water for domestic use. 74/ For the above statutory purposes, the Authority is empowered to execute, operate and maintain the necessary works, acquire the necessary land and water rights, as well as levy water rates and charges. 75/ In addition, the statutory responsibilities of the Authority include the licensing of land uses liable to affect the banks and shores of surface water bodies within designated water control areas. 76/ The Authority further has rule-making power for the regulation of the water supply service. 77/

The Authority is a body corporate, 78/ consisting of not less than five and not more than seven members. The Financial Secretary and the Senior Medical Officer are ex officio members of the Authority. All of the other members, including a chairman, are appointed by the Governor and serve at his pleasure. 79/ An Engineer Manager appointed by the Governor on the recommendation of the Authority is the chief executive officer of the Authority. 80/ The Authority reports to the Minister in charge of water resources, 81/ and it operates within the policy guidelines which the Governor-in-Council has express authority to lay down. 82/

Other central government agencies and departments with water-related responsibilities include:

(a) Montserrat Land Development Authority. Within the framework of its statutory responsibility for the development of agricultural land, the Authority is empowered to undertake soil and water conservation works, and works for the provision of water supplies. 83/ The Authority is a body corporate, 84/ consisting of not less than five and not more than seven members appointed by the Governor. The Financial Secretary and an official from the Ministry in charge of lands are ex officio members of the Authority. 85/ The Authority reports to the Minister in charge of lands, 86/ and it operates within the framework of policy guidelines laid down by the Governor-in-Council; 87/

(b) Development Control Authority. Within the framework of its regulatory responsibility for land use planning and control, the Authority is empowered to regulate, among others, water supply and sewerage works. 88/ In addition, the Authority administers the land use permit system which, by implication, applies to works for the development and conservation of water resources. 89/ The Authority's

membership is made up mostly of ex officio members in representation of a broad spectrum of government departments; 90/

(c) Agricultural Lands Authority. The Authority, consisting of seven gubernatorial appointees, functions in a judicial capacity as judge of first instance of appeals from government soil conservation orders made to individual agriculturalists whose lands have been placed under direct government control; 91/

(d) Ministry in charge of agriculture. The Ministry administers the soil erosion prevention and control regulations on the management of agricultural lands; 92/

(e) Ministry in charge of health. The Ministry administers the public health legislation, including regulations on the control and abatement of nuisances. 93/

Finally, the role and authority of the Governor as chief executive of the Government of Montserrat 94/ in water-related affairs should not be overlooked. The Governor has the power to grant the authorizations required for underground water exploration activities, 95/ to designate water-controlled areas 96/ and to place the management of agricultural lands under direct government supervision for soil conservation purposes. 97/ He also retains policy-making authority over the Montserrat Water Authority 98/ and the Montserrat Land Development Authority, 99/ and has power to appoint members and the chief executive officer of both Authorities. 100/

At the local level of government, Rural District Boards have authority to regulate locally the prevention and control of nuisances. 101/ Local regulations, however, are arguably subordinate to national public health regulations.

XI. WATER RATES, CHARGES AND FINANCIAL POLICIES

Subject to the approval of the Governor-in-Council, the Water authority is empowered to fix and levy rates and charges with respect to the water it supplies, and fees with respect to all the services it renders to the public. 102/ It is government policy that the water supply rates, charges and fees generate a flow of revenue sufficient to cover all the outlays of the Authority in any one year. 103/

The water supply rate is structured to reflect whether water is supplied for domestic as opposed to non-domestic consumption, and whether the supply is metered or unmetered. Metered domestic and non-domestic supplies are charged a fixed fee equivalent to 5 per cent each year of the annual taxable value of the premises served. In addition, a fee of \$EC 5 and \$EC 5.50 per 1,000 gallons is charged to domestic and non-domestic consumers, respectively. However, the first 4,000 gallons of water supplied for domestic use on a quarterly basis are free of charge.

For non-metered domestic connections, the fee is \$EC 20 per building or 4 per cent each year of the annual taxable value of the property served, whichever is the greater. Non-metered, non-domestic connections are charged a fee equivalent to 5 per cent each year of the annual taxable value of the property served, or \$EC 5.50 per month, whichever is the greater. A minimum charge of \$EC 20 per year, and \$EC 5.50 per month, is in effect with respect to non-domestic and domestic connections, respectively.

A separate charge of 1 per cent each year of the annual taxable value of the property is levied on any lot of undeveloped land having a water main running over or under it or adjacent to its boundaries. Still another separate charge of \$EC 12 per 1,000 gallons is levied with respect to water used in the course of construction of buildings, and for the duration of the construction. 104/

Current legislation provides for standby authority to levy charges with respect to the abstraction and use of underground water. 105/ Corresponding authority arguably rests with the Governor 106/ and, to the author's knowledge, it has not been exercised as yet.

The Government also has authority to advance - against payment of interest - the sums needed by agriculturalists to carry out soil conservation works required under the authority and supervision of the Government. 107/

XII. IMPLEMENTATION OF WATER LAWS AND REGULATIONS

In the present section legislative provisions on the protection of rights and interests in water resources, as well as on the enforcement of water and water-related legislation and regulations will be reviewed.

Water rights, which pre-date the inception of direct government control over all abstractions of surface waters as a result of the designation of the relevant area as a water resources controlled area, are left by law undisturbed. They can continue free of governmental interference limited, however, to the fullest extent permitted under a pre-existing written arrangement between the Government and the water user, or allowed by the fact of having abstracted water on or before a given cutoff date. 108/ Also, ground-water abstraction rights which pre-dated the inception of direct government controls as a result of the enactment of the Underground Water Ordinance have been left thereby substantially undisturbed according to the title and seniority of use. 109/

The protection of water rights is further effected in connection with the compulsory acquisition of water rights by the Water Authority for the pursuit of its statutory purposes. It is stipulated by the law that due publicity must be given to the proposed action, and that all water rights holders thereby affected be afforded an opportunity to be heard in the process and be compensated for the loss of their rights or interests. 110/

The review of governmental determinations made in the course of administering water and water-related laws and regulations arguably follows the general course available in redress from administrative determinations at large. Decisions made by the Minister in charge of water resources as a result of the process of licensing underground water abstractions can be appealed before the Supreme Court. 111/ Also, government determinations made for soil conservation purposes further to the placement of agricultural land management operations under direct government control can be challenged before the Agricultural Lands Authority - a special tribunal whose decisions can be challenged before the Governor. 112/

Penalties, pecuniary or otherwise, sanction most regulatory provisions related to the use and protection of fresh water resources, and have been reviewed in previous sections in conjunction with substantive regulations. It is worth recalling, at this juncture, that specific penalties separately sanction the permit system in effect with respect to the abstraction and use of underground water, and

to the abstraction and use of surface waters within designated water controlled areas, respectively. A fine up to \$EC 500 or imprisonment up to six months is contemplated with respect to the abstraction and use of underground water without a government licence. The same penalties further apply with respect to the breach of any term or conditions under which an underground water abstraction licence has been granted, and the licence itself may be cancelled. Furthermore, works done without a licence or in defiance of its terms and conditions may be ordered torn down. 113/ These sanctions are contrasted by a fine up to \$EC 250 or imprisonment up to three months or both, and by an additional daily fine up to \$EC 10 for as long as the offence continues, with respect to the abstraction and use of surface waters in a designated water controlled area without a government permit. 114/

It will be further recalled that the Water Authority is empowered to disconnect service to water supply systems if consumers waste or misuse or contaminate the water supplied to them, or fail to pay their utility bills. 115/

For law enforcement purposes, the responsible government officials are granted by law authority to enter premises, and authority to effect the direct execution of governmental or court orders made in connection with, among others, the control and protection of public water supplies, 116/ the control and protection of underground water resources, 117/ the protection of public health - including, in particular, abatement and control of nuisances - 118/ mosquito control operations, 119/ prevention and control of soil erosion as a result of land cultivation practices 120/ and land use control. 121/

Notes

1/ Underground Water Ordinance, sect. 3.

2/ This can be argued from the statutory definition of "surface water" and "underground water" in the Underground Water Ordinance, sect. 2.

3/ See the Water Works (Poor House) Ordinance No. 6 of 1886, sect. 2 (in the 1921 Revised Edition of the Statutes of Montserrat (p. 85)); and the Water Supply (Country Districts) Ordinance No. 1 of 1891, sect. 4 (in the 1921 Revised Edition of the Statutes of Montserrat (p. 111)). The first ordinance on the subject of waterworks, namely, the Water Works Ordinance No. 11 of 1879, was omitted in the above compilation of the laws of Montserrat and, as a consequence, was unavailable for consultation. All of the above ordinances are no longer in effect.

4/ See the Plymouth Water Works Ordinance No. 9 of 1921, sect. 9. The ordinance is no longer in effect.

5/ Watercourses and Water Works Ordinance, 1952 (CAP 171 of the 1965 Revised Edition of the Laws of Montserrat), sects. 3 and 17; Water Authority Ordinance No. 14 of 1967, sect. 3; and Interim Water Supply Ordinance No. 17 of 1967, sect. 3. All three ordinances are no longer in effect.

6/ Water Authority Ordinance, sect. 20; and Interim Water Supply Ordinance, 1967, sect. 3. The latter ordinance is no longer in force, but the legal effects of its sect. 3 are deemed to continue for want of an express intervening divestiture of property thereby vested in the Crown.

7/ Underground Water Ordinance, sect. 7.

Notes (continued)

8/ Ibid., sect. 4 (abstraction rights acquired pursuant to an agreement between the Government and the user of ground-water resources).

9/ Underground Water Ordinance, sect. 6 (abstraction from a well in place for 15 years or longer prior to the commencement of the Ordinance), and sect. 5 (abstraction from a well in place for less than 15 years prior to the commencement of the Ordinance, whether in progress at the time of commencement of the Ordinance or not). Abstractions which had been discontinued as of the time of commencement of the Ordinance were subjected to reporting requirements. The statute places no limit on how long before the commencement of the Ordinance an abstraction had to have been discontinued for the reporting requirements to be applicable (Underground Water Ordinance, sect. 5 (1)).

10/ See sect. IX below.

11/ Water Authority Ordinance, sect. 17 (4).

12/ Common Law (Declaration of Application) Act, sect. 2 (by implication).

13/ See F. J. Trelease, Water Law, 2nd ed. (1974), p. 57.

14/ On the transfer of riparian rights, see C. J. Meyers and A. D. Tarlock, Water Resource Management, 2nd ed. (1980), p. 368.

15/ Water Authority Ordinance, sect. 19.

16/ Prescripton Act, sect. 3 (by implication).

17/ Water Authority Ordinance, sects. 5 (2) (a), (d)-(e), 21 and 22.

18/ Ibid., sect. 23 (1).

19/ Interim Water Supply Regulations, sects. 3 (1)-(2) and 11.

20/ Ibid., sect. 23.

21/ Water Authority Ordinance, sect. 24 (1); and Interim Water Supply Regulations, sect. 17.

22/ See sect. XI below.

23/ Interim Water Supply Regulations, sects. 4, 8-10 and 18. Additional regulatory authority in this regard is provided the Water Authority by sects. 5 (2) (c) and 32 (b) of the Water Authority Ordinance.

24/ Town and Country Planning Ordinance, sect. 6 (1) (a).

25/ Ibid., sect. 6 (2) (d), in relation to the Schedule annexed to the Ordinance, No. 4; see also the Town and Country Development Planning (Plymouth and South-western Area) Control Order, sects. 4 (2) and 5, in relation to the Second Schedule annexed to the Order, Class IX Development Descriptor.

26/ Town and Country Planning Ordinance, sect. 14 (1) (a).

Notes (continued)

- 27/ Water Authority Ordinance, sects. 5 (1), (2) (e) and 22 (1) (a).
- 28/ Public Health Ordinance, sect. 8 (1) (f).
- 29/ Building and Sanitary Regulations, sect. 40.
- 30/ Town and Country Planning Ordinance, sect. 6 (1) (a).
- 31/ Town and Country Development Planning (Plymouth and South-western Area) Control Order, sects. 4 (2) and 5, in relation to the Second Schedule annexed to the Order, Class XI-A Development Descriptor. The exemption, however, is limited to the area of the island delimited in the First Schedule to the Order.
- 32/ Road Ordinance, sects. 10, 12 and 13.
- 33/ Land Adjudication Ordinance, sect. 12 (1) (c).
- 34/ Public Health Ordinance, CAP 209, sects. 3 (1)-(2) and 10.
- 35/ Town and country Planning Ordinance, sect. 6 (1) (a); and Town and Country Development Planning (Plymouth and South-western Area) Control Order, sects. 4 (2) and 5, in relation to the Second Schedule annexed to the Order, Class IX Development Descriptor. The exemption, however, is limited to the area of the island delimited in the First Schedule to the Order.
- 36/ Town and Country Planning Ordinance, sect. 14 (1) (a).
- 37/ Agriculture Ordinance, sects. 4, 5 (2) (c)-(d), 6 (1), 9 and 14. All expenses incurred by a lessee in complying with orders issued under the Ordinance are subject to be compensated by the lessor at the termination of the lease (ibid., sect. 19).
- 38/ Montserrat Land Development Control Authority Ordinance, sects. 21 (d) and 23.
- 39/ Registered Land Ordinance, sects. 53 (c) and 55 (1) (a).
- 40/ Forestry Ordinance, sect. 9 (1), in conjunction with sect. 12 (5) (b) (ii).
- 41/ Plymouth Improvement Ordinance, sect. 8. It should be noted that, in addition to the fine, sect. 8 makes reference to sect. 15 of the since repealed Board of Health Ordinance, whereby the courts were empowered to order the demolition of buildings constructed in breach of the regulation at hand. The Board of Health Ordinance has since been repealed by the 1981 Public Health Ordinance, however, and the authority of the courts under the former statute has not been retained in the new statute.
- 42/ Water Authority Ordinance, sect. 17 (3) (b), and Proviso on the designation of areas for water resources conservation and protection purposes. See sect. IX below.
- 43/ Malicious Damage Act, sect. 25.

