

I N T R O D U C T I O N

Ghana was constituted from the former British Colony of the Gold Coast together with the Trusteeship Territory of Togoland. It gained independence in 1957, and was declared a Republic within the Commonwealth in 1960, with Dr.Kwame Nkrumah as President. Its subsequent political history has been marked by an alternation of civil and military governments. At present a military regime is in power, led by Flt. Lt. Jerry Rawlings.

The country, with an area of 92,100 sq. miles and a population of about 13 million, is situated on the Gulf of Guinea, West Africa, within the tropics. Climate is generally hot and humid in the south, and hot and dry in the north, with regional variations in climatic pattern. Annual rainfall varies from 28 inches to 86 inches, depending on relief.

WATER

Water shortages and sanitation continue to be a problem in Ghana largely due to the climate. In 1975 only 35 per cent of the population had access to safe water (World Bank World Development Report, 1982). The Irrigation Development Authority was established in 1977 (see Irrigation Development Authority Decree, 1977 (S.M.C.D. 85)) to investigate and develop irrigation, but there are many physical problems. Farming on the Accra plains would greatly benefit from irrigation but this land is erosional rather than alluvial and irrigation schemes have met with difficulties as a result. Irrigation has improved agriculture on the south east coastal belt.

The main river is the Volta which is dammed at Akosombo to form the Volta Lake, fed by the Black, White and Red Voltas and also the rivers Kulpawm, Afram, Sene and Ori. There is a gradual transition from river to lake and large areas of land are periodically exposed when water is drained away in the operation of flood control and water supply programmes. The rivers Pra and Ankobra are also of major importance. These rivers, and others, are mentioned frequently in the legislation, especially in the Forest Reserves Orders and the Volta River Development Act. 1961 (Act 46).

The Volta River Project

The Volta River Project commenced in 1966 under the Nkrumah administration and is said to be the most ambitious project in West Africa. Ghana has no coal but has a large hydroelectricity energy potential. The Volta River Project was intended to utilise this potential to develop industrialisation through aluminium production and in other ways.

By 1968 the hydroelectricity project supplied 97.5 per cent of the national electricity consumption, of which 70 per cent was used for aluminium smelting. The hydroelectricity scheme currently supplies the Accra-Kumasi-Takoradi area, and electricity is exported to Togo and Dahomey.

The Volta is one of the largest man-made lakes in the world with a maximum of 3,275 sq.miles. It displaced 80,000 people from the 739 villages submerged under the lake, estimated to be 1 per cent of the population (David Hart, 1980), to be resettled in 52 new villages.

The Project was successful in the supplying of electricity for aluminium production and in attracting foreign investment. It has provided vast quantities of water for potential use in irrigation. Also it has greatly increased fish production. The present catch from the Volta Lake is about 38,000 tonnes per year, equivalent to 20 per cent of Ghana's total fish production. However, the side effects have made the Volta River Project a subject of controversy. Grave problems have arisen in the resettlement schemes, including problems of housing and compensation; and the incidence of water-borne parasitic diseases, especially schistosomiasis (bilharzia), has been greatly increased. The geographical distribution of onchocerciasis (river blindness) has also

been affected. The control of these diseases is very closely bound up with conditions of supply and use of water for agriculture, human consumption and sanitation.

The Volta River Development Act, 1961 (Act 46) covers the use of the lake for fish production and gives details regarding health safeguards, planning, resettlement and compensation, control of water flow and salination.

The side effects and problems associated with the Project have been covered in detail by David Hart in The Volta River Project: A Case Study in Politics and Technology, 1980*.

AGRICULTURE

Agriculture is an important part of the Ghanaian economy. In 1980, 53 per cent of the labour force was employed in agriculture, 27 per cent in services and 20 per cent in industry (World Bank World Development Report, 1983). Cocoa has always been the most productive crop and is the largest single source of revenue. Two million acres of land are devoted to cocoa production and in 1979 to 1980 yielded 300,000 tonnes.

Other crops include cassava, maize, rice, plantain, groundnuts, yam and cocoyam, fruit, kola, coffee and coconut. Cash crops are becoming increasingly important, mainly tobacco, pepper, ginger, fruits, cotton, palm oil and sugar cane.

Most of production is undertaken by African capitalist smallholders. Shifting cultivation has been more common in areas of low population density such as the north, but individual land ownership and the establishment of Forest Reserves have encouraged fixed cultivation.

Livestock farming includes goats, sheep and cattle and is most productive in the north savanna lands where tsetse flies are less prevalent.

Food shortages occur mostly in the Accra plains and coastal lowlands, mainly due to cocoa farming taking up so much of the land, but also due to water shortages.

MINERALS

Minerals are Ghana's second largest export, gold being the most important, followed by diamonds, in which Ghana ranks as the world's second largest producer in terms of weight. Manganese has now exceeded the value of diamonds and Ghana is one of the world's greatest producers. Bauxite has become more important since cheap hydro-electricity made possible the development of aluminium smelting.

