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PROGRESS ACHIEVED BY THE NON-SELF-GOVERNING TERRITORIES
IN PURSUANCE OF CHAPTER XI OF THE CHARTER

FISHERIES IN THE NON-SELF-GOVERNING TERRITORIES

Report prepared by the Food and Agricultural Organization
of the United Nations

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NOTE: The following symbols are used:

Three dots (...)	data not available
Dash (-)	magnitude nil or negligible
Slash 1948/1949	crop or financial year
Hyphen 1948-1949	annual average

INTRODUCTION

1. This study covers in principle all Territories which were non-self-governing at the end of 1950. It is based primarily on information transmitted by the Administering Members to the United Nations under Article 73 e of the Charter. Other sources used include the Special Study on Economic Conditions and Development in Non-Self-Governing Territories, 1952,^{1/} and the Special Study on Economic Conditions in Non-Self-Governing Territories, 1955.^{2/} Additional printed sources are referred to in the text.
2. Section 2 furnishes the latest available data on fish production and trade in the Territories covered. For many Territories, no other statistical information is available. However, even the data on production and trade, in many instances, represent little more than rough estimates. No attempt has been made, therefore, to analyse quantitatively the changes which have taken place in the fishery industries during the period under review. In a later section (Section III, paragraphs 40-88), however, examples of progress made in individual Territories as a result of government assistance are cited.
3. Sections II and III are concerned with government activity in fisheries - in the fields of research and development, respectively - during the period 1947-1956.

I. PRODUCTION AND TRADE

4. In Papua, Netherlands New Guinea, and the Territories under New Zealand administration, fishing is mainly on a subsistence level. The only fishery activity of noticeable commercial significance is the diving for pearl shells, the exportation of which is an important item in the trade of these islands. The export of fish products from these Territories, mostly originating from Netherlands New Guinea, is very small.
5. In the Belgian Congo, fish production in 1957, mainly from the rivers and lakes, amounted to 121,800 metric tons. The Territory imports a considerable amount of dried fish, most of it from neighbouring Uganda.

^{1/} United Nations, Sales No. 1952.VI.B.2.

^{2/} Ibid., Sales No. 1955.VI.B.1.

6. Estimates of fish production in the French Territories for the latest available years are given in the table below.

Table 1
French Territories: Landings of fish, crustaceans and molluscs^{3/}

Territory	Year	Thousand metric tons
French Equatorial Africa	1956	100.0
French Somaliland	1956	0.5
French West Africa	1957	72.0
Madagascar) Comoro Archipelago)	1953	2.6
New Hebrides (under Anglo-French condominium)	...	...
Total		175.1

7. French Equatorial Africa is a net importer of fishery products (in 1957, for instance, exports totalled 1,015 tons and imports 8,181 tons), whereas French West Africa is a net exporter (in 1956, exports totalled 10,013 tons and imports 2,548 tons).

8. The production of fish in the United Kingdom Territories is in the order of 250,000 metric tons a year, of which about 60 per cent is produced in four Territories, viz., Uganda, Hong Kong, Nigeria and Aden Protectorate. This estimate, based on production officially reported, may, however, be far below actual production, since a great part of the production for subsistence has not been recorded. Detailed statistics of production for the United Kingdom Territories are given in the table below.

^{3/} FAO: Yearbook of Fishery Statistics (Vol. VII), p. A-4.

Table 2

United Kingdom Territories: Landings of fish, crustaceans and molluscs^{4/}

Territory	Year	Thousand metric tons
Aden (Colony and Protectorate)	1957	22.6
Bahama Islands	1957	1.5
Barbados	1957	4.1
Basutoland .....	...	...
Bechuanaland Protectorate .....	...	...
Bermuda	1957	0.7
British Guiana	1957	3.2
British Honduras	1953	0.5
Brunei	1957	1.0
Cyprus	1957	0.5
Dominica	1956	0.4
Falkland Islands and dependencies	1948	0.1
Federation of Malaya	1957	138.3
Fiji .....	...	...
Gambia (Colony and Protectorate)	1953	1.0
Gibraltar .....	...	...
Gilbert and Ellice Islands .....	...	...
Gold Coast	1957	20.0
Grenada	1956	0.5
Hong Kong	1955	45.9
Jamaica	1957	7.1
Kenya	1957	13.4
Leeward Islands	1953-1956	1.2
Mauritius and dependencies	1957	1.7
New Hebrides (under Anglo-French condominium) ....	...	...
Nigeria (Federation of)	1953	42.0
North Borneo	1948	5.9
Northern Rhodesia) Nyasaland Protectorate)	1956	9.7
Pitcairn Island .....	...	...
St. Helena and dependencies	1956	0.1
St. Lucia	1956	0.5
St. Vincent	1956	0.6
Sarawak	1957	0.1
Seychelles	1955	1.5
Sierra Leone (Colony and Protectorate)	1955	5.0
Singapore	1957	13.8
Solomon Islands .....	...	...
Swaziland .....	...	...
Trinidad and Tobago	1952	2.9
Uganda	1957	48.0
Zanzibar	1957	8.8
Total		402.6

