Maritime opportunities and their exploitation in antiquity

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No one in the village had ever seen the sea — except for the Dutch people, the mayor and Jósef Puszka, who had been there during the war. (Geert Mak, In Europe)

Introduction

This essay investigates one of man’s interactions with the matter that covers some seventy percent of the surface of the earth: water, in the form of oceans, seas, rivers, lakes etc. This interaction involves the hunting of water fauna in order to use them for consumption, better known as fishing. This activity not only took place in Antiquity but is still in vogue and we can roughly distinguish three different approaches. There is the recreational approach, a somewhat individual activity that you can watch on a drizzly Saturday morning driving along the Hoornse Diep (canal in the North of the Netherlands) when an amazing number of men sit under their umbrellas staring at their float. Then there is the highly industrialized alternative of high sea fishing with fishing fleets accompanied by a factory ship. The third version is a kind of maritime pastoralism also called fish farming that is performed in open water (for instance salmon) or on inundated land (shrimps). The sea is not only a source of food but also plays a role as a supplier in the non food sector. Among these products are for instance salt, corral blocks as building material and shells, used as jewellery or, in some areas of the world, as money. The last aspect will not be discussed here.

There are indications that all three above mentioned variations on a theme were practiced in Antiquity although the emphasis was different. I seriously doubt that fishing as a sport or recreation played a large role in Antiquity. Since fishing as a sport involves hooks, the general distribution of this equipment is too small to invalidate my doubts. Many people who practice fishing as a sport (perhaps in reality it is a kind of mental yoga or zazen) always put the caught fish back in the water, a practise that cannot have had a lot of followers in Antiquity. Whether fish farming existed is doubtful, there are indications that fish was kept alive in large basins on land but there is no proof of breeding. The question is now if in Antiquity a version of our fish catching industry existed, if fish was an important part of the diet and if the combination of these two factors made for an important economic component. An altogether different, in the sense of eccentric or exotic, additional flavour in the relation with fish and the consumption of fish should not be neglected or excluded.

The sea as a context

Many people in this world have never seen the sea and will never see it but to many others it is an important factor that influences their lives in one way or another. This influence can have many appearances. The sea can be an important provider of food and in certain extreme environments it occupies a near monopolistic position e.g. with certain groups of subarctic hunter-gatherers (Bekker-Nielsen, 2007: 187). In less extreme habitats the significance of the sea as a food provider may vary. In our efforts to appreciate the importance of fishing as an economic factor or as part of the diet in Antiquity we may be biased by our terrestrial orientation. This orientation has taken over the more maritime orientated worldview from before 1900. Our analysis of the maritime activities concerning fish and fishing in Antiquity could well be judged as the effort of an outsider with all its consequences.

Fishing in archaeological and proto-historical sources

From archaeological and protohistorical sources one might gain the impression that fishing (or harvesting from the sea) in ancient times in the Mediterranean was a somewhat neglected source of food or income. There could be several reasons for this evaluation:
1. In reality, fishing did not play a large role in the food supply.
2. Archaeology influenced by the pre-20th century prevailing maritime worldview considered fishing an almost natural human activity and took it for granted.
3. Archaeology preoccupied by the terrestrial worldview that gained momentum in the 20th century was more interested in other human activities concerning food supply and neglected the subject.
4. The research for evidence of fishing activities was not a priority among archaeologists and could have been considered a waste of time and money. In order to get a more profound idea about the economic and social status of fishing in Antiquity I will now discuss the evidence of fish and fishing by means of looking at the written sources, the iconography and the archaeological data.
Fishing in more or less contemporary written sources

Fish and fishing are not frequently discussed items in the contemporary written sources and in Homer’s (+1000 BC) Odyssey, where a saga of ten years unfolds on or around the sea the subjects are conspicuously absent, except for the occasional sea monster.

