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J. D. Ogundere

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THE DEVELOPMENT OF INTERNATIONAL ENVIRONMENTAL LAW AND POLICY IN AFRICA†

J. D. OGUNDERE††

The beginnings of international environmental law and policy in Africa can be traced to the General Act of the Conference of Berlin,¹ signed on February 26, 1885, and ratified by most signatories on April 19, 1886, at which thirteen European states, and the United States of America were represented. The aims and purposes of the Conference were set down in the preamble:

[W] ishing, in a spirit of good and mutual accord, to regulate the conditions most favourable to the development of trade and civilization in certain regions of Africa, and to assure to all nations the advantages of free navigation on the two chief rivers of Africa flowing into the Atlantic Ocean; being desirous, on the other hand, to obviate the misunderstanding and disputes which might in future arise from new acts of occupation ("prises de possession") on the coast of Africa; and concerned, at the same time, as to the means of furthering the moral and material well-being of the native populations....

The declaration of purpose in the last clause which is the most significant for this article was solidified into an international obligation in Article VI of the General Act which, *inter alia*, provides as follows:

> Preservation and Improvement of Native Tribes; Slavery, and the Slave Trade

All the Powers exercising sovereign rights or influence in the aforesaid territories bind themselves to watch over the preservation of the native tribes, and to care for the improvement of the conditions of their moral and material well-being, and to help in suppressing slavery, and especially the slave trade.

> Religious and other Institutions Civilization of Natives

1. Sir E. Hertslet, The Map of Africa by Treaty 468-87 (3d ed. 1967).

[†]The author is indebted to Dr. T. O. Elias, the Attorney-General and Commissioner for Justice of the Federal Republic of Nigeria, and Dean of the Law Faculty of Lagos University for his helpful criticism of the manuscript.

^{††}LL.B. (Lond); B.L. (Lincoln's Inn) 1957; LL.B. (Hons)(Cantab) 1961; Deputy Solicitor-General of the Federal Republic of Nigeria; Member of the International Council of Environmental Law; Council Member of UNIDROIT; Representative of Nigeria on UNCITRAL; Representative of Nigeria in the Sixth Committee of the U.N., 1966-1969; Deputy Leader of the Nigerian Delegation to the U.N. Conference on the Law of Treaties, Vienna 1968-1969; Member, Nigerian Institute of International Affairs; Life Member and Current Treasurer of the Nigerian Society of International Law.

They shall, without distinction of creed or nation, protect and favour all religions, scientific, or charitable institutions, and undertakings created and organized for the above ends, or which aim at instructing the natives and bringing home to them the blessings of civilization.

Thus the moral and material well-being of Africans, which would seem to embrace their integration with the totality of their environment, and which were to be promoted by scientific institutions with the aim of bringing home to them the blessings of civilization, constitute the nucleus of international environmental law and policy in Africa.

The happy integration of man with and the maintenance of the ecological balance between man and his environment motivated the Conference² held in London in 1933 on the African Environment which culminated in the Conclusion of the 1933 London Convention Relative to the Preservation of Fauna and Flora in their Natural State.³ The philosophy behind this Convention, which was the first fundamental Treaty⁴ on which the protection of nature in African environment is based under international law, was the preservation of fauna and flora in Africa against the excesses of European hunters and farmers who had introduced the use of firearms and ploughs, particularly into the savannah areas of East and Central Africa.

The aims and purposes of the 1933 London Convention were to promote by international action, the establishment of Nature Reserves and National Parks⁵ in the territories of the Contracting Governments where strict measures would be taken to control all white or native settlements in national parks with a view to ensuring that as little disturbance as possible is occasioned to the natural fauna and flora; and to establish round the borders of natural parks and strict nature reserves intermediate zones within which the hunting, killing and capturing of animals may take place under the control of the authorities of the park or reserve.⁶ The Contracting Governments were under an obligation to notify the Government of the United Kingdom of legislative and administrative measures taken by each Contracting Government to implement the provisions of the

6. Id. at art. 4.

^{2.} Proceedings of the Third Int'l Conference for the Protection of the Fauna and Flora in Africa, Oct. 26-31, 1953 (Bukavu, Belgian Congo, CCTA Pub. (hereinafter cited as Third Int'l Conference).