^{4/} Ibid.

9. Only six of the United Kingdom Territories, i.e., Uganda, Nyasaland, Northern Rhodesia and the High Commission Territories of Basutoland, Swaziland and Bechuanaland, have no seaboard; of these, the first two have access to the Great Lakes and the third, to Lakes Bangweulu, Mweru and Tanganyika. Fishing frequently is on a subsistence level, with a small surplus available for local consumption. In some Territories, however, production surpluses are large enough to permit exports of fish, mainly in the dried or salt-dried state. Thus, for example, fish from the lakes of Uganda are sent to the Copperbelt of Northern Rhodesia and the Belgian Congo where they are used in the rations of the mine labour. In another part of the world, North Borneo exports to the Philippines and to Singapore for re-export to Indonesia. Singapore is the centre of an important entrepôt trade for salt-dried fish, for South-East Asia.
10. The principal export markets for fish from Hong Kong are South-East Asia, the United States and Canada. Fish from the southern Red Sea, Somaliland, the South Coast of Arabia and the Persian Gulf are traditionally sent to Aden for transshipment to East Africa and Ceylon. The greatest fish importers in the Territories under United Kingdom administration are those in the Caribbean and West Africa. The principal sources of imports for the former area are Canada and Iceland, and for the latter, Norway.
11. Alaska's fish production (175,000 tons in 1957) is mainly for consumption in the United States of America.
12. In American Samoa, fishing was, until 1954, conducted on a subsistence level only. In that year, a private concern began canning operations with the assistance of the Government. The following year the company reached full production with an output of approximately 6,000 metric tons of fish, valued at \$US4.5 million. Operations from Samoa were conducted by Japanese trawlers. Fishing in Guam is on a small scale, and catches which in 1955-1956 amounted to 200 metric tons remained below local demand. In the US Virgin Islands, fishing is insignificant. Hawaii produced in 1957 a total of 4,900 metric tons, which was 40 per cent below the average of the preceding four years. Puerto Rico production is comparatively small.

II. RESEARCH

13. Technical facilities specially intended for fishery research were very few in the Non-Self-Governing Territories at the end of the Second World War. Fishery research programmes during the period under review, therefore, have been largely concerned with the construction of research vessels, laboratories and other basic facilities for carrying out investigations and experiments. As a result, capital expenditures, covered mainly by the metropolitan Governments, have been high in relation to current expenditures. The territorial Governments have contributed primarily to current expenditures having obligated themselves, in many instances, to defray these costs in their entirety at some future date.

14. At the end of the period under review a considerable amount of biological and oceanographic fishery research was being carried out, much of it under long-term programmes. Exploratory fishing has been carried on at one time or another during the period in most of the Territories. Technological research, particularly in the form of experimental fishing to determine the catching capacity of different types of equipment has, in many instances, shown practical results and greatly influenced development activity. Research in the fields of fish processing and marketing is still in its infancy, though promising developments have recently taken place in some of the Territories.

United Kingdom Territories

15. From 1940 through 31 March 1957, approximately 1.75 million pounds sterling were allocated for fisheries research under the Colonial Development and Welfare Acts, the great bulk in the post-war period. The fisheries allocation represented about one tenth of the total expenditures for research.^{5/}

16. Scientific research has been organized, for the most part, on a regional basis, since Territories in the same region, e.g., in East or West Africa or in South-East Asia, tend to have similar problems.