The New testament of the Bible (written between the second half of the first century AD and the beginning of the second century) forms quite a contrast because here fishing is a mayor item. However, we have to consider a number of things: 1) Fishing takes place mainly on lakes and not on the high seas 2) Fishing is used as a metaphor for the winning of souls. In the Bible we can detect strong clues for the social environment of fishing and its practitioners. It is emphasized that Jesus mingles with outcasts such as lepers and prostitutes. Contemporary Jews would try to avoid this since it would make them impure, a status that had to be corrected by time-consuming rituals. That Jesus is in close contact to fishermen does not only have a metaphorical meaning but says also something about the social status of fishermen. It puts them in a group of social losers among lepers and prostitutes.

In the Geographia of Strabo (64 BC – 24 AD) we find the following sentence: “At any rate, they are compelled, on account of the poverty of their soil, to busy themselves mostly with the sea and to establish factories for the salting of fish, and other such industries” (Strabo, Geographica, 6.1.1). He talks about the people of Velia (Hyele) a Greek colony south of present day Salerno who stood apparently with their backs to the wall in making a living to such a degree, that they had to fall back on fishing.

The Historia Naturalis written by ancient know-it-all Pliny the Elder (23 AD – August 25, 79 AD) has a chapter with the title: “The decay of morality is caused by the produce of the sea”. In this chapter he continues ranting: “Indeed, of the whole realm of Nature the sea is in many ways the most harmful to the stomach, with its great variety of dishes and tasteful fish” (Pliny the Elder, Naturalis Historia, 104).

The Haliéutica of Oppian (+200 AD) or Ovid (43 BC – 17 AD) according to some describes the life of fishermen in a 3500 stanza epic poem but the fishing scenes to be operated from the beach and you could suspect that Oppian has never been on a boat (Bekker-Nielsen, 2005: 94).

In De Re Coquinaria, a cookbook or rather gourmet guide by Marcus Gavius Apicius (25 BC –47 AD) the consumption of fish is depicted as an upper class privilege that has a rather decadent touch. Apicius confirms here the above cited suspicions of Pliny about “decay of morality”.

Nowhere in the written sources is any evidence of fish as a sacrifice to the gods. Every animal fit for human consumption: pigs, cows, goats even the pigeon has this function (Katchadourian, no date: 82). It looks like the gods had a collective aversion against fish and this again comments on the status of the product. More logical seems that sacrifices are performed with animals that are still alive: a pig or cow is slaughtered on or in front of the altar. With fish this ritual is not an option and this might disqualify the species for this role.

Overall one can conclude that fishing is not a hot item in ancient literature. When it is mentioned then rather negatively, as a last resort or a sign of decadence. From the written sources we do not gain the impression that fishing is an important economic factor or a well-organized industry that involves the investment of capital on a big scale and the employment of a considerable number of people.

Iconography

On the colourful frescos from Akrotiri (~1500 BC) we see men carrying fish hanging on a string. From the 5th century onwards red figured plates with depictions of fish appeared in Greece and Southern Italy. More than one thousand are known (Katchadourian, no date: 81) and they are generally considered to have been used as plates to eat fish from. The argument used is a small round recession in many of the plates that was supposed to hold the garum (fish sauce) or the Greek equivalent of this ancient Maggi. I am sceptical about this. Ceramics carry all kinds of depictions, battle scenes, domestic scenes, erotic scenes and depictions of fish. There are no or very few depictions of other types of food like for instance pork chops or fruit so why was fish the only food that was depicted?

There are quite a lot of mosaics around on which fish are depicted that give us information on the types of fish that were known to the artists and to the clients who ordered the decorations. The mosaics hardly give any information on the consumption of fish or about the methods used to catch them. Maybe the fish mosaics had the same interior decoration function as nowadays an aquarium in a living room or an office, to furnish a quiet and relaxing atmosphere. In Japan you can even encounter screens showing aquarium endless movies in many hotel elevators. One mosaic from Hadramatum (Tunesia) depicts some catching methods and I will discuss this below with the archaeological evidence.

