

FISH INTRODUCTIONS

Naib B. Iscandari

Fisheries Division, Freetown, Sierra Leone

1. Introduction

Though as early as 2500 BC Egyptians were known to keep tilapia in confined areas, organised aquaculture efforts on the Continent started only in recent times, particularly after the second world war (Meschkat 1967). However, fisheries from natural waters like lakes have been exploited from very early days (van der Lingen, 1967). Fish culture did not progress much because people were accustomed to cropping, gathering, herding and hunting. Though the lead was taken in aquaculture by the Congo, even before the second world war, it was only after the war that fish culture started in many African countries. It was estimated that there were about 27,236 ha of fresh and brackish water ponds in Africa out of the world total of 3,446,048 ha (Lennon et al, 1970). According to a recent FAO estimate the annual aquaculture production in Africa is around 10,000 tonnes. This is less than one per cent of the total world output.

Table I shows the approximate period that aquaculture was initiated in various countries and Table II depicts fish consumption in African Commonwealth countries.

2. Aquaculture and species cultivated

Aquaculture in most African countries has evolved around tilapias. Tilapia species were first tried in ponds in Kenya (Huet 1970, Barbach et al, 1972) and later successfully cultivated in Kalanga (Zaire). In addition to cultivating the locally available tilapia and other species, several species were introduced from outside the continent as well as transplantation from endemic to non-endemic regions. George (1975) describes 56 species of finfish and shell fish introductions to Africa. Presently it is reported that there are over 140 such transplantations, of which 34 are finfish and five shell fish. Seventeen species are considered non-endemic fishes of which 10 are tilapias.

The main reasons for these deliberate introductions as given by Jackson (1960) and George (1975) are:

- (1) to enrich local fish fauna with fish that are more valuable, more prolific or desirable as sport or food fish, than endemic species;
- (2) to control malaria, schistosomiasis or weeds in reservoirs and irrigation canals;
- (3) to fill what have appeared to be unoccupied ecological niches;
- (4) to produce hybrids and thus overcome cultural problems of some species.

Table 3 gives details of species introductions and the purposes intended.

3. Brackish water fish culture

In Africa, brackish water aquaculture is still in its very early stages. Most of the coastal African countries are endowed with estuaries, lagoons and an abundance of brackish water areas which have high potentials for aquaculture development. Some of the species offering potential for brackish water aquaculture are: *Sarotherodon melanotheron*, *Tilapia guineensis*, *T.zillii*, *Chrysichthys* spp, mullets (*M Cephalus*, *M Falcipinnis*, *M grandisquamus*), shrimps, oysters etc. On the West African coast, *Crassostrea tulipa* offers excellent prospects for culture.

In Africa the extensive system of aquaculture is practised in various ways; these include the draining of ponds, use of dug-out-ponds, Akadjas, blocking of natural flood plain depressions, fish culture in rich fields, pen culture, cage culture, and oyster culture including rock and raft culture.

Table I**Period of aquaculture initiation in different countries**

<i>Country</i>	<i>Date</i>
Benin	1955
Egypt	1934
The Gambia	1979
Ivory Coast	1955
Kenya	1921
Malawi	1954
Nigeria	1951
Sierra Leone	1978
Sudan	1950
Tanzania	1940
Togo	1954
Uganda	1957
Upper Volta	1952
Central African Republic	1952
Zaire	1943

Table II**Fish consumption and production in African Commonwealth countries**

<i>Country</i>	Fish Consumption			Fish Consumption	
	<i>Per Capita (kg/yr)</i>	<i>% Share of fish in total protein supply</i>	<i>% Share of fish in animal protein supply</i>	<i>Tonnage ('000T)</i>	
				<i>Marine</i>	<i>Fresh water</i>
Botswana	2	0.9	8.7	0	1.45
Cameroon	10.4	6.3	38.0	19.4	50.00
Gambia, The	13.6	8.1	36.5	11.0	1.00
Ghana	27.5	21.4	68.1	200.4	40.0
Kenya	2.7	1.3	5.6	4.5	55.9
Lesotho	—	—	—	—	—
Malawi	12.7	5.4	55.2	—	51.4
Nigeria	10.5	5.9	39.0	313.1	183.2
Sierra Leone	26.6	16.3	69.5	34.2	15.0
Swaziland	—	—	—	—	—
Tanzania	15.5	9.1	31.7	36.0	190.0
Zambia	12.3	6.1	—	—	—
Zimbabwe	—	—	—	—	—

Table III

Details of exotic species of fish and shell fish introduction

<i>Reasons for Introduction</i>	<i>No of cases</i>
Sport fishing	10
Stocking natural water	5
Culture:	
Pond culture	5
Rice fields	4
Rural fish culture	1
Biological control of unwanted species:	
Weed control	4
Malaria control	1
Snail control	1
Tilapia control	3
Forage (Black and feeding)	2
Filling vacant ecological niches	1
Hybridisation (Private enterprises)	8
Miscellaneous	2
Experimental	9
Total	56