^{3.} An Annex to the Recommendations and Resolutions of the London Convention 1933, id. at 161-85.

^{4.} The nine signatory governments were: The Union of South Africa, Belgium, The United Kingdom of Great Britain and Northern Ireland, Egypt, Spain, France, Italy, Portugal and Anglo-Egyptian Sudan.

^{5.} London Convention, arts. 3 and 6 (1933).

Convention. The Government of the United Kingdom had the duty to circulate the information received to other Contracting Governments.⁷

Under the Convention, the Contracting Governments also agreed to set aside game reserves in which the hunting, killing or capturing of any part of the natural fauna (exclusive of fish) shall be prohibited save by permission given for scientific or administrative purposes. The natural flora in such reserves were also protected and in addition forest reserves were to be created where the best indigenous forest species were to be preserved.⁸

The Convention also regulated the traffic in trophies,⁹ prohibited certain hunting methods,¹⁰ and approved the protection to be granted to some threatened species which were listed under class A and class B in the Annex¹¹ to the official document. In the Protocol¹² to the Convention, it was agreed that meetings were to take place periodically to facilitate co-operation for the purpose of preventing extinction of natural fauna and flora and to examine the workings of the Convention with a view to making improvements thereon. The first meeting held to review the workings of the Convention in 1938 in which Contracting Governments reported on measures they had taken in their respective territories in the implementation of the Convention.

In 1949, the Second International Conference^{1 3} for the protection of nature was held at Lake Success under the joint sponsorship of UNESCO and the International Union for Conservation of Nature and Natural Resources (IUCN). That Conference passed a resolution stressing the need to hold a further meeting of the signatories of the London Convention. The Commission for Technical Co-operation in Africa South of the Sahara (CCTA) in collaboration with the government of Belgium and with support from UNESCO adopted the suggestion to call a further meeting as resolved at Lake Success in 1949, and called the Third International Conference for the Protection of Fauna and Flora in Africa which was held in Bukavu, Belgium Congo in 1953.¹⁴ Although various amendments were proposed to the 1937 London Convention, these were not incorporated into the Con-

^{7.} Id. at arts. 5 and 12.

^{8.} Id. at art. 7.

^{9.} Id. at art. 9.

^{10.} Id. at art. 10.

^{11.} Third Int'l Conference, supra note 2, at 185-93.

^{12.} Id. at 194-95.

^{13.} The Foreword of Jean-Paul Harnoy, Rapporteur General of the Conference. Id. at 7-13.

^{14.} See the various recommendations and Resolutions of the Conference. Id.

vention.¹⁵ However, several countries incorporated the proposals into their legislation just as they enacted legislation for implementation of the 1933 London Convention. In this period, the environmental question was the preservation of African fauna and flora, and greater emphasis was placed on the fauna.

The Charter of the United Nations signed at San Francisco on June 26, 1945, and which entered into force on October 24, 1945, has positive effects on the development of international environmental law and policy in Africa. The fourth and eighth preambular paragraphs to the Charter state:

We the peoples of the United Nations determined to promote social progress and better standards of life in larger freedom; . . .

And To These Ends

to employ International machinery for the promotion of the economic and social advancement of all peoples.

The declaration of intention of the Organization contained in those preambular clauses with regard to the promotion of the economic and social advancement of all peoples is reinforced by Article 55 of the Charter which enjoins the Organization, *inter alia*, to promote:

- (a) higher standards of living, full employment and conditions of economic and social progress and development;
- (b) solutions of international economic, social, health and related problems; and international cultural and educational cooperation...

There is no denying the fact that the obligations assumed by members of the United Nations in Article 55 constitute an inspiration to specialized agencies of the United Nations, in particular the United Nations Educational Scientific and Cultural Organization (UNESCO), in helping to promote the development of environmental policy in the world in general and in Africa in particular as we shall see later.