17. During the period under review a series of regional fisheries research institutes came into being. The Territorial Governments, as a rule, contributed

^{5/} United Kingdom: Colonial Research 1956-1957, H.M.S.O., London, p.7.

to the financing of these institutes from their own funds. The institutes founded were the following:

18. The West African Fisheries Research Institute, established in 1948 in Sierra Leone. The Institute had at its disposal a 100 ft. research vessel equipped with a diesel motor, the "Cap St. Mary", and two smaller boats and carried out, among other projects, a series of exploratory trips from the coast of West Africa extending as much as 120 miles seawards, and a survey of hydrography, plankton, benthos, and fish stocks in the Sierra Leone estuary. The latter extended over several years and was one of the most complete scientific surveys ever made in a tropical estuary. The Institute went out of existence in 1957 when the Governments of Ghana and Nigeria found themselves unable to contribute further to its financial support.
19. The East African Inland Fisheries Research Organization at Jinja, Uganda, established in 1948 with the support of the Governments of Kenya, Tanganyika, and Uganda. The Organization, which has a modern laboratory, carries on basic research into the fish stocks and fertility and productivity conditions of the East African lakes. The East African Governments have made use of its research findings in laying down guidelines for the protection of fish stocks in Lake Victoria.
20. The East African Marine Fisheries Research Organization at Zanzibar, formed with the support of the Governments of Kenya, Tanganyika, and Zanzibar. The Organization, which has had a new laboratory since 1954, has been doing a considerable amount of exploratory fishing during the last six-year period and has succeeded in increasing the knowledge of the distribution and seasonal appearance of pelagic species in the waters off the East African coast.
21. The Northern Rhodesia-Nyasaland Joint Fisheries Research Organization, established in 1950 with headquarters in Samfya on Lake Bangweulu. The Organization completed a survey of Lake Nyasa in the period 1953 to 1955. More recently, a new Colonial Development and Welfare grant has enabled it to undertake a survey of Lake Bangweulu.
22. The Fisheries Research Unit of the University of Hong Kong. Fisheries research in Hong Kong, which dates back to the 1930's, was reorganized in 1951. In the latter year, the Unit was set up with a Colonial Development and Welfare

grant which covered capital requirements and maintenance costs of the Unit and its research vessel for the first five-year period of its existence (1951-1956). The Territorial Government also has contributed to the financing of the Unit through grants from its own budget. Since 1954, the Unit has carried on a continuous hydrographic survey of the sea around Hong Kong and its research vessel has been engaged in exploratory fishing on grounds as far distant as those adjacent to the island of Hainan.

23. A Regional Fisheries Research Station at Singapore, established in 1954. The Station went out of existence after only two years of operation when first the Government of the Federation of Malaya and subsequently the Government of Singapore decided to withdraw their support. The Station's research vessel, the Manihine, was transferred to the East African Marine Fisheries Research Organization at Zanzibar to replace the latter institute's own obsolete craft, the Research.

24. The Fish Culture Research Project, Malacca, Malaya. In the period under review work on the research station of the above name was initiated. Continued support to the project has been given by the United Kingdom under a Colonial Research and Development grant.

25. In addition to the surveys described above, a number of Colonial Development and Welfare research schemes in fisheries were carried on independently of the permanent institutes. These schemes, an example of which is the Mauritius-Seychelles fisheries survey of 1948-1949 undertaken to investigate the production potential of a chain of oceanic banks in the western Indian Ocean, had limited objectives and were of limited duration.

26. Fisheries research and survey work of limited scope are undertaken by local fishery officers or other staff employed by the individual Territories. In most of the Territories, thus, a certain amount of experimental fishing, for the purpose of determining the fishing capacity of certain craft and gear, as well as of exploratory fishing, to study the distribution of fish stocks and to locate new fishing grounds, has been carried out at one time or another since the war.

27. Experiments in fish culture have been made in a number of Territories in recent years and demonstration fish farms have been established in Kenya, Nigeria,

Northern Rhodesia, and Uganda. Among projects in the technological field have been the following: boat building (various territories), surf landing with powered craft (West Africa), net and gear preservation (British Guiana), control of pollution (Nigeria), fish curing (British Guiana, Hong Kong, Gold Coast, and Nigeria), quick freezing (Singapore), fish meal feed manufacture (British Somaliland, British Virgin Islands, Federation of Malaya, Leeward Islands, Nyasaland, and Uganda), manufacture of edible fish powder (Gold Coast), and fish canning (Gold Coast and Jamaica).