Notes (continued)

44/ Water Authority Ordinance, sects. 29 and 30. Additional regulations are called for on the prevention of waste and misuse of water supplied by the Authority, and on the discontinuance of the service (ibid., sect. 32 (g) and (i)).

45/ Interim Water Supply Regulations, sect. 16 (d) in conjunction with sect. 19.

46/ Ibid., sect. 13.

47/ Ibid., sect. 28 (4)-(5).

48/ Water Authority Ordinance, sect. 31; and Interim Water Supply Regulations, sect. 22.

49/ Water Authority Ordinance, sect. 24 (1); and Interim Water Supply Regulations, sects. 17 and 21.

50/ See, in particular, sect. 21 of the Interim Water Supply Regulations.

51/ Water Authority Ordinance, sect. 33 (j).

52/ Ibid., sect. 17 (3) (d)-(h) and (5).

53/ Building and Sanitary Regulations, sect. 6.

54/ Pesticides Control Ordinance, sect. 3 (1) (c).

55/ Water Authority Ordinance, sect. 33 (a)-(g) and (k).

56/ Ibid., sect. 29.

57/ Ibid., sect. 30.

58/ Malicious Damage Act, sect. 26.

59/ Mosquito Control Regulations, sects. 2-12, 14 and 15.

60/ Buildings and Sanitary Regulations, sects. 8 and 12.

61/ Underground Water Ordinance, sect. 3. See also sect. II above.

62/ Ibid., sects. 7 (1) and 8. See also sect. III above.

63/ Ibid., sect. 9.

64/ Ibid., sect. 13.

65/ Water Authority Ordinance, sect. 33 (e)-(g) and (j), in relation to the statutory definition of "waterworks" (sect. 2). See also sect. VI.B above.

66/ Water Authority Ordinance, sect. 5 (2) (d).

67/ Ibid., sect. 5 (2) (c).

Notes (continued)

68/ Ibid., sect. 33 (i).

69/ Malicious Damage Act, sects. 25-27.

70/ Water Authority Ordinance, sect. 17. See also sects. III and VI.B above.

71/ Ibid., sect. 17, in relation to sect. 2, definition of the term "watercourse".

72/ Underground Water Ordinance, sect. 7 (5). See also sects. III and VII above.

73/ Water Authority Ordinance, sect. 17 (4). See also sects. III and IX above.

74/ Ibid., sects. 5, 22 (1) and 23. See also sect. IV above.

75/ Ibid., sects. 5 (2) (d), 18, 19, 21 and 32 (c). On water supply rates and charges, see also sect. XI below.

76/ Ibid., sect. 17 (3) (a)-(b) and proviso. See also sects. V.C and IX above.

77/ Ibid., sect. 32.

78/ Ibid., sect. 3 (1).

79/ Ibid., sect. 4.

80/ Ibid., sect. 14 (1).

81/ Ibid., sect. 40.

82/ Ibid., sect. 16.

83/ Montserrat Land Development Authority Ordinance, sects. 5 (2) and 20 (2). See also sect. V.B above.

84/ Ibid., sect. 3 (1).

85/ Ibid., sect. 4.

86/ Ibid., sect. 33.

87/ Ibid., sect. 17.

88/ Town and Country Planning Ordinance, sects. 5 (3) and (11), 6 (1) (a) and 14 (1) (a).

89/ Ibid., sect. 8 (1). It will be recalled, however, that most public drainage and irrigation works, and water supply and sewerage works, are exempt from the land use permit requirements (see sects. IV.B and V.A above).

Notes (continued)

90/ Town and Country Planning Ordinance, sect. 3 (1).

91/ Agriculture Ordinance, sects. 10 and 11. See also sect. V.B above.

92/ Ibid., sect. 9.

93/ Public Health Ordinance, sect. 4 (1) (c). Gubernatorial regulations for the implementation of the Ordinance - as called for by sect. 8 (1) (g) of the statute - not having been made, it was not possible to ascertain the exact nature and extent of the water-related responsibilities of the Minister in charge of health.

94/ Under the Montserrat Letters Patent, sect. 11 (2).

95/ Underground Water Ordinance, sect. 9 (1). See also sect. VII above.

96/ Water Authority Ordinance, sect. 17 (1). See also sect. IX above.

97/ Agriculture Ordinance, sect. 6 (1). See also sect. V.B above.

98/ Water Authority Ordinance, sect. 16.

99/ Montserrat Land Development Authority Ordinance, sect. 17.

100/ Ibid., sects. 4 (2) and 15 (1); and Water Authority Ordinance, sects. 4 (2) and 14 (1).

101/ Rural District Boards Ordinance, sect. 21 (a). See, however, the considerations made in footnote 94 above on the subject of national public health regulations.

102/ Water Authority Ordinance, sect. 32 (c)-(e).

103/ Ibid., sect. 27.

104/ Interim Water Supply Regulations, sect. 25, as lastly amended by the Interim Water Supply (Amendment) Regulations, 1982. The rates and charges thereunder came into effect on 1 February 1982.

105/ Underground Water Ordinance, sect. 14.

106/ Ibid., sect. 15 (1) (by implication).

107/ Agriculture Ordinance, sects. 15 and 16. See also sect. V.B above.

108/ Water Authority Ordinance, sect. 17 (4). See also sect. III above.

109/ Underground Water Ordinance, sects. 4, 5 and 6. See also sect. III above.

110/ Water Authority Ordinance, sect. 19 (3).

111/ Underground Water Ordinance, sect. 7 (7).

Notes (continued)

112/ Agriculture Ordinance, sects. 10 and 13.

113/ Underground Water Ordinance, sect. 8. See also sect. III above.

114/ Water Authority Ordinance, sect. 17 (5). See also sects. III and IX above.

115/ Water Authority Ordinance, sect. 30; and Interim Water Supply Regulations, sect. 16.

116/ Water Authority Ordinance, sect. 26 (1).

117/ Underground Water Ordinance, sects. 8 and 12.

118/ Public Health Ordinance, sects. 9 (11) and 13 (1) (a)-(c). See, however, the considerations made in footnote 94 above.

119/ Mosquito Control Regulations, sect. 21; and Building and Sanitary Regulations, sect. 11. See also sect. VI.C above.

120/ Agriculture Ordinance, sects. 7 (1) and 9 (4).

121/ Town and Country Planning Ordinance, sects. 10 (9) and 16 (1). See also sects. IV.B and V.A. above.

ST. KITTS AND NEVIS

INTRODUCTION

The twin islands of St. Kitts and Nevis are located in the Lesser Antilles, and form part of the group of islands known as the Leeward Islands.

St. Kitts, containing a population of 35,000, is a fertile volcano island, with an area 68 square miles and a central mountain range having its highest peak rise to 3,792 feet.

Nevis, also of volcanic origin, is an oval island, containing an area 35 square miles with a central peak rising to a height of 3,232 feet and having a population of 9,300. Nevis lies approximately four miles to the south of St. Kitts.

St. Kitts and Nevis enjoy a tropical climate. Because of the small size of the islands, and their being surrounded by sea, the effect of land and sea breezes produces a refreshingly cool atmosphere all year round. In both islands, from August to November is the wet season, and from January to April, the dry season. The average rainfall is 64 inches for St. Kitts and 49 inches for Nevis. Agriculture is the mainstay of the economy - primarily with 12,000 acres of sugarcane, but also with market garden farming, in part to serve the needs of the tourist industry.

There are four main sources of water supply on St. Kitts: direct rainfall, storm run-off, spring water and ground water. In Nevis, many private homes are built with cisterns to store rain water from the roof; long dry spells seriously reduce the yield of spring water. In St. Kitts, roof-caught water is seldom used. Another virtually unused source in St. Kitts is storm run-off. This is due to the porosity of the soil which allows water to disappear very quickly into the ground. Unlike St. Kitts, which has no suitable sites for impounding the surface run-off, Nevis has several small dams used mainly for stock watering. The clay nature of the soil provides a natural seal against seepage. Ground water has become more and more prominent in recent years as a source of supply; in St. Kitts today it accounts for 23 per cent of daily consumption, while in Nevis it is 60 per cent. Whereas no conventional sewer system exists, three piped water distribution systems operate in St. Kitts, and four in Nevis.

The State of St. Kitts and Nevis, formerly a British colony, became independent on 19 September 1983. According to the Constitution, the Queen is the Head of State, represented by the Governor-General. A Central Cabinet Government with a ministerial system and a National Assembly are located in St. Kitts. In Nevis, there is a Nevis Island Administration and a Nevis Island Assembly.

I. LEGISLATION IN FORCE

The following major pieces of legislation bear on the management, development and conservation of the water resources of St. Kitts and Nevis:

1. Agricultural Development Act 1973, No. 18 of 1973;
2. Building Ordinance, CAP. 284 of the Revised Edition (1961) of the Laws of St. Christopher, Nevis and Anguilla, 1/ as amended;

3. Building Regulations, CAP. 284 of the Revised Laws, as amended;
4. Common Law (Declaration of Application) Act, CAP. 14 of the Revised Laws;
5. Development and Finance Corporation Act 1968, No. 8 of 1968;
6. Electricity, Ice and Cold Storage Ordinance, CAP. 261 of the Revised Laws, as amended;
7. Emergency Powers Act 1967, No. 15 of 1967;
8. Emergency Powers (No. 3) Regulations 1967, No. 34 of 1967, as amended;
9. Forestry Ordinance, CAP. 92 of the Revised Laws, as amended;
10. Ice and Aerated Water Manufacturing (Nevis) Regulations, CAP. 226 of the Revised Laws;
11. Ice and Aerated Water Manufacturing (St. Christopher) Regulations, CAP. 226 of the Revised Laws;
12. Land Acquisition Ordinance, CAP. 273 of the Revised Laws, as amended;
13. Local Authorities (Powers and Duties) Regulations, CAP. 226 of the Revised Laws;
14. Local Government Act 1967, No. 20 of 1967, as amended;
15. Malicious Damage Act, CAP. 49 of the Revised Laws, as amended;
16. Mosquito Control Regulations, CAP. 226 of the Revised Laws;
17. National Agricultural Corporation Act 1975, No. 27 of 1975;
18. Pesticides Act 1973, No. 20 of 1973;
19. Prescription Act, CAP. 60 of the Revised Laws;
20. Public Health Act 1969, No. 22 of 1969, as amended;
21. Public Health (Establishment of a Board of Health) Order 1973, No. 4 of 1973;
22. Public Health (Nevis) Regulations, CAP. 226 of the Revised Laws;
23. Public Health (Nuisances) Regulations 1974, No. 10 of 1974;
24. St. Christopher, Nevis and Anquilla Constitution Order 1967, S.I. 1967, No. 228;
25. Slum Clearance and Housing Ordinance, CAP. 263 of the Revised Laws, as amended;
26. Town and Country Planning Ordinance, CAP. 264 of the Revised Laws, as amended;

27. Watercourses and Waterworks Ordinance, CAP. 185 of the Revised Laws, as amended;
28. Watercourses and Waterworks Regulations 1973, No. 33 of 1973, as amended;
29. Water Service Rates 1976, No. 23 of 1976.

II. OWNERSHIP OR CONTROL STATUS OF WATERS

According to the legislation in force, all ponds, springs and streams which had been vested in the Crown prior to the 1956 Watercourses and Waterworks Ordinance, and those which were declared subject to the Ordinance's provisions by an ad hoc determination of the administrative authorities, fall, in principle, under direct government control. 2/ In addition, reservoirs and tanks which had been built for public water supply purposes prior to the 1984 Waterworks Ordinance, and those likewise built pursuant to the 1956 Watercourses and Waterworks Ordinance - including wells - are automatically vested in the Crown 3/ and are subject, in principle, to government control. 4/

It is unclear whether the placing of "wells" under direct government control extends to as yet untapped ground-water resources at large. If this were the case, the régime of governmental control would override the otherwise applicable common law rules on ground water ownership and utilization.

Surface and, subject to the above proviso, underground waters which are not subjected to government control follow the rules of common law. According to these rules, ground-water resources are the absolute property of the owner of the land under which they occur, whereas owners of land riparian to a surface watercourse have specific rights to withdraw and use the water running past their land.

III. RIGHT TO USE WATERS

The diversion and use of surface water resources, and the use of wells, vested in the Crown are subject - in principle - to the control of the administrative authorities (the Water Department of the Ministry of Communications, Works and Public Utilities). 5/ Subject to an express declaration made to that effect by the legislature, the same régime of controlled utilization can be extended to surface waters which are not vested in the Crown. 6/

Surface waters and wells which are subject to a régime of controlled utilization can revert to a régime of uncontrolled legislation by means of an express declaration of the legislature or of the Minister of Communications, Works and Public Utilities. 7/

The abstraction and use of surface and underground waters which are not vested in the Crown, and which are not subjected to a régime of controlled utilization, follow the applicable common law rules. According to these rules, a riparian landowner has a right to the undiminished flow of the water of a stream bordering or crossing his land, subject however to the unlimited domestic use of other riparian landowners, and to restrictions on the use of the water on non-riparian land or for purposes unconnected with the riparian land. 8/ A landowner at common law is further entitled to sink a well on his land and abstract the underlying ground water even if by so doing he may interfere with the supply of similar water to other landowners. 9/

In view of the intimate relationship existing at common law between the land and the water which occurs on or under it, water rights can be acquired by the ordinary means of acquiring ownership of the land to which they appertain, i.e., sale, inheritance, government grant in the case of public lands, and prescriptive acquisition running for 40 years. 10/ Water rights can further be leased separately from the land.

IV. BENEFICIAL USES OF WATER (WATER SUPPLY)

The beneficial uses of water in St. Kitts are not diversified and can be all grouped under the heading "Water Supply". It is worth mentioning, however, that - should it come within the realm of feasibility - the generation of hydroelectric energy would be governed by separate legislation covering the provision of electric energy at large. 11/

Under the legislation currently in force, water supply comes within the purview of (a) the laws regulating the provision of public water supplies, (b) public health laws, (c) building and planning laws, and (d) agriculture and industrial development laws.