Deep mining yields 90 per cent of the gold, and mining legislation reveals that water seepage was once a problem although this is no longer the case due to mechanisation. Deep mining is controlled by trans-national corporations.

Dredging and panning are also carried out, especially in the rivers Ofin, Ankobra and Tana. Large dredgers extract the sand from the river bed which is washed for gold particles. Legislation indicates that this is also carried out on a small scale by individuals in Forest Reserves and particularly by native peoples (see Forest Reserves Orders, pp.53-59).

The importance of mineral production is reflected in the considerable proportion of related legislation intended to protect watercourses from pollution.

FOREST

Ninety per cent of Ghana's timber is exported and in 1978 this was the third most important export. Ghana is one of the world's largest hardwood producers although softwood now makes up two thirds of production. Forest Reserves were set up under the Forests Ordinance, 1951 (revised) Cap.157 and make up more than 16,000 sq. kilometres of more than 82,000 sq. kilometres of closed forested land. Forests in Ghana have been seriously depleted by farmers clearing land for agriculture and the Forest Protection

* Further references are given in the Bibliography.

Decree, 1974 (N.R.C.D.243) is a response to this problem. More recently the Ghana Forestry Commission Act, 1980 (Act 405) established a Forestry Commission.

Timber comes mostly from the west rather than from the rain forest of the south west. About half of the timber is exported as logs, but factories are gradually developing for manufacture. Saw mills have been established by the U.K. and the U.S.A. and most timber production is controlled by private foreign capital.

FISHERIES

Sea fishing provides about 80 per cent of total supply; the rest comes from inland waters, mainly the Volta Lake where production is increasing rapidly. Production does not satisfy demand and a lot of fish is therefore imported. Fishing legislation emphasises sea fishing and does not specifically mention the Volta Lake.

STATISTICS

From the World Bank World Development Report 1983:

G.N.P. per capita	1981	400
Life expectancy	1981	54 years
Infant mortality rate (aged 0-1)	1981	101
Adult literacy rate	1960	27 per cent

SELECTION OF LEGISLATION

The criteria for selection of legislation relevant to water have included anything that is likely to affect water or be affected by water, which broadens the scope to include mining, mineral tailings, fishing, fertilisers, pesticides, forests, flooding, droughts, pollution, health, animals, sanitation, reservoirs, irrigation, etc. Only inland waters are considered, as marine waters are generally covered by international law.

REFERENCES

- BEADLE, L.C.; Inland Waters of Tropical Africa: Introduction to Tropical Limnology. 1981. 2nd Edition. Longman. Chapter 20: Manmade Lakes, includes a section on the Volta Lake.
- GROVE, A.T.; Africa. 1978. 3rd Edition. Oxford University Press. Chapter 2: Ecology; Chapter 8: West Africa.
- HART, David; The Volta River Project: A Case Study in Politics and Technology. 1980. Edinburgh University Press.
- UDO, Reuben K.; Comprehensive Geography of West Africa. 1978. Heinemann Educational. Chapter 2: Water needs; Chapter 19: Ghana.

For further information see the Bibliography.

NOTE ON THE NATURE OF GHANIAN WATER LEGISLATION

Ghana has in fact enacted relatively little legislation which is primarily concerned with protecting the quality of water as a natural resource: the principle example of such legislation is the Ghana Water and Sewerage Corporation Act. On the other hand, legislative measures effecting water are frequently incorporated in legislation which has other primary purposes.

There is an emphasis in this legislation on the creation of official agencies for the protection of natural resources and the development of the economy; such framework legislation frequently establishes a commission or other authority which is empowered both to formulate policy and to propose regulatory controls for achieving the policy objectives. Such legislation may envisage the utilisation of water resources as the means by which its objectives may be achieved (e.g. Volta River Act) or be concerned with water resources as the basis of economic activity (e.g. Fisheries Commission Act 1980).

There is a third category of legislation which is concerned with conservation of the environment (e.g. Land Planning and Soil Conservation Ordinance 1953 or the Forestry Commission Act 1980) or development of the economy (e.g. Minerals Ordinance 1936). This category is not primarily concerned with water resources but contains some reference to water as a necessary aspect of conservation or a pre-requisite of economic development.

In some instances the objective in controlling the supply of, or the quality of, the water is the preservation of health (e.g. Ghana Water and Sewerage Corporation Act 1965, Mosquitoes Ordinance 1911 and Mining Health Areas Ordinance 1936) but the majority of the legislation is concerned with water in relation to economic development (e.g. Irrigation Development Authority Decree 1977; Volta River Act 1961).

In developing countries, however, the distinction between protection of the health of the population and the development of economic resources may well be a fine one.

FORMAT AND USE OF THIS VOLUME

This volume sets out to survey all the Ghanaian laws which refer to the conservation, utilisation and protection of water.

Part One - Index of Enactments lists the principal enactments which give attention to water quality, supply and control, in chronological order giving the date, the reference number and page numbers.