The decade commencing in 1960 witnessed the emancipation of several African states from colonialism, the high water-mark of which was the creation of the Organization of African Unity (OAU) in 1963. One should also mention that the period 1960-69 was declared the "Development Decade" by the General Assembly of the United Nations.¹⁶ The Charter¹⁷ of the OAU gave added impetus to the

17. Nigeria's Treaties in Force for the period 1st October, 1960 to 20th June, 1968 (Federal Ministry of Information Printing Division, Lagos, 1969) (hereinafter cited as

^{15.} W. Burhenne, The African Convention for the Conservation of Nature and Natural Resources, II Ecological Conservation J. 105 (Jan. 1970); Kai-Curry Lindahl, The New African Convention, 2 J. Fauna Preservation Soc'y (ORYX) 116 (Sep. 1969).

^{16.} G. A. Res. 1710 (XVI) (Dec. 19, 1961).

concerted efforts of the newly emancipated states of Africa in the development of their environment. Under Article 2(1)(b) of the Charter, one of the purposes of the Organization was to coordinate and intensify the cooperation and efforts of African states towards the achievement of a better life for the peoples of Africa; and under Article 2(2), the member states were under an obligation to coordinate and harmonize their general policies especially in the fields of economic cooperation including transport and communication, health, sanitation and nutritional cooperation and scientific and technical cooperation.

Pursuant to Article Twenty of the Charter, the Summit Conference¹⁸ of Independent African States meeting in Addis Ababa, Ethiopia, from May 22-25, 1963, adopted the International Agreement establishing the Commission for Technical Co-operation in Africa South of the Sahara (CCTA) signed in London on January 18, 1954.¹⁹ The CCTA was later merged with the Scientific Technical and Research Commission (STRC) of the OAU. Under Article VI(2) of the Agreement, the power and functions of the Commission, *inter alia*, are:

- (a) to concern itself with all matters affecting technical co-operation between the member governments and their territories within the territorial scope of the Commission;
- (b) to recommend to member Goverments measures for achieving such co-operation.

At the first session of the STRC in Algiers in February 1964, the Commission adopted its Rules of Procedure.²⁰ Rule 3 provides that within the framework of the Charter of the OAU, the Commission should promote and organize inter-African co-operation among member states in scientific, technical and research matters in accordance with the directives of the Assembly and the Council of Ministers; and that the Commission should encourage collaboration with other international organizations active in the field of science and research.

The newly independent African states were also brought into closer contact with international organizations which have shown serious concern in the past with the African environment, par-

20. Rules of Procedure of the Scientific, Technical and Research Commission of the OAU STR/2/Rev 1, (Scientific, Technical and Research Comm'n, First Sess., Algiers, Feb. 1964).

Nigeria's Treaties in Force). See also T. Elias, The Charter of the OAU, 59 A.J.I.L. 243 (1965).

^{18.} The Organization of African Unity, Basic Documents and Resolutions, Published by the Provisional Secretariat of the Organization of African Unity 23 (1963).

^{19.} Int'l Agreement for the Establishment of the Comm. for Technical Cooperation in Africa South of the Sahara 2-13 (CCTA Pub. 61, Jan. 18, 1954).

ticularly the International Union for the Conservation of Nature and Natural Resources (IUCN), the Food and Agricultural Organization of the United Nations (FAO), the International Council for Bird Preservation (ICBP), the International Council of Environmental Law (ICEL) and UNESCO.

As the decade advanced, African states, slowly at first and later increasingly, felt the need for the coordination of their activities in the conservation and management of their natural resources including the maintenance of the ecological balance of their environment. This was reflected, as we shall show later, in the creation of specialized inter-state organizations and commissions.

In 1960, the African Forestry Commission of the FAO created an ad hoc Working Party on Wildlife Management, charged with drafting an African convention for the conservation, control and exploitation of the wild fauna. During the first four years of the Working Party's life, it was not convened.²¹ In September, 1961, a symposium was organized by the CCTA and IUCN under the auspices of the FAO and UNESCO in Arusha, Tanganyika on the Conservation of Nature and Natural Resources in Modern African States.²² The plan for the Arusha Symposium was conceived by the IUCN at its General Assembly and technical meetings held in June, 1960 at Warsaw and Cracow in Poland. The IUCN then appreciated that the accelerated rate of destruction of wild fauna, flora and habitat in Africa, without adequate regard to its value as a continuing economic and cultural resource, constituted the most urgent ecological problem of the day in Africa.²³ The Arusha Conference made recommendations relating, inter alia, to the subject of international aid for education and training in conservation of water, soils, vegetation and wild life; land use policies which should aim at avoiding the intensive occupation of land unsuited for such use in the long term; and to the need for greater attention to the economics of resource development programs.²⁴

In February 1963, at the joint session of the CCTA and the Scientific Council of Africa (CSA) held in Dar-es-Salaam, an African Charter for the Protection and Conservation of Nature²⁵ was adopted. In Article 1, nature in Africa is recognized as a sacred trust for the benefit of posterity. Article 2 recognizes that nature's mani-

^{21.} Lindahl, supra note 15, at 117.