A. Provision of public water supplies

The provision of an adequate supply of water for domestic and non-domestic purposes is the responsibility of the public authority. 12/ The connection of premises to the public distribution system, as well as any alteration in the services already existing on the premises, is subject to a permit of the public authority and to the specifications set out in the law regarding (a) the manner in which the premises are to be connected, (b) the materials and fittings to be employed, and (c) the size of the pipes to be used for domestic conveyances. 13/ Metering of domestic and non-domestic water supplies is provided for, and water rates apply in regard to the water consumed. 14/ The sale of publicly supplied water is strictly forbidden. 15/ All of the above provisions are enforced by means of a fine or imprisonment and, in the case of unauthorized connection to a public supply system, an additional daily fine for the duration of the offence applies. 16/

B. Public health aspects

From a public health standpoint, the control of the wholesomeness of the water supplied to the public is the separate responsibility of the public health authorities. The latter's responsibilities actually range from the supervision, control and approval of sources of public water supplies, as well as the control of the construction, operation and maintenance of distribution systems to water testing and regulating, the purpose for which and the manner in which water can be used and distributed to the public. 17/

Specific provisions apply to the wholesomeness of water employed in the manufacture of ice and aerated water. 18/ The design of large containers for the storage of water is subject to the approval of the public health authorities for mosquito control purposes. 19/ The purity of the water of swimming pools is also subject, in principle, to be regulated by the health authorities. 20/

C. Building and planning aspects

The building regulations currently in force simply require that an "adequate and safe" water supply be available "within reasonable distance" of any building, 21/ while the lack of "adequate and readily accessible" water supply in buildings used for human habitation can trigger the intervention of the housing and planning authorities for slum clearance and reconstruction purposes. 22/

Provisions facilitating the public supply of water must be contained in town planning and in regional development schemes, the effect of which is to subject lands earmarked for said purposes to the control of the planning and housing authorities. These controls include prohibiting or regulating land development in the area affected by an approved planning scheme and attendant enforcement powers. 23/

D. Water supplies for agricultural and industrial development

The provision, development and conservation of water supplies for agricultural purposes fall within the purview of the activities of the Ministry of Agriculture, Lands, Housing and Labour (formerly the Agricultural Land Development Authority). To that effect, the Department of Agriculture can provide financial assistance in the implementation of projects for the promotion of agricultural efficiency, including projects for the above-mentioned water development and conservation purposes. 24/

The provision of water services for industrial development purposes falls within the purview of the financial assistance activities provided by the Development and Finance Corporation. 25/

V. HARMFUL EFFECTS OF WATER

A. Watercourses, banks and catchment protection

The protection of the hydraulic integrity of ponds, springs and streams vested in the Crown or subjected to controlled utilization, and the protection of designated watersheds, is subject to ad hoc regulations to be issued by the public authority. 26/ In particular, the limited regulations existing to this effect empower the Water Department to prohibit the cultivation of, or the grazing of livestock on, land within a given distance (30 feet) from the above-mentioned bodies of water, subject to a fine or imprisonment. 27/ Catchment protection and the prevention of soil erosion are also indirectly fostered by the existing legislative provisions for the protection of forests and for reforestation. 28/ In particular, soil conservation projects aimed at promoting agricultural productivity can be financially assisted by the Ministry of Agriculture, Lands, Housing and Labour (formerly the Agricultural Land Development Authority). 29/

B. Drainage and sewerage

The drainage of water and the disposal of sewage from buildings are subject, in principle, to be regulated by the public health authorities. 30/ Specific regulations currently govern the drainage and sewage disposal requisites of buildings: drains from dwelling houses must be properly laid to a suitable outfall for the efficient drainage of rain or other water, while acceptable sewage disposal

systems from any building are listed. The installation of these systems, however, is subject to the prior approval of the health authorities. 31/ In addition, adequate drainage is a pre-condition for the connection of premises to a public water supply system. 32/

Finally, land needed for the purposes of public drainage and sewerage services can be earmarked within the framework of town planning and regional development schemes, and be subjected to penetrating administrative controls. 33/ Detailed provisions separately govern drainage for mosquito control purposes. 34/ Finally, poor drainage from gutters, drains or pipes constitutes a nuisance and is punished with a fine. 35/

C. Flooding

In the event of floods (or other natural disasters) a state of emergency can be declared, whereby exceptional powers are vested in the public authorities, including the power to requisition such essential services as - among others - the provision of water supplies and the disposal of sewage. 36/

VI. WASTE, POLLUTION AND MOSQUITO CONTROL

A. Waste and misuse of water

The prevention of waste and misuse of public water supplies at large is subject to ad hoc regulations to be issued by the public authority. 37/ However, the improper abstraction or wastage of water flowing into or from sources of public water supplies (i.e., ponds, springs and streams earmarked for public water supply purposes) and related storage and distribution facilities (reservoirs, cisterns and aqueducts) is prohibited, and the prohibition enforced with a fine or imprisonment. 38/ The same penalty applies for any wastage which is due to the consumer's neglect of the state of disrepair of household water appliances and fittings and for the wastage of water supplied through public standpipes. 39/ Furthermore, the waste or misuse of water supplied to individual premises can be just cause for the discontinuance of the water supply. 40/ Finally, the waste of water from any means of distribution also constitutes a nuisance and as such is punished with a fine. 41/

B. Pollution control and health preservation

The protection of public water supplies from contamination and pollution is currently sought by prohibiting a number of potentially harmful activities in, on or in close proximity to, the sources of public water supplies or related facilities, including public standpipes. These prohibitions are enforced by means of a fine or imprisonment. 42/ Occasionally, the protection of the purity of a public water supply has been sought by means of compulsory acquisition of the land area draining into the source of the supply. 43/

Under the health regulations currently in force, the disposal of waste into streams and watercourses, and consequent pollution, is tolerated subject to a permit to be granted by the Minister of Public Health. The unauthorized disposal of waste and pollution of the above-mentioned watercourses constitutes a nuisance and is punished with a fine. 44/ Finally, the prevention of water pollution falls indirectly within the purview of the regulations to be issued by the Minister of

Public Health in regard to the use of pesticides on or over land. 45/ Furthermore, water supply systems in unsanitary conditions constitute a nuisance, punishable - as such - with a fine. 46/

Additional provisions aimed at the protection of public health interests through the regulation or prohibition of activities liable to result in contamination of waters can be found in separate pieces of health-related legislation. 47/ Furthermore, it is the responsibility of the local authorities to keep gutters, drains, sewers and sanitary conveniences clean, free of water and in good sanitary condition. 48/

C. Mosquito control

Detailed provisions apply with respect to the control of mosquitoes. In particular, specific provisions apply to the storage of water, drainage, wells, roof-gutters, drinking water for animals and stagnant water at large. These provisions are all aimed at preventing the formation of conditions favourable to the breeding of mosquitoes through a variety of measures ranging from siting arrangements for, and design of, water-storing facilities to mosquito-proofing or stocking with larvivorous fish of wells and artificial basins. 49/ The enforcement of these provisions is sought by means of a fine. 50/ In addition, the presence of objects which could collect water and serve as breeding places for mosquitoes constitutes a nuisance and is subject to a fine. 51/

VII. LEGISLATION ON GROUND-WATER RESOURCES

There appear to exist no specific legislative provisions governing the abstraction, use and protection of ground-water resources other than those of a very general import reviewed in section II (ownership or control status of water) and section III (right to use waters) above.

VIII. CONTROL AND PROTECTION OF WATERWORKS AND STRUCTURES

Whereas no specific legal provision seemingly exists with regard to the control by the public authorities of water-related works at large, all waterworks which are instrumental to the provision of public water supplies are public property, 52/ and their protection is subject to ad hoc regulations to be issued by the public water authorities. 53/ In the interim, tampering with appliances employed in connection with the above-mentioned waterworks is prohibited, and this prohibition is enforced by means of a fine or imprisonment. 54/ In addition, damaging or destroying the dam, wall, bank or sluice of any pond, reservoir or watercourse is punished with imprisonment. 55/

IX. PROTECTED AREAS

Under the legislation in force the Minister of Communications, Works and Public Utilities is empowered to declare the entire drainage area - or part thereof - of public ponds, springs and streams, and of reservoirs and wells feeding into a public water supply system, to be a watershed area. 56/ As a consequence, such areas become subject to protective measures to be spelled out in ad hoc regulations to be issued by the Water Department of the Ministry mentioned above. 57/

X. GOVERNMENT WATER RESOURCES ADMINISTRATION

A. At the national level

Several Ministries and other public bodies concur in the management, development and conservation of water resources at the national level:

(a) The Ministry of Communication, Works and Public Utilities, through its Water Department, has primary responsibility for the management, development and control of surface and ground-water resources, for the provision of public water supplies and related works and facilities, 58/ as well as for the collection, analysis and storage of hydrological and water quality data. In addition, the same Ministry, through the Electricity and Cold Storage Department (formerly Electricity and Cold Storage Authority), is responsible for the manufacture of ice and (theoretically at least) for the generation of hydroelectric energy. 59/ Finally, the Ministry provides for the collection of meteorological data;

(b) The Ministry of Education, Health and Social Affairs is responsible for the health aspects of public water supplies and of water-related activities at large. 60/ A Public Health Board acts in an advisory capacity; 61/

(c) The Ministry of Agriculture, Lands, Housing and Labour retains primary responsibility for irrigation, fisheries, forestry, soil conservation, housing and land use planning. In addition, the Ministry - through the Department of Agriculture (formerly the Agricultural Land Development Authority) - provides financial assistance for the implementation of projects of development and conservation of water for agricultural purposes, for the improvement of drainage of agricultural lands, and for the promotion of soil conservation practices; 62/

(d) The Central Planning and Housing Authority is primarily responsible to the Minister of Lands and Housing for land development and related zoning schemes - including schemes for the provision of water supplies, drainage and sewage disposal services, and for forest conservation. 63/

B. At the local level

The Nevis Local Council has been given primary responsibility for the management, development and conservation of water resources in the island and for the provision and regulation of public water supplies - including the fixing of relevant rates and charges. 64/ In addition, the local council has primary responsibility for, among others: (a) drainage and sewage disposal, (b) establishing and regulating public bath houses and wash houses, (c) provision of water tanks for the storage of rainwater, (d) generally, keeping gutters, drains, sewers and sanitary conveniences free of water and in sanitary conditions, and (e) implementation of land development schemes, including schemes for the provision of water supply, drainage and sewage disposal services, and for forest conservation. 65/

XI. AUTONOMOUS AND SEMI-AUTONOMOUS WATER DEVELOPMENT INSTITUTIONS

Within the framework of its industrial development objectives, the Development and Finance Corporation provides financial and other assistance to development enterprises, including assistance for the provision of industrial water supplies. 66/ The Corporation is a body corporate with power to purchase, hold and dispose of land and property, to enter into contracts, to sue and be sued. The Corporation is provided with its own starting capital, entirely subscribed for by the Government, but shares in the Corporation can be held by the public. The Corporation has power to borrow, and its borrowings can be guaranteed by the Government. The Corporation, which is governed by a Board of Directors appointed by the Minister of Finance and with a manager as its chief executive, acts within the policy guidelines issued by the Minister of Finance. 67/

XII. FINANCIAL ASPECTS

A. Government financial policies regarding water resources development

The Ministry in charge of agriculture is empowered to provide financial assistance in the implementation of agricultural water development and conservation projects, and of drainage and soil conservation projects. 68/ In particular, the beneficiaries of agricultural development projects which receive financial assistance from the Caribbean Development Bank can be subjected to a charge for the benefits which accrue to them from the projects. 69/

In addition, loans and other forms of financial assistance can be provided by the Development and Finance Corporation for industrial development purposes, including the provision of water supplies. 70/

Finally, it is government policy that the full cost-inclusive of materials, labour and other expenses - of connecting, repairing, altering or extending public water supply services - shall be recoverable from the beneficiaries of the services. 71/

B. Water rates and charges

Different monthly rate structures apply according to whether consumption is metered or not, and to the kind of supply provided. A progressively higher tariff applies to metered domestic consumption by households as this increases and falls into higher consumption brackets. 72/ Metered non-domestic consumption and metered domestic consumption to other than dwelling houses are charged a flat rate (currently fixed at \$EC 0.15 per each 100 gallons used). Non-metered domestic and non-domestic consumption are charged a different flat rate based on the rental value of the premises charged (currently fixed at \$EC 0.56 and \$EC 0.90, respectively, per \$EC 4.80 of the annual assessed rental value). Special rates, however, can be fixed by the Minister of Communications, Works and Public Utilities. 73/ A rental fee is charged in respect of meters installed by the public authority, 74/ and a separate fee is charged for the reconnection of services discontinued for failure to pay the applicable rate. 75/

XIII. ENFORCEMENT AND IMPLEMENTATION

The enforcement and implementation aspects of water-related legislation include such issues as the protection of existing rights and interests in water through appeal and hearing procedures: the direct execution of orders issued by the public authorities, and penalties.

The latter, in particular, have been reviewed in connection with various aspects of water legislation analysed in previous sections. It is worth recalling in this connection the penalty of discontinuance of a public water supply to customers who waste or misuse water, or who are in default with payment of the applicable water rates. 76/

Water users whose rights or interests in water are affected by a determination of the public authorities, may have recourse from it in the form of an appeal with the higher administrative authority 77/ or with the courts. 78/ Neither form of protection is provided for, however, by the legislation governing the extension of government controls over hitherto uncontrolled watercourses. In this case, compensation with respect to affected property rights is expressly provided for, subject to certain qualifications. 79/ It should be pointed out, however, that the constitutional protection of private property is expressly withheld in the case of the taking of property in connection with the direct execution by the public authorities of works necessary for soil conservation purposes, or for the conservation of other natural resources. 80/ The hearing of interested persons is prescribed within the framework of administrative determinations made in connection with reforestation activities. 81/

Administrative orders and notices issued for the enforcement of public health controls, or of land use planning or reforestation schemes, can be directly executed by the issuing authorities. 82/ In discharging their water-related control and enforcement responsibilities, public authorities enjoy - within the limits spelled out in the relevant statutes - the power of entering private premises. 83/

Notes

1/ Hereinafter referred to as the Revised Laws.