Conspicuous by their absence are inscriptions and grave monuments that indicate a relation to fish or fishing. This may again point towards a low status of the profession and its products. Iconography provides us with a lot of beautiful pictures of fish but says very little about the importance of fishing and fish consumption. The frequent depiction of fishes on plates and mosaics could also be linked to the slightly decadent touch that Pliny identifies in the motive on which I will elaborate below.

Archaeological evidence

Fishing with hooks made from bone is known since the Mesolithic, an even older method may be harpooning but there is no direct evidence of this. A mosaic dating
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Fig. 1 Mosaic at Hadramatum (Sousse, Tunisia)

from the 3rd century AD from Sousse (Hadramatum) in Tunisia offers us a glimpse of several fishing methods (Fig. 1). On the mosaic we see two men fishing with a rod and hook and going clockwise we then observe two men operating a seine (drag net) from a boat. Technically seen this is a rather hopeless enterprise since it is very difficult to keep the net outstretched from one boat but this may be attributed to the artist’s interpretation or his unfamiliarity with the procedure. At the bottom we discern a man in a boat who is possibly handling a casting net (Bekker-Nielsen, 2007: 191). According to the Archaeological Museum of Sousse it is a representation of a man fishing with a trained sparrow hawk. This technique is well-known as being performed with cormorants for instance in China, Japan and Macedonia. I cannot eliminate the possibility of fishing with a trained hawk but I have found no further evidence of this method. The last technique shows a man holding a creel (fish trap). This technique can only be used in the shallow waters of a creek or a lake (a boat is not really necessary) and the yield is not overwhelming. I would conclude that all shown methods indicate that fishing was a rather small-scale operation that did not provide big catches. The depiction of the drag net and fish trap method provoke the idea that neither the artist nor his principal was very familiar with fishing activities.

In 1959, while work on the new airport of Rome was in progress, the wreck of a boat was discovered (Fig. 2). This boat has a reservoir with openings to let in seawater and so fish could be kept alive and fresh until the catch could be brought on land. This vessel has a length of approximately seven meters, was built in the 2nd century AD and can be admired in the Museum of Roman Ships near the Fiumicino airport. This is up till now the only vessel from Antiquity that can be qualified as a fishing boat. It is not a very large, it could only be operated near the shore or on inland waters (Beltrame, 2007: 230). The boat shows no evidence of being propelled by sail and the crew would have been limited to two or three men. The amount of fish that could have been caught and handled with this vessel cannot have been copious. In 1986 a vessel with a similar but bigger reservoir was found at Grado near Venice. The reservoir that was equipped with lead pipes that suggest machinery to exchange the water, had a volume of about 4 m³ and could have held 200 kilograms of live fish. The sixteen meters long boat also contained hundreds of amphorae in which garum and salted fish residue was detected (Marchant, 2011). This was certainly not a fishing boat but a freighter and it is interesting to see that fish was obviously not only transported after it had been processed.

In the coastal regions of Spain, France and Italy, archaeology has brought to light large production sites for the maggi of Antiquity garum, an evil smelling condiment that enjoyed great popularity. As important as it is today to supply American armed forces with Coca-Cola when on mission abroad as important was it to provide a sufficient stock of garum for the Roman legions. The concoction is made by letting fish or fish innards, mixed with a lot of salt, ferment in stone basins in the open air preferably at a high temperature. Although the exact recipe is unknown the final product might have had some similarity with trassi (fermented shrimp paste) from the Indonesian kitchen or nam pla (fish sauce) from the Thai cuisine. If we consider the large production sites of garum, there must have been
an enormous supply of fish (innards). Archaeology however has so far failed to come up with satisfactory evidence of how this supply came about.

The problem with the remains of fish consumption and fishing is that they do not withstand time very well and so it is not remarkable that hardly any fishing boats, nets, creels (wicker fish traps) etc. have been found. At excavations the soil has to be sieved meticulously in a time consuming (thus expensive) activity otherwise the fish bones will elude our attention.