^{22.} Report of a Symposium on Conservation of Nature and Natural Resources in Modern African States, organized by CCTA and IUCN under the auspices of FAO and UNESCO at Arusha, Tanganyika, Sep. 1961 (IUCN Pub. New Series No. 1, 1963).

^{23.} Id. at 9.

^{24.} Id. at 15, 69-72.

^{25.} African Charter for the Protection and Conservation of Nature, CCTA 18th Sess., Feb. 4-9, 1963, Dar-es-Salaam (CCTA-CSA Pub.).

fold riches-economic, scientific, cultural and aesthetic-are an irreplaceable capital which must be administered wisely and carefully by rational exploitation based on specific and well-proved scientific rules. In Article 4, African states are urged to relate the utilization and exploitation of water, soils, animals or plants to the rate of renewal or maintenance of the reserve in question. In Article 5, African states are advised that, while considering major projects like a hydro-electric scheme, they should make use of specialists including biologists so that the probable effect on natural conditions may be accurately assessed. Article 8 urges states to entrust the conservation of nature and natural resources in their domain to a specialized organization. Here again, the 1963 African Charter embraces the totality of the human environment.

In September 1963, at Nairobi, the IUCN held its 9th Technical Meeting in conjunction with its 8th General Assembly. The theme of that meeting was The Ecology of Man in the Tropical Environment.²⁶ That theme was inspired by an increasing realization that rational land-use programs either for an area, a nation or a region should be based on adequate scientific studies if a new balance were to be maintained between man and his ecological environment with a view to achieving a higher level of productivity and economic wellbeing.

Learned papers which were contributed by scientists and administrators, including Africans, were divided into four parts. Part One dealt with "Pre-industrial Man in the Tropical Environment," that is, man as a hunter of food, gatherer of fruits, fisherman, pastoralist and cultivator. Part Two covered "Ecosystems and Biological Productivity," that is, the total complex of living things along with the physical conditions of soil, climate, and physiography that occur in a given situation, particularly the ecosystem of forests, savannah, desert, mountain, water areas and wetlands. The primary question for each ecosystem was its potentiality to support over a period of time plants, animals and man who are adapted to it. Part Three was devoted to "The Impact of Man on the Tropical Environment," particularly the effect of the introduction of non-indigenous plants and animals, shifting cultivation, fire, grazing and water control. Part Four dealt with "Ecological Research and Development" and covered the ways and means of evaluating environments and of providing an ecological basis for living with them; it also dealt with case studies of development programs.²⁷

Another important development in environmental policy in Africa 26. The Ecology of Man in the Tropical Environment, Ninth Technical Meeting, Nairobi, Sep. 1963 (IUCN Pub. New Series No. 4, 1964).

27. Id. at 19-22.

occurred under the recommendations of the International Conference on the Organization of Research and Training in Africa in Relation to the Study, Conservation, and Utilization of Natural Resources²⁸ which was held in Lagos, Nigeria, from July 28 to August 6, 1964, under the aegis of UNESCO in association with the United Nations Economic Commission for Africa, and in consultation with other specialized agencies of the United Nations. Twenty-seven independent African states attended the Conference and several international organizations including the specialized agencies sent representatives and observers to the conference. Three commissions were set up to study the organization of research, scientific and technical personnel, finances and research economics. The Conference considered the following agenda items and made recommendations thereon: National Scientific Policies With Regard to Research on Natural Resources: Preparation and Implementation of Policies of Research on Natural Resources: Scientific and Technical Personnel; Finances and Research Economics; and International Cooperation in Research on Natural Resources.