2/ Watercourses and Waterworks Ordinance, sects. 2 (definition of "watercourses") and 8 (1). It should be noted that - but for a declaration to the effect that all wells and reservoirs constructed for public water supply purposes following the enactment of the 1956 Watercourses and Waterworks Ordinance are automatically vested in the Crown - sect. 3 of the said Ordinance does not contain a declaration of the public ownership status of water resources in St. Kitts and Nevis. Rather, it merely confirms the public status that the resources have somehow acquired prior to the Ordinance and which the latter continued. The Ordinance's immediate predecessor acts, i.e., the Waterworks Ordinance (No. 12 of 1894 in the Revised (1922) Edition of the Statutes of St. Christopher and Nevis, p. 140), and the Watercourses Ordinance (No. 9 of 1898, ibid., p. 174), do not contain any express declaration to the effect of vesting in the Crown the surface waters which they regulate.

Notes (continued)

3/ Watercourses and Waterworks Ordinance, sect. 3 which implicitly recalls the Waterworks Ordinance, No. 12 of 1894 and sect. 8. The latter transferred to the Crown from the Waterworks Commissioners the ownership of, among others, the "rivers, brooks, springs and other waters" which the Commissioners had already acquired prior to the Ordinance itself. The 1894 Ordinance, therefore, simply confirmed - like the 1956 Watercourses and Waterworks Ordinance - the public ownership status that "rivers, brooks, springs and other waters" already had acquired prior to its entry into force. The author could not identify any predecessor statute of the 1894 and 1898 Ordinances, nor any other legislative or administrative act bearing on the issue.

4/ Watercourses and Waterworks Ordinance, sects. 2 (definition of "waterworks") and 8 (1).

5/ Ibid., sect. 8 (10).

6/ Ibid., sect. 16.

7/ Ibid., sect. 17.

8/ C. J. Meyers and A. D. Tarlock, Water Resources Management, 2nd ed. (1980), pp. 52-53.

9/ Ibid., p. 660.

10/ Prescription Act, sect. 3.

11/ Electricity, Ice and Cold Storage Ordinance (in particular, the definition of "works" contained in sect. 2).

12/ Watercourses and Waterworks Ordinance, sect. 8 (1). Water can also be supplied in bulk (sect. 11), and through public standpipes (Watercourses and Waterworks Regulations, sect. 13).

13/ Watercourses and Waterworks Ordinance, sect. 20 (1) (i); and Watercourses and Waterworks Regulations, sects. 2, 3, 4 (2), 7 and 9.

14/ Watercourses and Waterworks Ordinance, sects. 10 (1) (c) and 12; and Watercourses and Waterworks Regulations, sect. 8. See also sect. XII.B below.

15/ Watercourses and Waterworks Ordinance, sect. 21.

16/ Ibid., sects. 20 (1) (h)-(i) and 24; and Watercourses and Waterworks Regulations, sect. 15.

17/ Public Health Act, sect. 10 (8) (a)-(d) and (f).

18/ Ibid., sect. 10 (20) (f); Ice and Aerated Water Manufacturing (Nevis) Regulations, sect. 6; and Ice and Aerated Water Manufacturing (St. Christopher) Regulations, sect. 6.

19/ Public Health Act, sect. 10 (17); and Mosquito Control Regulations, sect. 15 (b).

Notes (continued)

- 20/ Public Health Act, sect. 10 (31).
- 21/ Ibid., sect. 10 (5); Building Ordinance, sect. 10 (d); and Building Regulations, sect. 22.
- 22/ Slum Clearance and Housing Ordinance, sects. 2 (definition of "sanitary defects"), 14 (1), 20 and ff.
- 23/ Town and Country Planning Ordinance, sects. 17 (2) and 20, and Schedule, part VI.
- 24/ Agricultural Development Act, sects. 2 (definition of "project" (iii)), 6 (1) (d) and 7 (b). See also sects. X and XII.A below.
- 25/ Development and Finance Corporation Act, sects. 5 and 6 (b). See also sects. XI and XII.A below.
- 26/ Watercourses and Waterworks Ordinance, sect. 10 (1) (h)-(i) and (4).
- 27/ Watercourses and Waterworks Regulations, sects. 14 (b) and 15.
- 28/ Forestry Ordinance, sects. 6 and 12 (a); Town and Country Planning Ordinance, sects. 17 (a) and 20, and Schedule, part V, 1 and 4 (on the inclusion in town planning and in regional development schemes of provisions on the preservation of forest areas).
- 29/ Agricultural Development Act, sects. 2 (definition of "project" (iii)), 5, 6 (1) (d) and 7 (b). See also sects. X and XII.A below.
- 30/ Public Health Act, sect. 10 (5)-(6).
- 31/ Building Regulations, sects. 17 and 20.
- 32/ Watercourses and Waterworks Regulations, sect. 3 (5).
- 33/ Town and Country Planning Ordinance, sects. 17 (2) and 20 and Schedule, parts VI and VIII. See also sect. IV.C above.
- 34/ See sect. VI.C below.
- 35/ Public Health (Nuisances) Regulations, sects. 3 (2) (vii) and 8.
- 36/ Emergency Powers Act, sect. 3 (1) (a); and Emergency Powers (No. 3) Regulations, sects. 2 (definition of "essential service" (a)-(b)) and 13.
- 37/ Watercourses and Waterworks Ordinance, sect. 10 (1) (f).
- 38/ Ibid., sects. 20 (1) (g), (j) and 24.
- 39/ Ibid., sects. 22 and 24.
- 40/ Watercourses and Waterworks Regulations, sect. 12 (2) (b).
- 41/ Public Health (Nuisances) Regulations, sects. 3 (2) (x) and 8.

Notes (continued)

42/ Watercourses and Waterworks Ordinance, sects. 20 (1) (a)-(q) and 24; Watercourses and Waterworks Regulations, sects. 13 (3) and 15. See also the Public Health Act, sect. 10 (8), which calls for ad hoc regulations to be issued by the public health authorities for the prevention of pollution of public water supplies, and related sources and facilities.

43/ Land Acquisition Ordinance, sect. 3, and resolution of the Legislative Council of St. Christopher and Nevis of 6 October 1927 (reported in the Revised (1961) Edition of the Laws of St. Christopher, Nevis and Anquilla, vol. VII, p. 1261).

44/ Public Health (Nuisances) Regulations, sects. 3 (2) (xv) and 8.

45/ Pesticides Act, sect. 3 (1) (c) (i).

46/ Public Health (Nuisances) Regulations, sects. 3 (2) (ix), (xi) and 8. These provisions are seemingly directed at, and enforceable only against, negligent consumers; they are not directed at public water supply authorities.

47/ E.g., Malicious Damage Ordinance, sect. 26; and the Public Health (Nevis) Regulations, sect. 7.

48/ Local Authorities (Powers and Duties) Regulations, sect. 11 (a) (i)-(iii).

49/ Mosquito Control Regulations, sects. 8-11, 14-16 and 18.

50/ Ibid., sect. 20.

51/ Public Health (Nuisances) Regulations, sects. 3 (2) (vi) and 8.

52/ Watercourses and Waterworks Ordinance, sect. 3.

53/ Ibid., sect. 10 (1) (a).

54/ Ibid., sects. 20 (1) (k) (1) and 24.

55/ Malicious Damage Ordinance, sects. 25 and 26.

56/ Watercourses and Waterworks Ordinance, sect. 18.

57/ Ibid., sect. 10 (1) (i).

58/ Ibid., sects. 4, 5, 8, 14 and 15. It should be pointed out, however, that in view of the devolution of the responsibilities formerly vested in the Water Board to the Local Council of Nevis (see sect. X.B below), the Water Department's jurisdiction in water matters is limited to the island of St. Kitts.

59/ Electricity, Ice and Cold Storage Ordinance, sects. 3 and 6.

60/ It should be noted, however, that in view of the devolution of a number of water-related responsibilities in the field of public health to the Local Council of Nevis (see sect. X.B below), the corresponding jurisdiction of the central government is limited to the island of St. Kitts.

Notes (continued)

61/ Public Health (Establishment of a Board of Health) Order, sect. 6 (1)-(2) (a).

62/ Agricultural Development Act, sects. 5, 6 (1) (d), 7 (b), 12 and 13. See also sect. XII.A below.

63/ Town and Country Planning Ordinance, sect. 17 (2), 20, and Schedule, part V 1, 4, VI, VIII 8.

64/ Constitution Order, sect. 109; and Local Government Act, sects. 9 (1) (xxiii) and 23 (3).

65/ Local Government Act, sect. 9 (1) (vi), (xvi) and (xxii); Local Authorities (Powers and Duties) Regulations, sect. 11 (a) (i)-(iii); and Town and Country Planning Ordinance, sect. 18.

66/ Development and Finance Corporation Act, sect. 6 (b).

67/ Ibid., sects. 4 (1), 5, 8 (1)-(2), 9 (1), 10 (1), 23 and 27 (1), and Schedule, sect. 1.

68/ Agricultural Development Act, sects. 2 (definition of "project" (iii)), 5, 6 (1) (d) and 7 (b).

69/ Ibid., sect. 13 (b).

70/ Development and Finance Corporation Act, sects. 5-6 (b).

71/ Watercourses and Waterworks Regulations, sects. 5-6.

72/ Current rates are fixed at \$EC 0.09 per 100 gallons for the first 5,000 gallons; \$EC 0.13 per 100 gallons for the next 5,000 gallons to 7,000 gallons; \$EC 0.15 per 100 gallons for the next 7,000 gallons to 8,000 gallons; and \$EC 0.18 per 100 gallons for consumption in excess of 8,000 gallons per month.

73/ Water Service Rates (1976), sect 2.

74/ Watercourses and Waterworks Regulations, sect. 8 (2) (currently fixed at \$EC 7.20 per annum).

75/ Ibid., sect. 12 (4) (currently fixed at \$EC 20).

76/ Ibid., sect. 12 (2).

77/ As in the case of the rejection of an application for a supply of water (Watercourses and Waterworks Regulations, sect. 2 (3)), or of the refusal to grant permits in connection with forestry-related activities (Forestry Ordinance, sect. 10).

78/ As in the case of grievances against notices or orders issued by the public health authorities in the public health interest (Public Health Act, sect. 23 (1)), or of grievances against the determinations of planning authorities (Town and Country Planning Ordinance, sect. 20 (4)).

Notes (continued)

79/ Watercourses and Waterworks Ordinance, sect. 19. See also Constitution Order, sect. 6 (1), and Land Acquisition Ordinance.

80/ Constitution Order, sect. 6 (4) (a) (vii).

81/ Forestry Ordinance, sect. 12 (f).

82/ Public Health Act, sect. 22 (1); Town and Country Planning Ordinance, sect. 20 (1) (d); and Forestry Ordinance, sect. 16.

83/ Public Health Act, sect. 4 (1) (a); Watercourses and Waterworks Ordinance, sect. 8 (2) (b); Watercourses and Waterworks Regulations, sect. 8 (b) (inspection of meters); Forestry Ordinance, sect. 18; Town and Country Planning Ordinance, sects. 12 (1) and 26 (1) (implementation of land use planning schemes); and Agricultural Development Act, sect. 6 (4) (b) and (5) (inspection of lands considered for agricultural development purposes).

ST. VINCENT AND THE GRENADINES

INTRODUCTION

The State of St. Vincent and the Grenadines consists of a group of islands of the Lesser Antilles in the Caribbean Sea, with a total area of 150.3 square miles and a population of 128,000 (1982 estimate).

The island of St. Vincent has an area of 133.8 square miles, and contains a population of 119,000 (1982 estimate). Thickly wooded volcanic mountains, from which flow many short swift streams, form the backbone of the country. The average annual rainfall ranges between 90 inches and 300 inches. It has been estimated that approximately 80 per cent of the rainfall is absorbed into the underground. St. Vincent's economy is agricultural - arrowroot, sugar-cane and banana are traditional crops.

According to the 1980 data, there are in St. Vincent 8,500 house connections (metered), 141 commercial and industrial connections (metered), and 143 public standposts - all served by the public water supply system, with a total estimated average daily delivery of some 4.5 million imperial gallons. Only surface sources are tapped by the water supply system; underground water is not currently exploited, and has not been properly assessed. A public sewerage system has served the capital town of Kingstown since the late 1970s.

The Grenadine islands, forming part of the State of St. Vincent and the Grenadines pursuant to its current Constitution, have a combined area of 16.5 square miles and a population of 8,500 (1978 estimate). Because of a lack of water these islands are only slightly cultivated.

Formerly a British colony, the State of St. Vincent and the Grenadines attained independence on 27 October 1979. The system of government is ministerial. The Cabinet is headed by a Prime Minister appointed by the Governor-General, and members thereof other than the Prime Minister are appointed by the Governor-General from among the members of the legislative House of Assembly. The House is composed of elected and appointed members. The Governor-General exercises the executive authority of the country which is vested in the Queen.