28. Surveys of wholesale or retail marketing of fish have been carried out in the Federation of Malaya and in Gambia.

Other Territories

29. Exploratory fishery surveys have been carried out by Papuan vessels since the war in Milne Bay, in the Gulf of Papua, and in the Coral Sea. In addition, experiments have been made with different types of gear and with different methods of preservation.

30. Recently, a fully equipped expedition was sent from Belgium to undertake a survey of oceanographic and fishery conditions in the seas adjacent to the very short seaboard of the Belgian Congo. Current plans are to establish a permanently staffed fishery station at Angro-angro near Matadi.

31. In 1946-1947 fish farming opportunities were evaluated by a special mission. Subsequently, an experimental station for fish farming was established at Kipopo near Elisabethville. This station has recently been taken over by the Institut National pour l'Etude Agronomique du Congo Belge (I.R.S.A.C.) which has another centre near its headquarters at Yaugambi where the problems of fish farming in the tropical forest belt are being investigated.^{6/}

32. The lake fisheries of the Belgian Congo, some of which are shared with Uganda and Tanganyika, have been investigated by a series of well staffed and equipped expeditions sent from the mother country. In addition, a permanent research institute which is under the I.R.S.A.C. and located at Uvira near the north end of Lake Tanganyika specializes in hydrobiology.

^{6/} E.B. Worthington: Science in the Development of Africa, p. 230.

33. Among the extensive facilities for marine fishery research in French West Africa are the marine station on the island of Gorée off Dakar which is part of the Institut Français d'Afrique Noire, the Centre d'Etude des Pêches at Conakry, the Centre d'Etude des Pêches at Abidjan, and the facilities maintained by the Section Technique des Pêches Maritimes at Dakar. The Institut Français d'Afrique Noire also operates a research centre on the Middle Niger specializing in inland fisheries research.

34. A fishery research station which is connected with the Institut d'Etudes Centrafricaines of Brazzaville has been operating for some years at Pointe Noire in French Equatorial Africa. In the field of inland fisheries, an experimental fish farm at Djoumouna near Brazzaville comprises seventy-two basins which extend over a surface of five hectares. In addition, a special expedition which has a floating laboratory is studying hydrobiology and fisheries on Lake Chad.

35. In Madagascar, the Institut de Recherche Scientifique de Madagascar has established an oceanographical station at Nosi Bé. The seas surveyed by this station include the Mozambique Channel and its northward extension around the Comoro Archipelago and Aldabra, a sea area which is among the least well explored in the world.^{7/}

36. In Netherlands New Guinea, two research vessels have been engaged in exploratory and experimental fishing. In addition, experiments have been undertaken with the drying and salting of fish in the humid climate of Hollandia and its vicinity.

37. The basic objectives of fisheries biological research and management in the Territory of Alaska are to establish current levels of abundance and trends of abundance in major fisheries, to determine the basic factors responsible for changes in abundance, to forecast annually the abundance of major stocks and the amount of fishing intensity which they could support, and to recommend means of averting or mitigating the damages to the fisheries from industrial or other developments in the Territory. Extensive research programmes have been carried out on salmon, herring and other species. Technological and marketing investigations have been undertaken at the Fisheries Products Laboratory at Ketchikan with emphasis on problems in the development of off-season fisheries and the improvement of fisheries products and processes.

38. In the Territory of Hawaii, fishery research is carried out by three agencies. The Division of Fish and Game concentrates on local skipjack (tuna), the University of Hawaii carries on studies of more fundamental nature, and the Federal Government conducts research programmes aiming at an increased knowledge of the pelagic fisheries of the central Pacific.

39. Various fisheries surveys and experiments have also been carried out in American Samoa.

III. Development

40. It may be argued that a good deal more research, including survey work is needed in many Territories before fishery development can be successfully planned and carried out. Pending the results of such research, fishery development planning in these Territories must remain of modest scope, often confined to the planning of pilot projects.

41. In the absence of over-all fishery plans or programmes, fishery projects or schemes have usually formed parts of agricultural or general economic development plans.