With regard to National Scientific Policies concerning research into Natural Resources,²⁹ the Conference appreciated that a scientific study of natural resources and their potentiality is essential for the economic and social development of African countries. In this regard the Conference reviewed the report and recommendations of the United Nations Conference on the Application of Science and Technology for the Benefit of Less Developed Areas, held at Geneva in February 1963. That Conference recognized that the process of development depended on the mobilization of a nation's entire resources and by the application of principles and coordination of scientific activities in the natural sciences, in technology and in social and human sciences.

In its concluding resolutions, the Conference proclaimed, *inter alia*, its conviction that the extension of scientific and technological research on natural resources, constitutes a factor essential to such development. The Conference recommended,³⁰ *inter alia*, that the governments should devote continued and very large-scale efforts to the promotion of scientific and technological research; that campaigns should be systematically organized in each country with a view to drawing the attention of the population to the essential role

^{28.} Final Report of the Lagos Conference on the Organization of Research and Training in Africa in Relation to the Study, Conservation and Utilization of Natural Resources, July 28 to Aug. 16, 1964 (UNESCO/ECA Pub.).

^{29.} Id. at 13-25.

^{30.} Id. at 24-25.

which science and technology can play in solving the social and economic problems which hinder the development efforts of African countries. It also recommended that the plans for the wise exploitation and utilization of natural resources, renewable resources in particular, should not use up more than the capital which they can produce.

The Conference also considered preparation and implementation of policies of research on natural resources.³¹ It recommended,³² inter alia, that national research organizations be set up to coordinate the elaboration and implementation of programs of research on natural resources and that effective links be instituted between social organizations and planning commissions; and that a scientific and technical committee on natural resources in Africa be set up to carry out the task listed for action at a continental level. The Conference also recommended that the attention of African states should be drawn to the resolution on the conservation of natural resources, fauna and flora, in the developing countries, adopted by the UNESCO General Conference at its 12th Session in December 1962. "The African Charter" adopted by certain African countries in 1962, the resolution of the General Assembly of the IUCN adopted in Nairobi in 1963; that the 1933 Convention on the flora and fauna of Africa be revised in order to bring it up to date and to extend the scope of its application; and that the OAU should entrust the preparatory work to the IUCN assisted by UNESCO and FAO.

On the item Scientific and Technical Personnel,^{3 3} the Conference recommended a list of categories and numbers of personnel needed. It also recommended co-operation between existing universities and research institutes of Africa and that African nationals trained abroad should be given incentives to return home.

The Conference made two important recommendations on Finance and Research Economics:³⁴ that a national scientific research council be set up in each country and that a research budget be established for that body.

A number of useful recommendations on the subject International Cooperation in Research on Natural Resources³⁵ were made including the one that UNESCO as well as other international organizations should give technical and other support to the projects of the Scientific Commission of the OAU; that a network of national

- 34. Id. at 55-58.
- 35. Id. at 62-64.

^{31.} Id. at 26-40.

^{32.} Id. at 38-40.

^{33.} Id. at 48-50.

and international scientific institutions of the highest possible standard in training and researching in natural resources in Africa should be established or developed; and that UNESCO, ECA and other U.N. agencies and organizations, other inter-governmental and non-governmental bodies, and member states of UNESCO outside Africa should continue and expand their collaboration with the African countries in scientific research and training.

In 1965, in response to the recommendations of the 1964 Lagos Conference, the OAU requested the IUCN to prepare a draft of a revised 1933 London Convention on the flora and fauna of Africa which would cover the entire field of renewable natural resources and which would deal, not only with the protection of such resources, but also emphasize their conservation and sound management.³⁶ The ad hoc sub-committee of IUCN composed of experts and administrators from African states and including observers from FAO, UNESCO, and ECA met in Morges in December 1965 and examined the IUCN draft proposal which was later forwarded to the OAU by the President of the IUCN in December 1966. In September 1967, the Assembly of Heads of State and Government of the OAU, after a preliminary discussion, referred the draft and the comments of member states to a committee of five states who were requested to finalize the draft. In the meantime, in February 1966, the FAO distributed the draft of African Convention of Conservation and Management of Wildlife and Its Habitat to member governments and organizations. In February 1967, the FAO Working Party held the Second Session³⁷ in Fort Lamy in Chad to finalize its draft convention. Twenty-eight African countries and representatives of the United Nations including UNESCO and IUCN were present. In September 1967, the OAU heads of state and governments at its Kinshasa meeting unanimously resolved that only one general convention was required on the conservation, preservation and exploitation of nature and of natural resources in Africa, and appointed a committee consisting of Ethiopia, Chad, Liberia, Uganda and Tanzania to look into it. Early in 1968, representatives of the FAO. UNESCO and IUCN met in Rome to consolidate the two draft conventions; the consolidated draft convention was submitted to the committee of five which met in Addis Ababa in February 1968, which draft was finally approved at the OAU Summit meeting in Algiers in September 1968. The new Convention entitled "The African Convention for the Conservation of Nature and Natural Re-