I. LEGISLATION IN FORCE

The following statutes bear on the development, conservation and use of fresh water resources in St. Vincent, and have been reviewed for the purposes of the present study:

1. Adaptation of Laws Order, 1980, S.R.O. No. 38 of 1980;
2. Aerated Water Factories Regulations, 1956, Title XIII, CAP 14 of the Revised Laws of St. Vincent (1966 ed.);
3. Agricultural and Co-operative Bank of St. Vincent Ordinance, 1966, No. 16 of 1966, as amended;
4. Agricultural and Co-operative Bank of St. Vincent Regulations, 1969, S.R.O. No. 3 of 1969;

5. Agricultural and Co-operative Bank (Merger with Development Corporation) Act, 1982, Act No. 6 of 1982;
6. Agricultural Small Tenancies Ordinance, 1957, No. 16 of 1957;
7. Agriculture Ordinance, 1951, No. 23 of 1951, as amended;
8. Barrouallie Town Board By-Laws, 1950, Title XII, CAP 2 of the Revised Laws of St. Vincent (1966 ed.);
9. Bequia District Council By-Laws, 1959, Title XII, CAP 2 of the Revised Laws of St. Vincent (1966 ed.);
10. Board of Agriculture Ordinance, 1935, Title XXII, CAP 15 of the Revised Laws of St. Vincent (1966 ed.);
11. Calliaqua Town Board By-Laws, 1950, Title XII, CAP 2 of the Revised Laws of St. Vincent (1966 ed.);
12. Caribbean Development Bank Act, 1969, Act. No. 14 of 1969;
13. Caribbean Food Corporation (St. Vincent) Act, 1981, Act. No. 11 of 1981;
14. Caribbean Investment Corporation Act, 1975, Act No. 34 of 1975;
15. Central Water and Sewerage Authority Act, 1978, Act No. 6 of 1978;
16. Central Water and Sewerage Authority (Water Supply) Regulations, 1973, S.R.O. No. 30 of 1973, as amended;
17. Chateaubelair Town Board By-Laws, 1950, Title XII, CAP 2 of the Revised Laws of St. Vincent (1966 ed.);
18. Electricity Supply Act, 1973, Act No. 14 of 1973, as amended;
19. Emergency Powers (Hurricane, Earthquake, Fire, Flood or any natural disaster) Ordinance, No. 5 of 1967, as amended;
20. Factories Ordinance, 1955, No. 5 of 1955;
21. Factory and Machinery Regulations, 1943, S.R.O. No. 103 of 1943;
22. Food Vendors and Food Vending Establishments Regulations, 1957, Title XIII, CAP 14 of the Revised Laws of St. Vincent (1966 ed.);
23. Forests Ordinance, 1945, Title XXII, CAP 23 of the Revised Laws of St. Vincent (1966 ed.);
24. Georgetown Town Board By-Laws, 1950, Title XII, CAP 2 of the Revised Laws of St. Vincent (1966 ed.);
25. Housing and Land Development Corporation Act, 1976 Act No. 7 of 1976, as amended;
26. Interpretation and General Provisions Act, 1976, Act No. 23 of 1976;

27. Kingstown Board Act, 1970, Act No. 22 of 1970, as amended;
28. Land Development Control (Buildings) Regulations, 1970, S.R.O. No. 12 of 1970;
29. Land Development Control (Towns) Regulations, 1970, S.R.O. No. 13 of 1970;
30. Layou Town Board By-Laws, 1950, Title XII, CAP 2 of the Revised Laws of St. Vincent (1966 ed.);
31. Local Government Ordinance, 1951, Title XII, CAP 2 of the Revised Laws of St. Vincent (1966 ed.), as amended;
32. Mount Greenan and New Adelphi Canal Ordinance, 1902, CAP 95 of the Revised Laws of St. Vincent (1926 ed.);
33. Mustique Company Limited Ordinance, 1969, No. 16 of 1969;
34. Pesticides Control Act, 1973, Act No. 23 of 1973;
35. Port Elizabeth Town Board By-Laws, 1950, S.R.O. No. 92 of 1950;
36. Prescription Act, CAP 90 of the Revised Laws of St. Vincent (1926 ed.);
37. Privies Regulations, 1930, Title XIII, CAP 14 of the Revised Laws of St. Vincent (1966 ed.);
38. Public Health Act, 1977, Act No. 9 of 1977, as amended;
39. Public Health (Mosquito) Rules, 1979, S.R.O. No. 30 of 1979;
40. Regional Development Agency Agreement Ordinance, 1968, No. 17 of 1968;
41. Roads Ordinance, 1955, Title XVIII, CAP 15 of the Revised Laws of St. Vincent (1966 ed.);
42. Roads Regulations, 1950, Title XVIII, CAP 15 of the Revised Laws of St. Vincent (1966 ed.);
43. St. Vincent Agricultural Development Corporation Act, 1975, Act. No. 31 of 1975, as amended;
44. St. Vincent Constitution Order, 1979, S.I. No. 916 of 1979;
45. St. Vincent National Trust Ordinance, 1969, No. 32 of 1969;
46. Sale of Milk Regulations, 1956, Title XIII, CAP 14 of the Revised Laws of St. Vincent (1966 ed.);
47. Sanitary Authority (Tenement Houses in Kingstown) Regulations, 1942, Title XIII, CAP 14 of the Revised Laws of St. Vincent (1966 ed.);
48. Small Towns Regulations, 1888, Title XII, CAP 2 of the Revised Laws of St. Vincent (1966 ed.);

49. Small Towns Regulations, 1930, Title XII, CAP 2 of the Revised Laws of St. Vincent (1966 ed.);
50. Town and Country Planning Act, 1976, Act No. 8 of 1976, as amended.

II. OWNERSHIP OR OTHER STATUS OF WATERS

All surface and underground water resources in the country are vested in the Government and have public property status. The sole exceptions are springs wholly located within the boundaries of a landholding and discharge into a watercourse that does not extend beyond or about on the boundaries of the same landholding. 1/ Springs which meet both requirements are regarded as the property of the owner of the land where they exist.

In addition, whereas the bed and the banks of canals can be the property of the owners of the land they traverse or border, the water flowing in them retains public property status after it is diverted into the canal from a source having public property status. 2/ As a consequence, canal water can only be abstracted and used according to the general rules applicable to the abstraction and use of public water resources at large. 3/

Express provisions are further made for the acquisition - in compulsory fashion if need be - of "watercourses or any right or interest therein or thereover" at the request and for the purposes of the Kingstown Town Board. 4/ It should be noted, however, that as a result of vesting practically all the water resources of the country in the Government, the above provisions are of practical significance only in regard to springs having private property status.

Finally, atmospheric water which is collected and stored in tanks can be regarded as the collector's property and be disposed of freely.

III. RIGHT TO USE WATER

Since the proclamation of the Central Water and Sewerage Authority Act, water which is vested in the Government can be abstracted and used only subject to a grant of permit at the discretion of the Central Water and Sewerage Authority. 5/ Any other instrument whereby it is sought to acquire, convey or transfer a right or interest in public water resources is expressly declared ineffective. 6/ In this connection, the Central Water and Sewerage Authority has been given specific enforcement powers to enter lands and to take measures to stop unauthorized abstractions. No compensation is due for damage ensuing from enforcement operations. 7/ All water use rights acquired prior to the proclamation of the Act are allowed to continue undisturbed 8/ - including the exclusive water power rights that may have been granted to the St. Vincent Electricity Services Ltd. for the generation of hydroelectric energy. 9/

The substantive and procedural details of the permit system envisaged by the law are to be spelled out in separate regulations. It is stipulated, however, that in issuing a permit special regard must be had for water requirements for domestic use. 10/ In addition, it is provided that a permit to abstract and use water for the irrigation of land located within the boundaries of a town or a certain distance therefrom can be cancelled at the request of the Minister responsible for public health if irrigation practices are found contrary to public health interests. 11/

The permit principle embodied in current legislation also appears to apply to post-proclamation water uses by government departments and agencies. Consequently, the privilege accorded the government Chief Engineer to draw water freely for road construction purposes, 12/ and the privilege accorded the Kingstown Town Board to seek acquisition - in compulsory fashion if need be - of "any right or interest in a watercourse", 13/ is enforceable only in regard to water which has private property status. Likewise, mere lapse of time for the required duration can ripen into an enforceable right only in regard to water having private property status. A major exception to the permit system inaugurated by current legislation stems from the statutory entitlement to the exploitation of the water power of reserved watercourses or stretches thereof which the St. Vincent Electricity Services Ltd. - a semi-public utility company - enjoys under the terms of a 60-year inclusive licence to generate, sell and distribute electric energy from any source. Upon reservation by the Government - presumably, the Minister in charge of electricity - of a watercourse or stretch thereof for hydropower development purposes, 14/ a corresponding right automatically accrues to the company to the exclusion of any competing concern. Other concerns, however, may generate and sell hydroelectric energy from reserved sources under a sub-licence from the company. In addition, the use of water wheels and hydraulic turbines in place at the time the reservation takes effect is safeguarded.

The hydroelectric exploitation of designated sources for one's own consumption, and the exploitation of the power potential of any other watercourse - whether for distribution and sale or for one's own consumption - arguably follow the general rules on the right to use waters at large. 15/

Water resources retaining private property status - i.e., springs located entirely within the boundaries of a landholding and feeding a watercourse which does not extend beyond or abut on the same boundaries - can be used and disposed of freely by the owner of the land, subject to the limitations which may stem from the common law of riparianism, and from public health regulations. User rights in water having private property status can also be acquired by virtue of prescription running for 20 or 40 years. 16/

Rainwater collected in storage tanks can be freely used and disposed of by the collector, subject to public health restrictions.

IV. LEGISLATION ON BENEFICIAL USES OF WATER

A. Water supply

Aside from the harnessing of water power for hydroelectric generation purposes, legislation on all other water uses in St. Vincent can be conveniently dealt with under the heading "water supply" and will be reviewed from the viewpoint of (a) provision and regulation of the service, (b) land use planning and building regulations, and (c) public health controls.

1. Provision and regulation of the service

Under the terms of current legislation the provision of water supply services to the public appears to be the responsibility of the Central Water and Sewerage Authority. 17/ In this respect, the Authority is simply empowered to construct and maintain on any land works for the "storage" and "distribution" of water resources, subject to compensation. Short of legislative provisions to the contrary, the

owners of tracts of lands where water supply lines are in place retain ownership of affected land, subject however to the Authority's overriding powers in connection with maintenance works. 18/ Regulation of the service appears to be the concurrent responsibility of the Authority and of local governments. 19/ Central and local government regulations provide that connections to a public water supply system can be made only with the agreement of the responsible authority, and that the latter is empowered to cut off the supply in a number of circumstances, including emergencies and wasteful or improper use of the water. 20/ The Central Water and Sewerage Authority is further empowered to effect metering of the premises supplied by them. 21/ Water from a public supply system can be supplied to ships. 22/ Restrictions apply to the capacity of tanks for the storage of water supplied to buildings. 23/

Additional provisions relating to the protection of water supplies from contamination and wasteful use will be reviewed under subsection 3 below, and in section VI.A below, respectively.

2. Land use planning and building

Under land use regulations in force, permission from the Physical Planning and Development Board is required for any land development plan. 24/ Where land development schemes for housing, commercial or industrial purposes are contemplated, the Board is empowered to condition permission therefore to the provision of, among others, adequate water services - including a piped supply of water within buildings, or a supply of water within "reasonable" distance from them. 25/ The submission of relevant detailed plans and drawings for consideration by the Board is mandatory. 26/ Existing dwellings which do not meet the above requirements can be regarded as nuisances and be subjected to demolition. 27/

In Kingstown, it is mandatory for the owner of tenement houses to provide them with a supply of water from the responsible authority. 28/

From a more general planning standpoint, the Housing and Land Development Corporation is empowered to enforce changes in the layout of existing water supply lines and works which are at variance with approved land development plans. The exercise of such powers is subject to a complex conciliation and arbitration process, and to compensation of affected water supply authorities. 29/

In addition, the Governor-General is empowered to regulate water supply lines, among others, 30/ while separate regulatory powers have been vested in the Minister responsible for public health in connection with the provision and storage of water supplies for human consumption in buildings. 31/

3. Public health aspects

Preventing pollution of water supplies used for drinking and domestic purposes is the duty of health authorities at the central and local levels of government. 32/ Central and local government regulations in force prohibit bathing and washing at public standpipes and water taps, and forbid acts which may endanger the wholesomeness of water stored in reservoirs. 33/ Further restrictions on bathing, washing, construction and other land use activities in the vicinity of water supplies used for drinking and domestic purposes can be imposed by the Minister responsible for health. 34/

Polluted sources of drinking water and of water used for domestic purposes or in the manufacturing of foodstuffs or in dairying processes are regarded as a nuisance and subjected to abatement and control measures. Dwellings lacking an adequate supply of water within "reasonable" distance also constitute a nuisance and are dealt with accordingly. 35/

Specific regulations provide for the wholesomeness of water supplies used in restaurants, 36/ by dairies 37/ and by the aerated water manufacturing industry. 38/ Finally, the Minister responsible for health is empowered to regulate wells, tanks and cisterns used to supply water to buildings. 39/

B. Generation of hydroelectric energy

The legal régime governing the exploitation of watercourses for hydropower generation purposes has been outlined in section III above.

C. Other beneficial uses

With regard to the use of water for irrigation purposes, a specific cause for the cancellation of relevant administrative permits is the finding by the health authorities that irrigation practiced within town boundaries - or a certain distance therefrom - is contrary to public health interests. 40/ Arguably, cancellation can be effected only by the licensing authority - i.e., the Central Water and Sewerage Authority - at the request of the health authorities.

