

Gift of the Nile

The fisheries of Egypt, whose source is the River Nile, have always played a significant role, both in ancient and present times

The Greek philosopher, Herodotus (485-426) said, “Egypt is the Gift of the Nile”. How true he was.

Several historians of ancient Egypt have concluded that fisheries were of major importance and that fish was predominantly present in the diet of Egyptians. The conclusion is built on the assumption that cattle and pasture land were scarce, while water bodies were abundant. The physical environment of Egypt, therefore, undoubtedly contributed to the development of an efficient fishing industry.

The River Nile, the father of African rivers, the longest river in the world (6,650 km) and the most important natural feature of Egypt, is the source of both its productive fisheries and agriculture fertility. The early Egyptians called the river 'Ar' or 'Aur', meaning 'black', alluding to the colour of the sediments carried by the river when it is in spate. In addition to the Nile basin, Egypt is blessed with several Nile tributaries, lagoon inlets and natural lakes, apart from being bordered by two major seas—the Mediterranean in the north, and the Red Sea in the east. Present-day Egypt has added a major man-made reservoir, Lake Nasser, in Upper Egypt.

Throughout Egyptian history, the fish of the Nile was an important part of the Egyptian diet. Perhaps it was not always prized by the upper class, but fish used to be served as a means of payment, reward and national revenue. At the same time, the connection of fish with the cyclical life-giving forces of the Nile became an image in the Egyptian conception of the world.

In spite of the obvious differences between the ancient and modern eras, the

River Nile is the most important link between the two civilizations, and fish continues to be a major component in Egyptian diets, accounting for almost 20 per cent of the national consumption of animal protein.

The history of fishing in ancient Egypt began before 4000 BC, before the various dynasties. The ancient Egyptians who lived along the shores of the Nile and the various water bodies, mostly in the delta area, used fish in their diet. They also invented various implements for fishing, and established different procedures to catch the fish. These implements, tools and fishing practices have been conveyed very plainly in tomb scenes, drawings, engravings, papyrus documents, skeletal remains, etc. These remains serve as the main sources of information of Egypt's prehistoric period and attest to the importance of fish as a means of subsistence.

Archaeological investigations of Egypt's ancient economy have demonstrated that Egyptians were well acquainted with their environment, and made good use of the animals of the Nile Valley and desert for subsistence, as well as for raw materials to construct tools. Furthermore, ancient Egyptians were known to be keen observers of nature. This is reflected in the precise depiction of the many characteristics needed to identify Nile fish. It is also reflected in the symbolic or marginal powers attributed to certain fish by virtue of their observed biological behavior.

Fish honoured

For example, mullets, having travelled from the Mediterranean Sea to the first cataract (Upper Egypt), were honoured at Elephantine as heralds of the flood god, Hapi, who was the most important among

numerous personifications of aspects of natural fertility.

The mouth-brooding habits of certain species of the genus *Tilapia* were also observed and associated with creation by the creator god, Atum, who is believed to have taken his seed into his mouth and spat out the world. It is also believed that the Egyptians may have been able to distinguish the habits of *Tilapia zilli*, a nest brooder, from the *Tilapia*. The Nile catfish, *Clarioides spp.*, because it favours muddy waters, was believed to guide the solar boat through the dark river of the underworld at night. Catfish-headed demons are depicted in New Kingdom royal tombs and numerous sarcophagi. According to classical sources, the catfish became holy manifestations of the cat-headed goddess, Bastet.

The Nile catfish prefers deoxygenated, shallow, swampy environments. The large quantity of remains of this species suggests that Fayum inhabitants heavily utilized these shallow water-resource areas surrounding the prehistoric Lake Qarun at Fayum. The Nile catfish is a relatively large fish, which can be effectively collected by spearing, netting or by hand, as a number of ethnographic reports describe. *Lates niloticus*, on the other hand, which need well-oxygenated waters, would be collected most effectively by netting or angling in the

open, deeper waters of Lake Qarun or the mid-channel areas of the Nile.