^{36.} Burhenne, supra note 15, at 105.

^{37.} Lindahl, supra note 15, at 118.

sources" was signed by 38 African heads of state and governments and came into effect in July 1969.

The preamble to the Convention³⁸ emphasized that soil, water, flora and fauna resources constitute a capital of vital importance to mankind; that utilization of these natural resources must aim at satisfying the needs of man according to the carrying capacity of the environment; and expressed the desire of African states to undertake individual and joint action for the conservation, utilization and development of these assets by establishing and maintaining their rational utilization for the present and future welfare of mankind. Article Two stated the fundamental principle of the Convention: contracting states should undertake to adopt the measures necessary to ensure conservation, utilization and development of soil, water. flora and fauna resources, in accordance with scientific principles and with due regard to the best interest of the people. Article Four deals with the conservation of soil within the framework of land-use plans based on scientific investigations. Article Five deals with conservation, utilization and development of underground and surface water with special regard, *inter alia*, to the prevention and control of water pollution. Article Six deals with the protection of flora and its best utilization and development. Article Seven sets out the obligation of contracting states on the conservation, wise use and development of fauna resources and their environment, within the framework of land-use planning and of economic and social development. Article Eight deals with protected species of flora and fauna. Article Nine regulates traffic in specimen and trophies. Article Ten deals with conservation areas for the protection of ecosystems and conservation of all species listed in the annex to the convention. Article Eleven deals with reconciliation of customary rights with the provision of the convention. Article Twelve obligated contracting states to encourage and promote research in conservation, utilization and management of natural resources. Article Thirteen concerns conservation education. Under Article Fourteen, contracting states are under an obligation to ensure that conservation and management of natural resources are treated as an integral part of national and regional development plans.

Environmental policy is distinguishable from natural resources policy, although there is a close affinity and significant substantive overlap between the two.³⁹ International environmental policies can

^{38.} Burhenne, supra note 15, at 106-114.

^{39.} Lynton K. Caldwell and Irving K. Fox, Research on Policy and Administration in Environmental Quality Programs 15-50 (Indiana Univ. Institute of Pub. Ad., Mar. 30, 1967).

be said to be public policies which influence the way the physical and non-physical environment is used and which are co-ordinated or integrated on the international level. It includes the rational planning and use of air, water, land, fauna and flora, with a view to achieving an equilibrium of beneficial and adverse consequences. Natural resources policy, on the other hand, consists of ways and means of exploiting the natural resources of any given state with a view to deriving optimum benefits to the members of the community concerned.

African states, in the last decade, have tended to put environmental policy and natural resources policy in the same category in order to develop them in international agreements. Examples can be found in the International Agreements on the Niger and the Senegal Rivers and on Lake Chad. Article Two of the Agreement Concerning the River Niger Commission and the Navigation and Transport of the River Niger, Niamey, November 1964,⁴⁰ which states the functions of the Commission provides, inter alia, that the Commission shall collect, evaluate and disseminate basic data on the whole of the basin, examine the projects prepared by the riparian states and recommend to the governments of the riparian states plans for common studies and works for the judicious utilization and development of the resources of the basin. Under Article Twelve, the contracting states undertake to abstain from carrying out, on the portion of the river, its tributaries and sub-tributaries subject to their jurisdiction, any works likely to *pollute* the waters, or any modification likely to affect the biological characteristics of its fauna and flora, without adequate notice to, and prior consultation with, the Commission.