In addition, water used in the food industry for the manufacture of foodstuffs must be pure, under penalty of a finding of nuisance. 41/

V. LEGISLATION ON THE HARMFUL EFFECTS OF WATER

A. Flood control and watercourse protection

Primary responsibility for the protection of the bed and banks of watercourses, as well as for the disposal and control of flood waters, appears to rest with the Central Water and Sewerage Authority. The Authority is expressly empowered to construct and maintain works for the above purposes on any land, subject to compensation. 42/ The roads authority (Chief Engineer), however, seems to have a concurrent responsibility with regard to the maintenance of designated watercourses and canals for the purpose of protecting road works and structures. 43/ In addition, the soil conservation legislation in force makes it the specific responsibility of agriculturalists to protect watercourses in the course of agricultural land management operations. 44/ Works for the control of watercourses carried out by tenants of agricultural lands are regarded by the law as improvements and entitled as such to be compensated by the landlord at the termination of the relevant tenancy contracts. 45/

Upon the occurrence of a flood, a state of emergency can be declared by the Governor-General on the advice of the Cabinet, whereby the Governor-General may undertake direct responsibility for, among others, the supply of water. 46/

B. Soil erosion

Under the soil conservation legislation in force, agriculturalists have the responsibility to prevent surface waters from causing soil erosion in the course of agricultural land management operations. This responsibility is enforceable by the agriculture authorities by assuming direct control over land management operations at fault, which may thereby become subject to restrictions and requirements in the interest of soil conservation under penalty of a fine or imprisonment and direct execution of works by the controlling authority. Furthermore, it is the concerned agriculturalists' responsibility to maintain anti-erosion works carried out under an order of the agriculture authorities, subject to a fine and/or imprisonment. 47/

Soil conservation works are further subject to the regulatory authority of the Central Water and Sewerage Authority. 48/

Finally, under the law governing contracts of tenancy of agricultural land, disregard for soil conservation measures - including the maintenance of drains - by the tenant is cause for the termination of the contract. 49/ In addition, drainage and soil conservation works, and works for the control of gullies carried out by a tenant, are regarded as improvements and entitled as such to be compensated by the landlord at the termination of the tenancy. 50/

C. Sewerage and drainage

The regulation of sewerage works is the concurrent - and partly overlapping - responsibility of the public health authorities, 51/ of the Central Water and Sewerage Authorities 52/ and of the planning authorities. 53/ None, however, appears to have a clear-cut mandate to provide sewerage services to the public at large and to construct and maintain related works. 54/ Sewage disposal - other than sewerage - is subject to the regulatory powers vested in the local governments 55/ and - at the central level of government - in the Central Water and Sewerage Authority, 56/ the public health authorities 57/ and the planning authorities. Detailed public health regulations are in force with regard to privies, 58/ while building regulations contain provisions for earth closets, bucket latrines and cesspools. 59/ In addition, it is mandatory to dispose of drainage and waste waters from factories into existing sewers, under the control of the public health authorities, and subject to a modest fine. 60/

Drainage of lands, streets and buildings falls within the scope of the regulatory responsibility vested in the public health authorities. 61/ Existing health regulations mandate the provision of waste water drainage from factories manufacturing aerated water 62/ and from apartment buildings in Kingstown. 63/ Detailed regulatory provisions on the drainage from buildings are contained also in the land development control legislation in force. 64/

Land drainage is also subject to the regulatory powers vested in the Central Water and Sewerage Authority. 65/ The drainage of roads is the separate responsibility of the roads authorities (Chief Engineer), which may execute drainage works and impose requirements on the owners of lands adjacent to roads. 66/

VI. WATER USE, QUALITY AND POLLUTION CONTROL

A. Waste and misuse of water

Specific regulations enacted at the central and local government levels provide for the prevention and control of waste and misuse of water supplied to the public. Central government regulations in force forbid leaving open taps at public standpipes and private connections, and place consumers under a duty to report to the Central Water and Sewerage Authority any leaks or breaks. To enforce these provisions, and in any other instance in which waste or misuse occurs, the Authority is empowered to cut off the water supply, and to enter the premises and take all necessary measures to prevent waste. In the latter case, no compensation is due for damage ensuing from enforcement operations. 67/

Equivalent provisions are in force at the local government level. In addition, specific local regulations restrict the capacity of baths and the operation of public fountains. 68/

The Central Water and Sewerage Authority is empowered to meter water connections - free of rental charge 69/ - and to regulate the use of water fittings so as to prevent water wastage. 70/

B. Pollution and health protection

Preventing pollution of water resources is the concurrent - and in part overlapping - responsibility of the public health authorities, 71/ the Central Water and Sewerage Authority 72/ and local governments. 73/

The public health legislation in force seemingly permits the discharge of waste waters from any premises into watercourses - including irrigation canals - designated by the health authorities. Discharges into other watercourses constitute a nuisance and are subjected to a daily fine of up to \$EC 25, and to corresponding abatement powers vested in the health authorities. 74/ In addition, these have specific responsibility for (a) the setting of quality standards of effluents discharged from treatment plants into any receiving media; (b) regulating the establishment and operation of factories and trade activities which discharge polluting effluents into watercourses; and (c) regulating the prevention of pollution of watercourses. 75/ In addition to rule-making authority with respect to preventing water pollution at large, the Central Water and Sewerage Authority is empowered to regulate the construction and maintenance of water quality control works. 76/

Separate provisions exist in regard to preventing pollution of water supplies used for domestic and drinking purposes. Under the regulatory measures adopted by the Central Water and Sewerage Authority and by local governments, it is forbidden to (a) wash anything at public standpipes or water taps, and (b) to throw anything into, or in the vicinity of, reservoirs. 77/ In addition, the Central Water and Sewerage Authority has the power to cut off the water supply service to consumers who, by acts of omission or commission, impair the purity of the supply. 78/ Current health regulations require a permit from the health authorities for the construction of given sanitary conveniences within a safety distance from watercourses used as a source of drinking water. 79/ The public health authorities are further empowered to regulate bathing, washing, construction works and the

deposit of waste in or in the vicinity of sources of drinking and domestic water supplies in designated areas, with due regard for agricultural and industrial interests. 80/

The pesticides control legislation in force also contributes to preventing pollution of fresh water resources - both surface and underground - to the extent that it calls for regulations restricting the use and application of pesticides in agriculture. 81/

From a public health standpoint, watercourses and sources of water supplies used for drinking, domestic, dairying and food manufacturing purposes, which are polluted or otherwise threaten the health of the public, are regarded as nuisances and are subject to the abatement powers vested in the health authorities. 82/ In addition, the irrigation of land within the boundaries of towns or within a certain distance therefrom can be curtailed in the interest of public health at the instigation of the health authorities. 83/

C. Environmental protection

Specific provisions exist purporting to protect environmental conditions conducive to the conservation of natural resources at large, including water resources. For soil and water conservation purposes, the land use planning authorities are empowered to inhibit anyone from destroying trees or wooded areas, under a penalty of up to \$EC 1,000. 84/ In addition, the forest authorities may - at the request of the landowner concerned - take over the management of private lands for purposes of conserving the natural resources therein. 85/

Additional legal provisions or measures relevant to this topic will be reviewed in section IX below.

D. Other control measures (mosquito control)

Detailed provisions purport to prevent and control the formation of mosquito-breeding places. The law provides, among others, for the screening of wells and other water storage receptacles; for the perforation of pipes for the conveyance of excess waters from premises; and for the stocking of ponds, tanks, fountains and canals with larvivorous fish. 86/ Any collection of water found to harbour mosquitoes is regarded as a nuisance and dealt with accordingly. 87/

Finally, the authorities in charge of road construction and maintenance are required by law to prevent the formation of mosquito-breeding collections of water in the course of road construction operations. 88/

VII. LEGISLATION ON GROUND-WATER RESOURCES USE AND PROTECTION

Whereas all underground water resources have been expressly vested in the Crown and have public property status, 89/ no specific legislative provisions exist with regard to their development, conservation and use. The abstraction and use of ground-water, therefore, follow the rules applicable to the utilization of public water resources at large. 90/ In addition, the protection of ground-water resources could be effected through the available mechanisms for the designation of

areas where water resources at large are placed under special protective measures, 91/ including separate measures for the quality protection of domestic and drinking water supplies. 92/ It should also be noted that the Minister in charge of health is empowered to regulate "wells" in connection with the provision of water supplies for human consumption in buildings. 93/

VIII. CONTROL AND PROTECTION OF WATER WORKS AND STRUCTURES

Fragmentary legal provisions exist on the subject. The Central Water and Sewerage Authority has express - but not exclusive - power to construct and maintain works for the conservation, storage and distribution of water; for the control and disposal of flood waters; and for the protection of water resources - both surface and underground. Relevant costs are recoverable from the beneficiaries of the works. 94/ At the same time, the Authority has regulatory powers over the construction and maintenance of land drainage and soil conservation works, and works for the collection and distribution of water and for the protection of water quality. 95/ The drainage of lands is also subject to the regulatory responsibility of the public health authorities. 96/

For the protection of river embankment works carried out in connection with road projects, the owners of land riparian to an embanked watercourse may be inhibited from taking gravel or boulders from within a certain distance of the embankment works in place, and may be directed to keep the watercourse "in good order" by the Chief Engineer. 97/

IX. DECLARATION OF PROTECTED ZONES AND RESTRICTED AREAS

For the purposes of protecting water resources at large, the Minister responsible for public health is empowered to designate areas where water resources exist or whence they originate as protected areas. Prior consultation with the Central Water and Sewerage Authority, and gazetting of designation notices, are required procedural steps. As a result of the designation process, restrictions apply to any activity within a protected area according to the specifications to be spelled out in the designation notice. 98/ Land use and other restrictions apply with respect to areas that can be separately designated by the health authorities for the quality protection of the sources of domestic and drinking water supplies. 99/

Current legislation calls for the designation of the watershed of the Colonarie river and of the Richmond river as forest reserves for the entire duration of the exclusive water-power rights granted the St. Vincent Electricity Services Ltd. 100/ Upon their designation as forest reserves, Crown lands in the above watersheds cannot be disposed of, and specific activities thereon prejudicial to the existing forest cover are restricted under the responsibility of the forestry authorities. 101/

In addition to the designation mechanisms reviewed above, the protection of land and related water resources may be effected through purchase of lands by government agencies with a conservation-oriented mandate - most notably, the St. Vincent National Trust 102/ - and restricting activities thereon.

X. GOVERNMENT WATER RESOURCES INSTITUTIONS AND ADMINISTRATION

Various government departments and agencies and the office of the Governor-General, concur in the administration of water resources in St. Vincent at the national level of government, i.e., with jurisdiction over the entire country. Local governments also have a share of responsibilities in the control of water resources.

A. At the national level

The Central Water and Sewerage Authority is the principal government agency with advisory, executive and rule-making responsibilities related to the development, conservation and use of the country's fresh water resources - both surface and underground. Specifically, the Authority (a) investigates, has power to regulate and advises the Minister responsible for health on all matters concerning the development, conservation and use of water resources, including the provision of water supply and sewerage services; 103/ (b) controls all withdrawals and diversions of public waters; 104/ (c) may execute and maintain works for the conservation, storage, distribution and measurement of water for the protection of watercourses and for the control of floods; 105/ and (d) may levy and collect water and sewerage rates and charges for services rendered. 106/

The Authority is a body corporate with power to sue and be sued in its own name. It is governed by a Board, whose membership of nine is drawn from government officials (ex officio members) representing public health, agriculture, works and treasury departments; from members of the Kingstown Town Board and the Chamber of Industry and Commerce; and from members of the public at large representing public health and local government interests. A chairman and members who are not ex officio members are appointed by the Governor-General. A Manager - appointed by the Board - is the chief executive officer of the Authority. The Authority enjoys financial autonomy within the means provided by law, and is subject to accounting, auditing and budgeting procedures and requirements. 107/

The Physical Planning and Development Board is the government agency in charge of land use planning and development control. 108/ Its regulatory responsibilities extend to the provision of water services within the framework of land development projects. 109/ The Board's ex officio membership includes, among other government officials, the Manager of the Central Water and Sewerage Authority. 110/

The Housing and Land Development Corporation is responsible for the execution of development schemes within designated land development areas. In the process, the Corporation is empowered to enforce changes in the layout of existing water supply lines and works which are at variance with approved plans. The Corporation's enforcement authority includes the direct execution of required works. 111/ The Corporation's membership is drawn mostly from designated government officials, and it operates subject to the policy-making authority of the Minister in charge of housing. 112/

Finally, the Agriculture and Co-operative Bank provides financial assistance to agricultural development projects, including land drainage and irrigation projects. 113/ The St. Vincent Agricultural Development Corporation executes and operates agricultural development projects, including soil and water conservation works. 114/ The majority of the membership of the Bank's Board of Directors is composed of designated government officials, and the Bank operates subject to the

policy-making authority of the Governor-General acting on the advice of the Cabinet. 115/ The Bank stands to be merged with, and absorbed by, the Development Corporation. 116/ Members of the St. Vincent Agricultural Development Corporation (a separate institution from the Development Corporation) are all appointees of the Cabinet. The Cabinet further retains policy-making authority over the Corporation. 117/

In addition, the following central government departments hold responsibility for aspects of water resources development, conservation and use:

The Minister in charge of public health supervises the Central Water and Sewerage Authority (see above) 118/ and is directly responsible for the designation and protection of water resources controlled areas, including watershed areas. 119/ Public health officials administer the water-related provisions in the health legislation in force. A Central Board of Health functions in an advisory capacity; 120/

The Ministry in charge of works has responsibility for public works at large, including river training and embankment works, and storm water drainage;

The Ministry in charge of agriculture is responsible for the management and protection of watershed areas. 121/ It also undertakes the collection of rainfall data. A Board of Agriculture and Forestry functions in an advisory capacity; 122/

The Ministry in charge of community development is active in the provision of water supplies to community centres.

Important rule-making, executive and judicial functions in the field of water resources development and conservation are attached to the office of the Governor-General by virtue of the executive authority vested in it. 123/ These include (a) authority to substitute himself for the Central Water and Sewerage Authority in the latter's broad-ranging rule-making power; 124/ (b) regulation of, among others, water supply lines within the framework of land use control legislation; 125/ (c) emergency powers in connection with, among others, flood events; 126/ (d) appointment of members of the governing Board of the Central Water and Sewerage Authority; 127/ (e) approval of water and sewerage rates and charges; 128/ and (f) authority to hear direct appeals from assessments made by the Central Water and Sewerage Authority in connection with government-funded water projects. Relevant rulings made by the Governor-General are final. 129/

B. At the local government level

Local governments are empowered to regulate, among others, the prevention of pollution of watercourses within the local government district; the supply of water for domestic purposes, including the prevention of waste and pollution thereof, and the levying of relevant rates; 130/ sewage disposal; the abatement of nuisances, including water-related nuisances; and the control of factories manufacturing aerated waters. In addition, local governments are responsible for the maintenance of waterworks, among others. 131/

XI. OTHER WATER DEVELOPMENT INSTITUTIONS

The St. Vincent Electricity Services Ltd. is a limited liability company which has been granted an exclusive 60-year franchise for the generation, distribution and sale of electric energy in the islands of St. Vincent and Bequia. 132/ For the purposes of the franchise, the company has been granted by law exclusive rights to the water power potential of designated stretches of the Colonarie river and the Richmond river, and to the hydropower potential of other sites in St. Vincent to be designated by the Government. 133/ In view of the public interests involved, the company operates, in many respects, like a regulated public utility.