42. At the beginning of the period under review, government activity in fisheries in the Non-Self-Governing Territories was confined mainly to administering regulations for the protection of natural resources and their orderly exploitation. Most of this activity was undertaken by agricultural or other departments not established specifically to administer or develop fisheries. As metropolitan as well as territorial governments have taken a more active part in the promotion of the interests of the fishery industries, specialized fishery agencies have been established and/or fishery specialists have been appointed to serve on other agencies. In the United Kingdom Territories, for example, only the Federation of Malaya had, before 1939, staff concerned exclusively with fishing industry matters,^{8/} apart from a minor investigation into the sponge industry in the Caribbean Territories (1936-1940). This state of affairs has been remedied since the war by the appointment of fishery officers

^{8/} United Kingdom: Production of Fish in the Colonial Empire, London, 1949, p.3.

most of whom are graduates of the United Kingdom universities and have taken a special training course. By 1953, the number of fishery officers was about fifty and all United Kingdom Territories except Fiji, Cyprus, and the lesser islands had (or had had at one time) fishery officers.^{9/}

Natural fisheries (marine and inland)

43. Governments in the Territories have promoted the development of natural fisheries during the period under review, among other ways, by:

- demonstrating modern fishing equipment;
- giving financial support and technical and commercial advice in the acquisition of equipment;
- making fishing equipment available on favourable terms;
- providing boat-building and repair facilities;
- furnishing advice in the design of new boats;
- installing engines or inspecting boats before the installation of engines by private firms;
- constructing fish harbour and landing facilities;
- stocking of inland water bodies;
- abolishing import duties on oil, petrol or equipment used in the fishing industry;
- promoting fishermen's co-operative associations;
- providing vocational training for fishermen.

Specific examples of the activities carried on in the individual Territories or in groups of Territories are furnished below.

44. United Kingdom Territories. Demonstrations in the use of powered boats and modern gear and in the operation and maintenance of marine engines are given in the majority of Territories. Vocational training of native fishermen with the use of government equipment and the provision of financial assistance in the acquisition of fishing equipment are among the more important activities undertaken in the interest of fisheries development.

45. Fishery administration or state corporations in all of the following Territories assist in the acquisition of equipment either through the granting

^{9/} Ibid.: Revised Edition, London, 1954, p.3.

of loans or the sale of equipment on favourable credit terms, or on a hire-purchase basis: Aden, Barbados, the Federation of Malaya, the Gold Coast, Hong Kong, Jamaica, British Virgin Islands, Mauritius, Singapore, Trinidad and Tobago, Nyasaland, Uganda, and Zanzibar.

46. In the Gold Coast, the Federation of Malaya, Nyasaland, and Uganda, boat-building and repair facilities have been made available to the fishermen. In the Gold Coast, for example, where no private boat-building yards existed, the Fisheries Department constructed facilities at Secondi in 1952. At this boat-yard, motor surf boats and smaller craft of various types are constructed at costs substantially below those of imported craft. A significant feature of the work at this yard is the training of Africans in modern boat construction techniques. The boats built at the government yard and craft imported from the United Kingdom have been chartered to fishing companies and co-operatives on hire-purchase terms. The Department of Fisheries inspects craft and engines on a regular basis and provides maintenance and repair facilities at the Secondi boat-yard. The Department's own boats are used for patrolling, training and rescue, rather than for fishing, operations.

47. In the Federation of Malaya, the Government built its own dockyard at which publicly financed craft were constructed.^{10/} Government development activities in the Federation also included the building of jetties where the boats could be tied up, the blasting of rocks, and the improvement of harbour facilities. When, in 1953, the Malayan fishing fleet for the first time in history, as a result of mechanization, was able to follow the migration of a particular species (Malayan shad), the Fisheries Department made available facilities for the landing of catches, the washing and repairing of nets, revictualling, refueling, as well as accommodations for sleeping.

48. The curriculum of the Kabalego Technical School at Masindi, Uganda, includes a course in boat-building. At the same time, the facilities are used for commercial purposes, i.e., for the construction and repair of craft used by African fishermen.

49. In Nyasaland, the Government since the early 1950's, has carried out a programme seeking to replace dugout canoes with planked boats.

^{10/} Colombo Plan Reference Service No. 4, Colombo Plan Information Unit, 28 April 1956, p. 11.