Fishing, being mostly a seasonal activity, led to a strategy of mobile settlement patterns whereby population or settlement shifts occurred in order to take advantage of resources, as they became abundant.

The annual Nile flood also played a major role in ancient Egypt. In mid-July, the beginning of the flood could be detected at Aswan (Upper Egypt). The Nile would ideally rise and crest in southern Egypt by mid-August. The flood waters would reach the last basins at the northernmost end of the Valley four to six weeks later. In shallow floodwaters, the fish left stranded as the Nile receded were associated with fertility, abundance and eternal life.

Egyptian fishing technology reached a point where fishermen could selectively fish for particular species. From the depictions of fish in tomb scenes, approximately 23 different forms of fish have been identified. These do not, however, represent all the fish that inhabit the Nile.

Preserved fish

Although fresh, unprocessed fish was sold in the market, large quantities were dressed and preserved. The fish were sometimes cleaned as soon as they were

dressed in different ways. As the tomb scenes indicate, the fish was grasped by the tail and laid, belly down, on a block or on a flat-sloped dressing board. It was then cut with a broad splitting knife, using downward strokes along the vertebral column, after which the viscera was removed.

The fish was then laid flat or hung to dry, the head and vertebral column often left intact. The most frequent fish scene was of mullet, which, besides being highly prized for its flavour, also contained roe. The roe, which was considered a delicacy, could be eaten fresh or dried.

Some fish served as nourishment for the marsh workers. Dried fish hanging next to tools in the temporary shelters of the marsh dwellers were, undoubtedly, for immediate consumption. Another segment of the catch was used as payment. Scribes recorded that fish and a portion of the catch were distributed to various officials. The fish remaining in the possession of the fishermen could then be bartered for other commodities in the market. Fish could be traded for a loaf of bread, one fresh mullet for a jar of beer, and an entire basket of dried *Mugils* for one amulet. Clearly, on the basis of the tomb scenes, fish was a cheap source of protein, and documents confirm this. Some historical reports point out that fish from Egypt reached Syria.

Present-day Egyptian fishing industry may be divided into three main sectors: marine, inland and aquaculture. According to the latest official fisheries statistics for 1999, issued by the General Egyptian Authority for Aquatic Resources, the Mediterranean and Red Seas provide Egypt with a coastline of about 2,420 km and a shelf area of 87,120 sq km. They account for about 27 per cent (172,343 tonnes) of the 1999 total fish production of 648,937 tonnes. A wide variety of fishing vessels and gear are in use. The registered fishing fleet consists of 3,258 powered vessels and 36,376 boats propelled by sail. The majority of motorized boats operating in marine fisheries are equipped with 30-800 hp engines. Boats equipped with small engines use hand-lines and trawl nets. The marine fleet is composed of 1,235 trawlers

and 369 purse-seiners, 915 line-fishing boats and 739 boats using other fishing gear, operating in the Mediterranean Sea. Non-motorized boats operate mainly in inland fisheries. Purse-seining is generally conducted at night, with light-attraction techniques. Nets are typically 200-300 m long and 50 m deep. The purse-seiners usually have 20-30 crew members. More than 60 per cent of the Mediterranean fish is landed at Dameitta, Port Said and Alexandria. Most landings comprise 30 fish and prawn species. Sardines account for the bulk of the catch (about 20 per cent), while mullet makes up 9 per cent, and shrimp and crabs, 11 per cent.

The Red Sea fishing grounds can be divided into two main sectors: the Gulf of Suez, a shallow gulf not more than 100 m deep, with a nearby flat bottom, and the Red Sea coast, which extends from the southern part of the Gulf of Suez to the Egyptian/Sudanese border. Landings from the Red Sea and the Gulf of Suez coast in 1999 reached 82,400 tonnes. More than 50 per cent of the catch is landed at El Attaka in the Gulf of Suez. Red Sea landings comprise more than 30 commercial fish species. Shrimp, crab, lizardfish, bogue, snapper, sardine, and red mullet constitute the main species landed.