The Mustique Company is a limited liability company with an exclusive franchise to develop the island of Mustique in the Grenadines. The company's franchise includes the provision of public utility services, in respect of which it enjoys exemption from customs duties and taxes. 134/

The St. Vincent National Trust is a semi-public institution charged with identifying and protecting areas of aesthetic value - arguably including scenic stretches of watercourses. 135/ The Trust is managed by a Board of Trustees, with the Minister in charge of Museums and Antiquities being an ex officio member. For the purposes of its mandate, the Trust enjoys tax-exempt status. 136/

XII. LEGISLATION ON FINANCIAL ASPECTS

A. Water and sewerage rates and charges

Subject to the approval of the Governor-General and publication in the Gazette, the Central Water and Sewerage Authority has power to fix, levy and collect rates, charges and fees with respect to water supplies, and water and sewerage services provided. 137/ Local governments seem to have comparable powers concerning water supply services provided by them. 138/ Under the terms of central government regulations currently in force, all private connections are charged an annual general water rate based on the annual general value of the premises assessed by the Authority. 139/ In addition, all metered connections are charged a fixed rate of \$EC 2.50 per 1,000 gallons of water supplied. Unmetered connections are charged a variable rate according to the size of the connection in place, and additional fixed charges with respect to appliances (wash basins, water closets, garden hoses) and structures (swimming pools) served. 140/ Storage tanks are exempted from any charge. 141/

Minimum charges apply with respect to any new connection to a public water supply system. Minimum charges vary with the size of the connection. If the actual cost of connecting the premises exceeds the minimum charge, however, the consumer must reimburse the Authority the excess, and the Authority may delay turning the service on until full payment is made. 142/ The actual cost of the service is also the basic charge for reconnecting the premises after they have been disconnected by the Authority in response to a fault of the consumer. In this case, however, a 10 per cent penalty surcharge is levied over and above the actual cost. 143/

No allowance is made in case the service is turned off by the Authority for the purposes spelled out by the law. 144/

A separate fixed rate of \$EC 15 per 1,000 gallons is charged with respect to water supplied to ships. 145/

Meters supplied by the Authority are rent free, and no charge applies for the installation of meters on premises which were unmetered as at 1 January 1973. The cost of metering other premises is recoverable from the beneficiary. 146/

As sewerage charge has been decreed with respect to dwelling houses and commercial premises served by public sewers. The charge varies according to the type of premises served, so that businesses pay more than dwelling places. 147/

Water rates chargeable by local governments are based on the value of properties served by local authorities with a private connection. Religious, educational, charitable and government properties, however, are exempted from the assessment of water charges. 148/

B. Government financial policies

A water rate or other charge can be levied by the Central Water and Sewerage Authority on the beneficiaries of works for the conservation, storage and distribution of water, for the protection of watercourses, and for flood control purposes executed by the Authority with government funds. Assessments made by the Authority can be challenged directly before the Governor-General whose determination is final. When the above works are executed by the Authority within the framework of a community project, the Authority may levy a water rate or other charge on actual and potential beneficiaries of the works, but direct recourse to the Governor-General against relevant assessments appears to be unavailable. 149/

Long-term, interest-bearing loans may be granted by the Government for the execution and maintenance of soil and water conservation required of owners or occupiers of agricultural lands by order of the agriculture authorities. 150/

Individuals and co-operative societies engaged in agricultural operations can obtain long-, medium-, and short-term interest-bearing loans for, among others, land drainage and irrigation works from the St. Vincent Agriculture and Co-operative Bank. 151/ Loans are not to exceed a fixed ceiling set according to different classes of beneficiaries. 152/

XIII. IMPLEMENTATION OF WATER LAWS AND REGULATIONS

Under this heading will be reviewed legal provisions concerning protection of rights and interests in water resources; and enforcement of water laws and regulations, including penalties and special enforcement powers vested in the government authorities responsible for the control, distribution and conservation of water resources.

Water rights which were existing at the time of enactment of the principle whereby public waters could thenceforth be used solely subject to an administrative grant of permit have been expressly safeguarded and left by law undisturbed. 153/ Short of specific statutory provisions, the ordinary means afforded by general legislation are available to the holders of rights and interests in water resources at large seeking redress from undue interference from other users of the resource, and from determinations of governmental authorities responsible for the control and protection of water resources and public water supplies. 154/

Most legislative provisions related to the use and protection of fresh water resources and public water supplies are sanctioned by a penalty, pecuniary or otherwise. 155/ No specific penalty, however, is called on to sanction the prohibition to withdraw and use public waters otherwise than subject to an administrative grant of permit. The fact that any other legal instrument seeking to transfer or convey a right or interest in public waters is null and void 156/ is not so much a penalty for breaching the above prohibition as an implicit corollary of the prohibition itself. Violators are subject, however, to specific enforcement powers vested in the administering authorities (see below). The breach of regulatory provisions on the proper use and quality protection of public water supplies is sanctioned with the suspension of the service, and with a modest surcharge for the reconnection thereof over and above the charge otherwise applicable. 157/ The service may be suspended also in response to failure to pay the applicable rate, but no surcharge applies for the reconnection of the service after all arrears have been paid. 158/

Restrictions applicable within designated water-protected areas carry a pecuniary sanction of up to \$EC 5,000. 159/ A fine of up to \$EC 240 or imprisonment of up to six months sanction instead the separate restrictions applicable within watershed areas designated as forest reserves. 160/ Damaging public pumps carries the obligation to refund the Government the cost incurred in repairing the damage. 161/

The public health legislation on nuisances contemplates a complex court-administered abatement process whereby the courts have authority to direct a convicted offender to take appropriate measures to remedy the offence. If the offender refuses to co-operate, the courts may authorize the health authorities to execute the court orders at the offender's expense. In addition, the author of a nuisance can be fined up to \$EC 50, and up to \$EC 25 per day as long as he refuses to comply with a government order for the abatement of a nuisance. 162/ In addition, the courts may direct that the payment of rent be withheld concerning dwellings at fault with the water supply requirements mandated by the law. 163/

A fine of up to \$EC 100, and an additional daily fine of up to \$EC 20, sanction the obligation of factories to connect with a sewerage system in place for the disposal of drainage and effluents. 164/ Non-compliance with orders made by the land use planning authorities for, among others, the conservation of soil and water resources, carries the penalty of a fine of up to \$EC 1,000, and an additional daily fine of up to \$EC 100 for as long as the offence continues. 165/

For law enforcement purposes, the Central Water and Sewerage Authority is empowered to enter any property and take measures for the control, conservation and protection of water resources - and, more specifically, for the stopping and removal of unauthorized abstractions or diversions of water, and for the prevention of waste and pollution of water. In all these specific cases no compensation is due by the Authority for damage occurring as a consequence of enforcement operations. Obstructing the Authority in the discharge of its law enforcement responsibilities is penalized with a fine of up to \$EC 2,000 or imprisonment of up to six months. 166/ Powers of entry are vested also in local government officials for purposes of preventing the wasteful use of public water supplies. 167/

The public health authorities have the power to enter and inspect premises for the control and prevention of nuisances. 168/ They also have power to execute administrative or judicial orders for the abatement of nuisances if the author of the nuisance fails to comply therewith. The executing authorities also enjoy the necessary entry powers in this connection. 169/

Comparable entry and direct execution powers are vested in the land use planning authorities for the enforcement of land use controls - including water-related aspects thereof; 170/ in the roads authorities for land drainage purposes; 171/ and in the agriculture authorities for the enforcement of soil and water conservation orders made within the framework of governmental supervision of agricultural land management practices. 172/

Notes

1/ Central Water and Sewerage Authority Act, sects. 2 (definition of "body of water") and 13.

2/ Ibid., sect. 2 (definition of "body of water"). A case in point is the canal linking the Colonarie and the Cramacrabou rivers in St. Vincent. The canal is the property of the owners of the lands traversed or bordered by the canal (private property in sections of the canal was expressly confirmed by special legislation, namely, the Mount Greenan and New Adelphi Canal Ordinance, sect. 3), but the waters flowing in it, being drawn from the Colonarie river, retain public property status.

3/ This principle seems to override the right to freely take water for domestic use and for the watering of animals which was sanctioned by the Mount Greenan and New Adelphi Canal Ordinance in favour of water users in neighbouring lands (sect. 4 (3)).

4/ Kingstown Board Act, sects. 27-28.

5/ Central Water and Sewerage Authority Act, sects. 15-16. The Act was proclaimed, and its provisions came into effect, on 13 March 1979 (by S.R.O. No. 19 of 1979).

6/ Central Water and Sewerage Authority Act, sect. 16.

7/ Ibid., sect. 23. See also sect. XIII below.

8/ Central Water and Sewerage Authority Act, sects. 13 and 15.

9/ By operation of sect. 25 of the Electricity Supply Act. See also sect. IV.B below.

10/ Central Water Supply and Sewerage Act, sect. 25 (1) (a).

11/ Public Health Act, sect. 134 (1).

12/ Roads Ordinance, sect. 13 (1).

13/ Kingstown Board Act, sects. 27-28.

14/ Stretches of the Colonarie river and of the Richmond river and tributaries thereof have been designated by law to be reserved for hydroelectric development by the company - to the express exclusion of any other kind of exploitation or use (Electricity Supply Act, sect. 25 (2)). To the author's knowledge, however, actual reservation has not been decreed as yet. It may be of interest to note, in this connection, that the reservation of the same stretch of the Colonarie river has been mandated by the 1951 Hydro-Electric Ordinance (sect. 7 of the Schedule attached to the statute).

Notes (continued)

15/ The special legal régime governing the exploitation of the hydropower resources of St. Vincent has been outlined on the basis of a combined reading of sects. 3-5 and 25 (1) of the Electricity Supply Act. The outlined differentiation of legal régimes in regard to the hydroelectric exploitation of (a) reserved watercourses as opposed to (b) other watercourses may reconcile in a satisfactory manner the provisions granting the Company an exclusive right to generate, distribute and sell electric energy from any source, and the provisions granting at the same time an exclusive right to reserved sources of hydroelectric energy.

16/ Prescription Act, sect. 2.

17/ Central Water and Sewerage Authority Act, sects. 8 (a)-(e), 17 (1) (d) and 25 (1) (a).

18/ Ibid., sect. 17 (1) (d) and (2). The Authority's overriding powers in connection with maintenance works arguably include any interference with the present use and state of the land as is reasonably required for maintaining water supply lines.

19/ Local Government Ordinance, sect. 56 (1) (f) and (2).

20/ Central Water and Sewerage Authority (Water Supply) Regulations, sects. 3, 5-8 and 16; corresponding provisions are contained in the By-Laws enacted by the Town Boards of Barrouallie, Calliaqua, Layou, Port Elizabeth, Georgetown and Chateaubelair, and by the District Council of the island of Bequia in the Grenadines.

21/ Central Water and Sewerage Authority (Water Supply) Regulations, sect. 17.

22/ Ibid., sect. 20, and corresponding provisions in the By-Laws enacted by the Town Boards and District Council shown in footnote 20 above.

23/ Central Water and Sewerage Authority (Water Supply) Regulations, sect. 17A.

24/ Town and Country Planning Act, sect. 11 (1). Works contemplated by the Central Water and Sewerage Authority, however, are exempted from planning permission (sect. 11 (3) (b)).

25/ Town and Country Planning Act, sect. 12 (3) (d); and Land Development Control (Towns) Regulations, sects. 42 and 58 (iii).

26/ Land Development Control (Towns) Regulations, sect. 3 (1), (3) and (5); and Land Development Control (Buildings) Regulations, sect. 2 (1) and Schedule.

27/ Public Health Act, sects. 91 (1) (m) and 97. See also sect. IV.A.3 below.

28/ The Sanitary Authority (Tenement Houses in Kingstown) Regulations, sect. 4.

29/ Housing and Land Development Corporation Act, sect. 30. See also sect. X.A below.

Notes (continued)

- 30/ Town and Country Planning Act, sect. 22 (h).
- 31/ Public Health Act, sect. 103 (1) (q). See also sect. IV.A.3 below.
- 32/ Public Health Act, sect. 111; and Local Government Ordinance, sect. 56 (1) (f) and (2).
- 33/ Small Towns Regulations, sect. 24; Central Water Supply and Sewerage Authority (Water Supply) Regulations, sects. 13 and 15; corresponding provisions are contained in the By-Laws enacted by the Town Boards of Barrouallie, Calliaqua, Layou, Port Elizabeth, Georgetown and Chateaubelair, and by the District Council of the island of Bequia in the Grenadines.
- 34/ Public Health Act, sect. 112.
- 35/ Ibid., sect. 91 (1) (d) and (m). See also sect. IV.A.2 above.
- 36/ Food Vendors and Food Vending Establishments Regulations, sect. 8.
- 37/ Sale of Milk Regulations, sect. 18.
- 38/ Aerated Water Factories Regulations, sect. 9.
- 39/ Public Health Act, sect. 103 (1) (q). In connection with wells, see also sect. VII and relevant comments below.
- 40/ Public Health Act, sect. 134 (1).
- 41/ Ibid., sect. 91 (1) (d).
- 42/ Central Water and Sewerage Authority Act, sect. 17 (1) (a)-(b).
- 43/ Roads Ordinance, sect. 40. The substantive and procedural requirements for the designation of watercourses for road protection purposes are to be spelled out in separate regulations (ibid., sect. 46 (1) (j)).
- 44/ Agriculture Ordinance, sects. 3, 4 (1) and (2) (d). For relevant enforcement provisions see sect. V.B below.
- 45/ Agricultural Small Tenancies Ordinance, sect. 18, and Fourth Schedule (iv). The right to compensation, however, is conditional upon the landlord's prior consent to the execution of improvement works (ibid., sect. 19).
- 46/ Emergency Powers (Hurricane, Earthquake, Fire, Flood or any natural disaster) Ordinance, sects. 2, 3 (1) and (2) (b).
- 47/ Agriculture Ordinance, sects. 4 (2) (c), 5 (1), 8 and 14.
- 48/ Central Water and Sewerage Authority Act, sect. 25 (1) (f). Regulations to this effect have not yet been issued.
- 49/ Agricultural Small Tenancies Ordinance, sect. 2 (1) (definition of "rules of good husbandry" (a)), 8 (1) (b) (ii).