Part Two - Index of Subordinate Legislation lists the subordinate legislation made under the enactments referred to above (i.e. amendments and regulations) in chronological order under each principal enactment, also giving the date, reference number and page numbers.

Part Three - Contents of Legislation gives the preamble and all the section headings of each enactment and regulation. Details are given of amendments and repeals. Any section which gives attention to water refers the reader to the appropriate page in Part Four where the legislation is further broken down to give specific detail. The aim of this Part is simply to give the reader an overview of the purpose of the legislation without excessive detail.

Part Four - Analysis of Legislation is further broken down into two sections.

In Section I, extracts of the legislation referring to water are given verbatim. The extracts from each principal enactment and its subordinate legislation are classified under an appropriate heading. The headings and the arrangement of the material under these headings are as follows:

Environmental Protection -

Environmental Protection Council Decree 1974, N.R.C.D.239

Fish -

Ghana Fisheries Commission Act 1980, Act 404

Forests -

Forests Ordinance 1929 (1951 revised), Cap.157

Forests Protection Decree 1974, N.R.C.D.243

Ghana Forestry Commission Act 1980, Act 405

Health -

Mosquitoes Ordinance 1911 (1951 revised), Cap.75

Irrigation -

Irrigation Development Authority Decree 1977, S.M.C.D.85

Mining -

Mining Rights Regulation Ordinance 1905 (1951 revised), Cap.153

Mining Health Areas Ordinance 1926 (1951 revised), Cap.150

Minerals Ordinance 1936 (1951 revised), Cap.155

Radio-active Minerals Ordinance 1946 (1951 revised), Cap.151

Minerals Act 1962, Act 126

Planning -

Land Planning and Soil Conservation Ordinance 1953, No.32

Pollution -

Atomic Energy Commission Act 1963, Act 204

Oil in Navigable Waters Act 1964, Act 235

Sanitation -

Ghana Water and Sewerage Corporation Act 1965, Act 310

Watercourses -

Rivers Ordinance 1903 (1951 revised), Cap.226

Volta River Development Act 1961, Act 46

Water Supply -

References only

Wildlife -

Wild Animals Preservation Act 1961, Act 43

In addition to giving verbatim extracts from the legislation, each heading also includes references where appropriate to legislation which is actually detailed under some other heading, but may also have some relevance under the first heading. For example, the Mining Ordinance (Cap.155) is detailed under 'Mining' because this enactment is primarily concerned with mining. However, references are also given to this enactment under 'Pollution' because the relevance of this Ordinance to water law is the prohibition of water pollution from mining activities, and the provision for the treatment of mine

tailings. Thus this section serves two purposes:

- (a) it gives the verbatim detail of the sections of legislation which specifically refers to water; and
- (b) it classifies the extracts so that the information required can be found by looking under the appropriate heading without the reader needing to sift through the Contents of Legislation section.

In Section II, a further analysis is given of the parts of the legislation which may be of particular interest to lawyers, but which do not refer exclusively to water. This part of the analysis has been kept separate from the more ecologically biased headings.

Part Five - Bibliography complements the previous four parts by giving a list of publications which give some discussion or evaluation of the laws in force in Ghana. Each entry gives details of the author, the name of the publication, the publisher or journal and the date of publication. These publications fall easily into four sections:

- (a) General Information - Annual Reports
Geography and Ecology
Volta River Project
Law of Ghana
- (b) Water Law in Ghana (abstracts also included)
- (c) Water Law in Africa (this section will be included in all the African volumes)
- (d) Water Law in the Commonwealth (this section will be common to all volumes in the series)

Part Six - Subject Index will be of particular value to ecologists and environmentalists. It cuts across the entire volume, picking out key words and compiling these alphabetically.

NOTE ON PRESENTATION

There are almost inevitably repetitions in the presentation of the materials included in this Volume. This repetition is most apparent in Part Four; this repetition can be found even within those sections which are related to the same concept (e.g. alteration of water courses would not be complete without some reference to the Volta River Development Project, while damming of the Volta River is central to the Volta River Project). Similarly, as far as legal machinery is concerned, regulation-making power may be significantly controlled by a statement within the principal act as to the maximum penalties which may be imposed by regulations, so that it becomes necessary to refer to penalties in the context of regulation-making power as well as under the section related to penalties.

Wherever possible these overlaps have been dealt with by cross-referencing within Part Four. The decision has been made to record all water related legislative provisions under the problem-related headings within this Part, and to re-present such of this material as is relevant, under the headings which are concerned with legal machinery. However the headings on legal machinery, unlike the problem-related sections, will be annotated and selective in content: within these sections certain statutory provisions will be re-presented verbatim as examples of legislative technique, and the reader's attention will be drawn to similar examples which may be found set out in full under the problems to which they relate.

It should be noted that no attempt has been made to evaluate the effectiveness of the legislation in attempting to resolve the problems at which it is directed: such an attempt would be quite beyond the objectives of the project.