50. In Hong Kong, the Government is assisting with the mechanization of the fleet and provides a boat-design service and inspects craft before installation of engines by private firms.
51. In many other Territories, the lack of services for the repair and maintenance of equipment imported from Europe has been acutely felt. This, in some instances, has led to the employment of technical specialists on the staff of fisheries administrations and to the acquisition of at least rudimentary technical facilities to be placed at their disposal.
52. Apart from Hong Kong and the west coast of Malaya, mechanization has been mainly concerned with small surf boats of local or foreign origin. The provision of landing facilities in these Territories, therefore, has been, comparatively on a lesser scale than, for instance, in the French Territories where the emphasis has been on the development of deep-sea fishing.
53. Educational services, apart from those pertaining to the instruction of fishermen in the use of modern equipment are provided in several Territories. In Gambia, for example, classes for fishermen were started in 1947, and in 1952 a fisheries school was established for the training of students from all divisions of the Protectorate. In the Federation of Malaya, fishermen's training courses in helmsmanship and engine maintenance and repair were organized. The Fish Marketing Organization in Hong Kong provides general education for fishermen's children.
54. Extensive fish stocking projects have been carried out in some Territories. In Uganda, for example, there are over 500 dams, the majority of which have been stocked with various species of Tilapia.
55. Other Territories. In Papua, the Fishery Administration distributes improved fishing gear to indigenous fishermen. It is believed that this has stimulated the sale of fish in areas where fish consumption previously was small.
56. The Government of the Belgian Congo assisted in the establishment of the Société de Pêche Maritime du Congo Belge in 1951 which at the latest date operated four trawlers based at Matadi.
57. In French West Africa, port and landing facilities have been improved at Dakar, Port-Etienne, Conakry, St. Louis, and M'Bour. Dakar, in particular, because of the wealth of fish on the West African continental shelf and with

its favourable location and development potential, has become the centre of a large marine fishery.

58. In the Territory of Alaska, government development activities included, among other things, the stocking of inland water bodies. During 1954, for instance, rainbow and other species of trout were planted in thirty-three different lakes in various parts of the Territory.

59. In American Samoa, fifty indigenous fishermen were given an opportunity to work on Japanese boats in 1956 to study long-line fishing techniques. Two Samoans and one Guamanian were sent to the fisheries training course conducted by the Food and Agriculture Organization of the United Nations from November 1956 to February 1957 at Noumea, New Caledonia.

60. The Government of Puerto Rico assists the fishing industry through the sale of fishing equipment at reasonable prices and through the construction of a pier for the use of fishermen at the fishing centre of Fajardo.

Fish culture

61. In many Territories, the production of fish under controlled conditions by the farm population has expanded greatly since the Second World War. Pond culture, in particular, has created substantial interest among farmers. Rapid strides have been made in this field through the construction of new ponds and the introduction of new species. Progress also has been made in the stocking and harvesting of lakes, rivers, dams, irrigation or drainage channels, swamps, rice fields and other inland waters. The post-war development has to no small extent been associated with the introduction of one species, tilapia mossambica, which is characterized by a remarkable growth rate and adaptability to different fresh or brackish water conditions. Since the war, the production of tilapia mossambica, which originated in Mozambique in Africa, has spread to many areas among which are the Territories of Papua (1954), Madagascar (1956), North Borneo, Sarawak, Trinidad and Tobago, Guam (1954) and American Samoa (1957). Through experimentation and suitability of many species (including other species of tilapia) for a variety of different tropical conditions has been investigated. As a result of this research, the stocking of waters is now becoming more selective.

62. Although fish farming is mainly carried on for subsistence purposes and the harvest, therefore, does not to any large extent enter trade channels, it, nevertheless, furnishes a valuable part of animal protein intake of the rural populations.

63. No comprehensive statistics are available to show the actual level of output of fish farms or its post-war increase. The rapid advancement in this sphere, however, can be demonstrated on the basis of a few examples cited in the analysis below of government promotion of fish farming. This promotion has played a dominant role in the development of post-war fish farming and includes the following:

- establishment and operation of fish farms for demonstration of education in fish farming;
- construction or advice in construction of private fish ponds;
- granting of loans for pond construction;
- fish propagation and stocking, including hatching, breeding and distribution of fry;
- extension work including assistance in promotional activities, instruction, demonstration and provision of various aids for fish farmers in the field.