Notes (continued)

- 50/ Agricultural Small Tenancies Ordinance, sect. 18 (1), and Fourth Schedule, (iii)-(iv). The right to compensation, however, is conditional upon the landlord's prior consent to the execution of improvement works (ibid., sect. 19).
- 51/ Public Health Act, sect. 103 (1) (s) and (2) (b).
- 52/ Central Water and Sewerage Authority Act, sect. 25 (1) (c) and (f).
- 53/ Town and Country Planning Act, sect. 22 (h).
- 54/ In particular, under current legislation, the responsibility of the Central Water and Sewerage Authority is of an investigatory, advisory and regulatory nature only.
- 55/ Local Government Ordinance, sect. 56 (1) (g); and Kingstown Board Ordinance, sect. 81 (6).
- 56/ Central Water and Sewerage Authority Act, sect. 25 (1) (f), (h) and (j).
- 57/ Public Health Act, sect. 103 (1) (o).
- 58/ Privies Regulations.
- 59/ Land Development Control (Towns) Regulations, sects. 40-41.
- 60/ Factory and Machinery Regulations, sect. 7; and Factories Ordinance, sect. 26. See also sect. XIII below.
- 61/ Public Health Act, sects. 103 (1) (d), (2) (b) and 134 (2) (b).
- 62/ Aerated Water Factories Regulations, sect. 7.
- 63/ Sanitary Authority (Tenement Houses in Kingstown) Regulations, sect. 3 (b).
- 64/ Land Development Control (Towns) Regulations, sects. 3 (3) and (5), 30, 31, 32, 57 and 58 (ii).
- 65/ Central Water and Sewerage Authority Act, sect. 25 (1) (h).
- 66/ Roads Ordinance, sects. 15 and 17.
- 67/ Central Water and Sewerage Authority Act, sect. 23 (1); Central Water and Sewerage Authority (Water Supply) Regulations, sects. 6, 8 (b), 11 and 12; and Small Towns Regulations (1930), sect. 2.
- 68/ By-Laws enacted by the Town Boards of Barrouallie, Calliaqua, Layou, Port Elizabeth, Georgetown and Chateaubelair, and by the District Council of the island of Bequia in the Grenadines.
- 69/ Central Water and Sewerage Authority (Water Supply) Regulations, sect. 17 (1) (13). See also sect. XII.A below.

Notes (continued)

70/ Central Water and Sewerage Authority Act, sect. 25 (1) (c).

71/ Public Health Act, sect. 111.

72/ Central Water and Sewerage Authority Act, sect. 25 (1) (d).

73/ Local Government Ordinance, sect. 56 (1) (f), (k) and (2); and Kingstown Board Ordinance, sect. 81 (9).

74/ Public Health Act, sects. 91 (1) (e) and 92-95. The requirements for the designation of watercourses for waste discharge purposes are not spelled out in the statute, nor in corresponding rule-making authority expressly granted to the responsible Minister.

75/ Public Health Act, sects. 103 (1) (e), (g) and 112 (1).

76/ Central Water and Sewerage Authority Act, sect. 25 (1) (f). It is not entirely clear whether the regulatory responsibility of the Authority extends to works for the control of water quality at large, or whether it is restricted to works for the control of water the Authority supplies to the public.

77/ Central Water and Sewerage Authority (Water Supply) Regulations, sects. 13 and 15, and corresponding provisions in the By-Laws of the Town Boards of Barrouallie, Calliaqua, Layou, Port Elizabeth, Georgetown and Chateaubelair, and in the By-Laws of the District Council of the island of Bequia.

78/ Central Water and Sewerage Authority (Water Supply) Regulations, sect. 8 (b).

79/ Privies Regulations, sect. 2.

80/ Public Health Act, sect. 112. Arguably, the requirements for the designation are to be spelled out in pertinent regulations.

81/ Pesticides Control Act, sect. 3 (1) (c) and (2) (c).

82/ Public Health Act, sect. 91 (1) (c)-(d).

83/ Ibid., sect. 134 (1). See also sect. III above.

84/ Town and Country Planning Act, sect. 15 (1) and (3).

85/ Forests Ordinance, sect. 9.

86/ Public Health Act, sects. 116 and 118; and Public Health (Mosquito) Rules, sect. 3.

87/ Public Health Act, sect. 113 (b).

88/ Roads Ordinance, sect. 13 (1) (d).

89/ Central Water and Sewerage Authority Act, sect. 13, and definition of "body of water", ibid., sect. 2. See also sect. II above.

Notes (continued)

- 90/ See sect. III above.
- 91/ Central Water and Sewerage Authority Act, sect. 20, see sect. IX below.
- 92/ Public Health Act, sect. 112. See sects. VI.B above and IX below.
- 93/ Public Health Act, sect. 103 (1) (q). See also sect. IV.A.2 above.
- 94/ Central Water and Sewerage Authority Act, sects. 17 (1), 18 and 19. On the recovery of costs see also sect. XII.B below.
- 95/ Central Water and Sewerage Authority Act, sect. 25 (1) (f).
- 96/ Public Health Act, sect. 134 (2) (c).
- 97/ Roads Regulations, sect. 12.
- 98/ Central Water and Sewerage Authority Act, sect. 20.
- 99/ Public Health Act, sect. 112 (1); see also sect. VI.B above. Arguably, the requirements for the designation are to be spelled out in pertinent regulations.
- 100/ Electricity Supply Act, sect. 25 (2)-(3). See also sects. III above and XI below.
- 101/ Forests Ordinance, sects. 6 and 11.
- 102/ St. Vincent National Trust Ordinance, sects. 4 (b) and 5 (a). Pertinent restrictions are to be spelled out in separate regulations mandated by the law (ibid., sect. 17).
- 103/ Central Water and Sewerage Authority Act, sects. 8 (a)-(f), 20 and 25. The Governor-General, however, may substitute himself for the Authority in the exercise of the latter's rule-making responsibility (ibid., sect. 25 (2)). The Authority has exercised its rule-making power in the water supply sector by reinstating - with amendments - the regulations made by its predecessor Central Water Authority.
- 104/ Central Water and Sewerage Authority Act, sects. 14-15.
- 105/ Ibid., sect. 17. In exercise of its powers, the Authority undertakes stream flow measurements.
- 106/ Central Water and Sewerage Authority Act, sect. 8 (g). This section conditions the exercise of the levying power to the prior approval of the Governor-General. Sect. 22 (1) (a) and (c), however, seems to further subject the exercise of the Authority's power to an express grant of authority from the Governor-General. The Authority also has power to charge all beneficiaries of government-assisted water projects a water rate (see sect. XII.B below).
- 107/ Central Water and Sewerage Authority Act, sects. 3, 4, 6, 7, 10, 11 and 12.

Notes (continued)

108/ Town and Country Planning Act, sect. 7.

109/ See sect. IV.A.2. above.

110/ Town and Country Planning Act, sect. 3 (1) (h).

111/ Housing and Land Development Corporation Act, sects. 6 and 25-30. See also sect. IV.A.2 above.

112/ Housing and Land Development Corporation Act, sects. 4 (1) and 7 (1).

113/ Agricultural and Co-operative Bank of St. Vincent Ordinance, sects. 3A and 17, in connection with Agricultural and Co-operative Bank of St. Vincent Regulations, sects. 6 (i) (d) and 8.

114/ St. Vincent Agricultural Development Corporation Act, sect. 16 in connection with sect. 2 (definition of "agriculture").

115/ Agriculture and Co-operative Bank of St. Vincent Ordinance, sects. 4 (1) and 6A.

116/ As provided for by sect. 3 of the Agricultural Co-operative Bank (merger with Development Corporation) Act. The merger is to take effect subject to proclamation by the Governor-General.

117/ St. Vincent Agricultural Development Corporation Act, sects. 5 and 19.

118/ Central Water and Sewerage Authority Act, sect. 20. See also sect. IX above.

119/ Public Health Act, sects. 3 and 8.

120/ Forests Ordinance, sects. 6 and 11. See also Electricity Supply Act, sect. 25 (2)-(3), and sect. IX above.

121/ Board of Agriculture Ordinance, sects. 2-3.

122/ According to the St. Vincent Constitution, the Governor-General is the chief executive authority (St. Vincent Constitution Order, sect. 50).

123/ Central Water and Sewerage Authority Act, sect. 25 (2).

124/ Town and Country Planning Act, sect. 22 (h); see also sect. IV.A.2 above.

125/ Emergency Powers (Hurricane, Earthquake, Fire, Flood or any natural disaster) Ordinance, sects. 2, 3 (1) and (2) (b); see also sect. V.A above.

126/ Central Water and Sewerage Authority Act, sect. 4 (2).

127/ Ibid., sect. 8 (g); see also sect. XII.A below.

128/ Central Water and Sewerage Authority Act, sect. 18 (2); see also sects. XII.B and XIII, below.

Notes (continued)

129 On the responsibility of local governments in regard to water supply matters, see also sect. IV.A.1 above.

130/ Local Government Ordinance, sect. 56 (1) (f), (g), (j), (t), (bb), (ii) and (2); Kingstown Board Ordinance, sect. 81 (6), (9), (16) and (24) (b). It should be noted that, in addition to various towns and villages in the island of St. Vincent, the island of Bequia in the Grenadines also is a local government unit (Local Government Ordinance, sect. 5).

131/ Local Government Ordinance, sect. 11 (b). No definition of "waterworks" is given, however, in the Ordinance or in contemporary water statutes (namely, the 1950 Central Water Distribution Authority Ordinance, and its successor, the 1955 Water Distribution Ordinance).

132/ Electricity Supply Act, sect. 3. Sect. 34 of the Act empowers the Governor-General to extend the franchise to any island in the Grenadines in addition to Bequia. Previously, similar arrangements had been made with, and similar privileges granted to, the Colonial Development Corporation (as provided for by the now superseded Hydro-Electric Ordinance, 1951).

133/ Electricity Supply Act, sect. 25. See also sect. III above.

134/ Mustique Company Limited Ordinance, Schedule, sect. 5 (A), 12 (F) (c).

135/ St. Vincent National Trust Ordinance, sect. 4 (b). See also sect. IX above.

136/ St. Vincent National Trust Ordinance, sects. 7 (1) and 13-16.

137/ Central Water and Sewerage Authority Act, sects. 8 (g), 25 (1) (a) and (i); and Central Water and Sewerage Authority (Water Supply) Regulations, sect. 18 (3) and (5).

138/ Local Government Ordinance, sect. 56 (1) (f).

139/ Central Water and Sewerage Authority Act, sect. 22 (1) (a); and Central Water and Sewerage Authority (Water Supply) Regulations, sect. 18 (1)-(3), and First Schedule.

140/ Central Water and Sewerage Authority (Water Supply) Regulations, sect. 18 (4), and Second and Third Schedule.

141/ Ibid., sect. 17A.

142/ Ibid., sects. 3 (1) and 4.

143/ Central Water and Sewerage Authority (Water Supply) Regulations, sects. 8-9 and Fourth Schedule.

144/ Ibid., sect. 10.

145/ Ibid., sect. 20 (2).

Notes (continued)

146/ Ibid., sect. 17 (13) and (16).

147/ Ibid., sect. 22 and Fifth Schedule.

148/ Local Government Ordinance, sects. 33 (1) (b), 34 (1) and 40.

149/ Central Water and Sewerage Authority Act, sects. 18-19. See also sect. VIII above.

150/ Agriculture Ordinance, sects. 15-16. See also sects. V.A and B above.

151/ Agricultural and Co-operative Bank of St. Vincent Ordinance, sects. 17, 18 and 20, in relation to Agricultural and Co-operative Bank of St. Vincent Regulations, sect. 8. See also sect. X.A above.

152/ Agricultural and Co-operative Bank of St. Vincent Regulations, sect. 10.

153/ Central Water and Sewerage Authority Act, sect. 15. See also sect. III above.

154/ Direct recourse to the Governor-General from assessments made by the Central Water and Sewerage Authority in connection with government-funded water-related works is expressly available to affected persons. It is further stipulated that the Governor-General's ruling is final (Central Water and Sewerage Authority Act, sect. 18 (2)). See also sect. XII.B.

155/ It should be noted that the Central Water and Sewerage Authority has - by law - the option of enacting penalties of up to \$EC 5,000 or imprisonment of up to two years, or both, for breach of any regulations made by the Authority (Central Water and Sewerage Authority Act, sect. 25 (4)).

156/ Central Water and Sewerage Authority Act, sect. 16. See also sect. III above.

157/ Central Water and Sewerage Authority (Water Supply) Regulations, sects. 8-9, and Fourth Schedule (b).

158/ Ibid., sect. 21 (2).

159/ Central Water and Sewerage Authority Act, sect. 20. See also sect. IX above.

160/ Forests Ordinance, sect. 11. In addition, offences involving trees or timber may be penalized with payment of compensation to the Government - at the rate of up to \$EC 4.80 per tree or log of timber (ibid., sect. 16 (1)).

161/ Small Towns Regulations, sect. 30.

162/ Public Health Act, sects. 92-95.

163/ Ibid., sects. 93 (9) and 94 (1), in connection with sect. 91 (1) (m).

164/ Factories Ordinance, sect. 26.

Notes (continued)

165/ Town and Country Planning Act, sect. 15 (3). See also sect. VI.C above.

166/ Central Water and Sewerage Authority Act, sect. 23 (1) and (3).

167/ Barrouallie Town Board By-Laws, sect. 48; Bequia District Council By-Laws, sect. 47; Calliaqua Town Board By-Laws, sect. 48; Layou Town Board By-Laws, sect. 48; Port Elizabeth Town Board By-Laws, sect. 47; Georgetown Town Board By-Laws, sect. 49; and Chateaubelair Town Board By-Laws, sect. 48.

168/ Public Health Act, sect. 96.

169/ Ibid., sects. 94 (2) and 95.

170/ Town and Country Planning Act, sects. 13 (4), 19 (1) (a) and (4).

171/ Roads Ordinance, sects. 15 (2) and 17. See also sect. V.C above.

172/ Agriculture Ordinance, sect. 8 (4).