In the Convention and Statute Relating to the Development of the Chad Basin, Fort Lamy, May 22, 1964,⁴¹ a preambular paragraph recognized the need to formulate principles for the utilization of the resources of the Chad Basin for economic purposes including the harnessing of the water. In Article Five of the statute, the member states agreed to consult with the Commission before adopting any measure likely to have an appreciable effect either on the extent of the loss of water or on the nature of the yearly hydrogramme and limnigramme and certain other features of the basin, the conditions subject to which other riparian states may utilize the water in the basin, the sanitary conditions of the water or the biological characteristics of its fauna and flora. There is also an agreement under

^{40.} Nigeria's Treaties in Force, supra note 17, at 212-16. See also T. Elias, Berlin Treaty and River Niger Commission, 57 A.J.I.L. 873 (1963).

^{41.} Nigeria's Treaties in Force, supra note 17, at 212-24. See also I. Agoro, The Establishment of The Chad Basin Comm'n, Int'l & Comp. L. Q. 642 (Apr. 1966).

negotiation on water utilization and conservation including pollution control in the Lake Chad Basin by the riparians: Cameroon, Chad, Nigeria and Niger.

The same mixture of environmental and natural resources policies also can be found in the Convention Concerning the Statute of the Senegal River, 1964.⁴² Article Three provides that the contracting states⁴³ shall consult each other on any proposed works likely to modify appreciably certain characteristics of the river regime, including navigation, or its agricultural and industrial exploitation, the sanitary conditions of its water, and biological characteristics of its fauna and flora. In Article Four, the contracting states are obliged to ensure conservation of the water resources of the basin, maintain their natural flow and quality, and prevent their misuse, waste or pollution.

Other international agreements on environmental policy include the Convention on the African Migratory Locust, May 25, 1962.44 The sole aim of the Convention is to take surveillance and preventive control of the African migratory locusts which in the past have devastated hundreds of square miles of both cultivated vegetation and of natural growth. There is also the Phytosanitary Convention for Africa South of the Sahara completed in London, April 29, 1954,⁴⁵ as amended by protocol at London on October 11, 1961, and substantially re-enacted by the OAU as the Phytosanitary Convention for Africa, 1967. The aim of the Convention is to prevent any new disastrous introduction of plant diseases and pests into Africa on the scale of the potato and vine diseases which ravaged Europe during the first part of the 20th century. One should also mention the Organization Communne de Lutte Anticridienne et de Lutte Antiquiaire (OCLALAV) or Convention for the Joint Organization for Locust and Bird Pest Control held at Fort Lamy May 29, 1965. The purpose of the Convention is to organize a joint eradication of locust and quella birds which do extensive damage to food crops across the savannahs and semi-desert of West Africa.

Population control as an environmental problem has not attracted concerted international action by African states. Africa embraces approximately a quarter of the land surface of the globe. In 1960, it had 9.1 per cent of the world's total population, 5 per cent of the

^{42.} Convention Concerning the Statute of the Senegal River, 19 Revue Juridique et Politique 302 (1965).

^{43.} Contracting states are Senegal, Mauritania, Mali and Guinea.

^{44.} Nigeria's Treaties in Force, supra note 17, at 200-208.

^{45.} A memorandum for Phytosanitary Procedure in Africa 173-84 (CCTA Pub. 8). See also U.K. Treaty Series No. 16 (1954) cmd 9077 and OAU CM/Res. 119 (IX) Sep. 13, 1967.

world's urban population and 11.2 per cent of the world's rural population.⁴⁶ It had 273 million out of 2,991 million of the world's population.⁴⁷ Thus Africa is the least urbanized of the major continents of the world. But its urban population growth rate is among the highest in the world.⁴⁸

Also in Africa, there is a tendency towards concentration of the urban population in the large cities. Arising from this galloping urbanization are the dangers of air and water pollution as a result of industrialization, the increasing use or misuse of fertilizers and pesticides, and oil contamination of the rivers and seas. So far, there is no international convention among African states on the problems of urbanization or over-population. Africa's lukewarm attitude to overpopulation is understandable as generally speaking over-population is a relative term. A country which is unable to produce sufficient food on its own territory to feed its people is said to be over-populated; the type of farming is therefore important.