Egypt's largest lake is Lake Nasser in Upper Egypt, which covers an area of 6,216 sq m. In 1999, 41,304 tonnes of fish were landed from this man-made lake. There are several littoral lagoons in the Delta area. The largest of these lagoons is Lake Manzala. Their total surface area is about 200,100 hectares. There are also two coastal depressions at Bardawil and Port Foad, as well as inland lakes, the River Nile and its tributaries. In 1999, all these water bodies together produced a total of 250,319 tonnes, or 39 per cent of the total landings. The main species landed comprise *Tilapia (Bolti)* and carp species.

Old activity

Fish culture is an old activity in Egypt. The first record of this was pictured on the walls of the tombs of Thebianes in 2000 BC. However, with an extensive water resource base, and a relatively low population density until the early twentieth century, no real interest existed in the culture of fish. Capture fisheries

provided the population with adequate fish. With the increase of the population in the last 50 years or so (Egypt's 1998 population was 65 million, with an annual increase estimated at 2.3 per cent), and the resulting increase in pressure on natural resources, fish farming has received more and more attention in recent years.

Aquaculture has increased considerably. In 1999, production from all farms and systems totalled 226,275 tones or 35 per cent of total production. This included fish from regular fish farm ponds, as well as from rice fields. Tilapia, carp and mullet are the main species produced. However, catfish, sea bream and shrimp are produced in lesser quantities. The government is the main supplier of stocking material for freshwater ponds. Marine fish farming depends on the wild fry collected and distributed by the government.

Recent estimates of the maximum sustainable yield (MSY) for marine and inland fisheries are not available. However, it is generally recognized that most marine and inland fisheries resources are fully exploited, and require a reduction in fishing effort, as well as other management measures to ensure sustainable production. In addition, the water quality of most inland fisheries is adversely affected by agriculture drainage, industrial effluent and sewage. There is inadequate mixing of fresh and

salt water in the coastal lakes and in Lake Qarun.

Water supply for aquaculture is generally polluted, since only agricultural drainage water may be used. Furthermore, land is leased for a short period of time, which prevents long-term planning for sustainable aquaculture.

Although some fishermen and fish farmers sell directly to the public, it is likely that most fish are bought and sold several times before reaching the final consumers. Fish is sold to private buyers at prices set by a local committee, by direct negotiations between buyers and sellers, or by auctions. Intermediaries may advance funds to producers, who are usually required to pay back such loans by deducting from the value of products delivered to the intermediaries. Marketing margins or commissions are generally not extensive.

Private sector

Buying and selling of fish is largely carried out by the private sector, operating in a free market, where prices reflect supply and demand. There are some exceptions, however. In some areas, prices are set under government control, in an attempt to bring fish to low-income consumers. As a result, some distortions occur. Poor-quality fish may result from little or no ice being used. Market forces, and not rules, regulations and fixed prices, tend to

be the determining factor, as far as quality is concerned.

Fish consumption in Egypt is characterized by a longstanding traditional preference for fresh fish, with a per capita consumption of about 13.24 kg/year. However, with increasing fish imports and developments in cold storage, frozen fish is becoming acceptable. In addition, fish consumed in areas far away from landing sites is salted, as in some sardine and mullet caught from the Mediterranean and Red Seas. Processing facilities include units of freezing, canning and smoking fish. In 1999, Egypt imported about 193,000 tonnes, valued at Egyptian Pounds 334 million (US\$88 million), mostly of low-value fish, to supplement local supplies, while exporting only about 692 tonnes, valued at Egyptian Pounds 4.1 million (US\$1.08 million) of high-value fish.

To develop the fisheries sector in present-day Egypt, attention must be paid to the development of its natural fish resources through better conservation and management of marine and fresh-water resources. This can be achieved through the careful implementation of the FAO Code of Conduct for Responsible Fisheries, to which Egypt is a signatory. Also, there is a need for more fisheries research and up-to-date surveys of the resources. Promotion of mariculture and fishing joint venture agreements with neighboring countries would help Egypt increase its local supplies of fish and, hence, reduce its dependence on imports. ¶

Egypt

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