64. United Kingdom Territories. In the Caribbean Territories fish farming is most advanced in Jamaica, where a large number of ponds in widely separated areas are under cultivation. Technical advice on fish culture is available to farmers. Up to 1954, fish ponds in 103 areas in the islands had been stocked. Cultivation of fish in ponds has been introduced in certain areas of British Guiana. In Trinidad and Tobago also, there is some small-scale fish farming which is being developed by distribution of fry.

65. In Uganda, fish farming is of greater importance than in any other United Kingdom Territory. By the end of 1956, there were approximately 2,000 ponds in operation; their number is increasing at the rate of about 100 per month. The Government renders technical advice in the construction of ponds, runs an extension service for fish farmers, and operates demonstration ponds at various places.

66. In Nyasaland, fish farming, although still on a small scale, has been expanded through Government assistance in the establishment of farms, the stocking of ponds, and the organization of courses in fish culture. In Northern Rhodesia, the Government is also taking steps to develop fish farming.
67. In both Nigeria and Kenya, investigations have indicated that good prospects for fish culture exist, but government action is still mainly in the experimental stage. Some advice or supervision in the building of ponds, however is available. Loans for the construction of fish ponds have been granted by the Nigerian Government.
68. The experimental fish farms in Nigeria, Kenya, Northern Rhodesia, and Uganda serve for research as well as for promotional and educational purposes. By the end of 1956, for example, over 2,000 visitors had seen the experimental farm at Kajansi, Uganda. Some of these had completed training in fish-farming methods at the farm. The farms also produce fry for distribution to fish farmers.
69. In the Federation of Malaya and in North Borneo, fish culture has been actively promoted by the respective Governments.
70. In Hong Kong, Malaya and Singapore, fish culture has a long tradition. In Hong Kong, it is practised in the New Territories where the area devoted to fish culture was increased from 450 to 550 acres in the period 1953 to 1957. Large quantities of fish fry, to a large extent derived from mainland China, are exported, mainly to Singapore, Thailand and Taiwan. Government assistance in the construction of ponds is given by a fisheries assistant. Singapore also has a considerable area under oyster farming in Deep Bay.
71. In Territories other than those mentioned above, fish farming is insignificant or non-existent.
72. Other Territories. The Government of Papua promotes pond culture but so far this activity has not aroused much interest among the islanders. Most of the ponds built are owned by Europeans.^{11/}
73. In the Belgian Congo, the development of fish culture is on a much larger scale than in any other Non-Self-Governing Territory. After considerable experimentation, Belgian experts launched a campaign for the establishment of fish

^{11/} Indo-Pacific Fisheries Council, Bangkok, Thailand: Coastal and Highland Fresh Water Fishery Problems of Papua and New Guinea, IPFC/C57/TECH64.

farms in every province. By the end of 1954, the number of fish ponds had reached 110,873, representing a total water surface of 4,238 hectares.

74. Currently great emphasis is being laid on educational services. The fishery school at Kilwa was opened in 1953. The school is administratively equivalent to a professional school of agriculture. The courses last two years and include training in biology, fishing methods and operation of gear, boat-building, fish preservation, legislation and hygiene. Courses are also offered in agriculture and animal husbandry, since many of the inhabitants of this region are engaged in both fishing and agriculture. The Government has reserved the right to call on the services of the graduates of the school for a period of three years following their graduation.

75. In French Equatorial Africa, considerable effort is currently being made in the promotion of fish culture. The Government has organized fish culture teams, each led by a European expert. Their task is to guide the Africans in the construction and operation of fish ponds. The results to date are considered satisfactory. In the Middle Congo, for example, the number of ponds in 1954 was on the order of 1,200.

76. A number of piscicultural stations have been established in Madagascar. These stations are concerned with research and production. More than 23,000 ponds have been stocked and the distribution of fish fry is steadily expanding.

77. The shell fish industry of the Cook Islands (under New Zealand administration) which is being developed with government support as well as pond culture, have expanded satisfactorily, a number of tilapia mossambica ponds having been constructed in the outer islands.

78. In Guam, tilapia mossambica was introduced in 1954. Plantings in reservoirs and ponds have increased rapidly and by 1956, some 6,000 tilapia fingerlings had been distributed among 120 pond owners.

Fish processing and marketing

79. In the majority of Non-Self-Governing Territories, fish processing at present is non-existent or confined to drying, smoking, salting or other curing by traditional methods. In the remaining Territories, some other kinds of commercial processing have been taken up, although on a very small scale, since the Second

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