On this basis, Britain, which produces only fifty-five per cent of the food it consumes, is over-populated. In tropical Africa, an acre of land can produce the limited food needs of the average African. But the type of farming is generally "shifting cultivation"; six acres are required for the rotational cultivation of one acre to allow five years fallow. On this basis many African states may be said to be overpopulated.⁴⁹ On the other hand, when mechanized farming becomes the predominant type of farming in Africa and better use is made of fertilizers, seemingly over-populated countries may gradually become under-populated.

Also most African states are not yet fully concerned with environmental pollution problems because their infant manufacturing industries are still few, and heavy rainfall in many countries dilutes and carries away liquid industrial waste, while ample sunshine dry them up quickly. This is in marked contrast to the tremendous public and government concern with problems of environmental pollution in highly developed industrialized countries.⁵⁰

^{46.} U.N. Growth of the World's Urban and Rural Population, 1920-2000, Sales No. E.69. XIII3, ST/SOA/Ser. A/44 at 13 (1969).

^{47.} Id. at 12.

^{48.} UN/ECA Size and Growth of Urban Population in Africa, Sixth Conference of African Statisticians, E/CN.14/CAS.6/3. (Addis Ababa, 1968).

^{49.} D. Stamp, Land for Tomorrow, Our Developing World 105-125 (1969).

^{50.} E. Bryan, Water Supply and Pollution Control Aspects of Urbanisation, 30 Law & Contemp. Prob. 176-92 (1965); R. Ayres and A. Kneese, Production Consumption, and Externalities, Am. Econ. Rev. 282-89 (1969); International Aspect of the 1971 Environmental Program, H.R. Doc. No. 92-46, 92d Cong., 1st Sess. 253-56 (1971).

The African Regional Seminar on Human Environment⁵ ¹ held under the aegis of the Economic Commission for Africa in Addis Ababa, August 23-28, 1971, is a step in the right direction. It afforded African experts in the several disciplines connected with environmental problems to exchange ideas and views in preparation of the U.N. Conference on the Human Environment,⁵ ² scheduled to take place in Stockholm in 1972. The seminar also made a number of recommendations.

In discussing the Founex Report,^{5 3} the seminar shared the view that the major environmental problems of developing countries arose, firstly, out of lack of development and, secondly, out of the process of the development itself, through mis-management of natural resources. It also recognized that environmental policies needed to become one of the dimensions of development policies and should be integrated with the latter as part of a more unified approach to development.^{5 4} The point was also made that lending and financing agencies should revise the guidelines of project appraisal taking into account environmental considerations.^{5 5}

On the topic of human settlements, the seminar recommended the development of regional co-operation in such matters as environmental health, sanitation, health education, training and exchange of experiences in the management of the environment.⁵ ⁶

In discussing the conservation of natural resources, the Conferences made an important recommendation regarding the establishment of Institutes of Environmental Study,⁵⁷ and on "Development and Industrialization," the seminar recommended that governments should adopt an inter-disciplinary approach in the planning of new industries or the expansion of the existing ones, having due regard to environmental considerations.⁵⁸

On manpower and the environment, the seminar recommended a reformation of the curriculum in order to emphasize environmental education at all levels, and that environmental conservation and improvement should be the basic philosophy of public environmental education.⁵⁹ In relation to industrial development, it recommended

52. U.N. Res. 2398 (XIII) (Dec. 3, 1968).

- 57. Id. at para. 50.
- 58. *Id.* at para. 51. 59. *Id.* at para. 53.
- 59. *Iu.* at para. 55.

^{51.} Rep. of the All-Africa Seminar on the Human Environment, U.N. Doc.E/CN:14/53 (Aug. 23-28, 1971).

^{53.} Rep. of the All-Africa Seminar, supra note 51, at para. 23.

^{54.} Id. at para. 29.

^{55.} Id. at para. 32.

^{56.} Id. at para. 40.

that an inter-regional research institution be set up to study the effects of pollutive industries in the African region.⁶⁰

In conclusion, Africa has taken rapid strides in the last decade to develop, on the international level, solutions to certain environmental problems, mainly relating to fauna, flora and water resources. In the next decade, Africa should concentrate on the problems of over-population, urbanization and pollution.