After World War II and the development of the aqua lung by Cousteau and his colleagues, maritime archaeology (and the depredation of maritime sites) took advantage of the improved conditions for working under water. The number of shipwrecks that was discovered and analysed rose dramatically (Muckelroy, 1978: 13-14). It is remarkable that this development has not led to the discovery of more fishing ships or even to the discovery of remains of activities in connection with fishing. It is also striking that books on maritime archaeology like the one cited above written by Keith Muckelroy do not pay any attention what so ever to fishing. This points towards a kind of *contradictio in terminis* that maritime archaeologists also start leaning towards a more terrestrial world-view nowadays. Because they worked in an environment with limited access and possessed very specialized skills, maritime archaeologists started to view themselves as a kind of archaeological elite. The more terrestrial world-view of maritime archaeologists can be detected by their increasing interest in sites that are not per definition under water but near the water or connected to shipping like for instance harbour installations, warehouses and sanctuaries with special ties to sailors. Dr. Gambin of the University of Malta underlined this evolvement as he started his lectures on Maritime Archaeology as follows: “You don’t have to bring your diving goggles for this course” (Gambin, 2011: personal communication).

Malta, a fishy case study

The relatively small Maltese archipelago (316 km²) located south of Sicily had an estimated population of eight to ten thousand people in 218 BC, at the time of the annexation by the Romans (Gambin, 2004: 172). Malta has a rather problematic agricultural situation since it seldom rains between May and October (Wilson, 2010: 160-161), in other words Malta had a problem to supply enough food to its population. From the Middle Ages when the population numbers were about the same or in decline there are frequent reports of badly needed imports of grain from Sicily or their failure to materialize (Dalli, 2011: & Dalli, 2011: personal communication). It would be logical when the Maltese had turned to the sea for a supplemental part in their diet, however evidence of fishing in Antiquity on Malta is nonexistent. Traces of *garum* production like in Southern Spain, France or Italy are also not visible. This is in contrast to the large area with Roman salt pans. Modern archaeological publications concerning Malta e.g. by Atauz, Bruno, Gambin and others do not dwell on the subject.

In contrast “the other economy of the sea based on the violent extraction of wealth” (Dalli, 2011: 75), also known as piracy was an explicit part of the Maltese economy in Antiquity (Cicero, In Verrem, 2.4.46). So here we have the controversy of people who needed a supplemental part of their diet, who had ships at their disposal and were good sailors by consequence but did not practice fishing. If we take Strabo at his word the Maltese were obviously not that desperate in their efforts to provide sufficient food. There is of course the possibility that Maltese archaeology that in now bygone days strongly focussed on the Neolithic temples completely missed or ignored traces of fishing.

Evaluation and conclusion

The overall evidence of fish consumption and fishery in the contemporary written sources is not abundant. One does not get the impression that fishing was an important economic factor and it is indeed being denounced as an occupation of people who are either desperate or of a low social stratum. As an opposite there is the placement of fish consumption in a slightly decadent ambiance (Pliny and Apicius). In order to appreciate this last phenomenon it might be adequate to compare the social merit of fish consumption in Antiquity with the social merit of boxing nowadays. Boxing always had the characteristic of being at home among the lower strata of society (in the USA among the African Americans) but boxing matches nowadays enjoy the attention of crowds of well-heeled and high educated people who are attracted by the supposedly decadent atmosphere.
In the iconography, fish has a high profile as in mosaics, frescoes and on plates but besides having the value of nice decorations, it gives us only very limited information on fishing. If fish in reality had a connection with a type of decadent atmosphere then the high illustrative presence makes sense. An interesting comparison could be drawn with the tales about mermaids, they survive in our fairy tales and a closer look discloses quite often a slight erotic undertone. Depictions of fish could also have been a kind of ancient mania, comparable to the situation that not long ago in Japan or China one could not buy a plate, a stamp or a pair of socks without Dick Bruna's *Nijntje* (rabbit) on it (fig. 3). Research directed at inscriptions concerning fishing on monuments or graves is a dead end and this could again give an indication about the (non) respectability of the subject.

Archaeology offers us large sites with production installations for *garum* and innumerable amphorae with residue that discloses the contents as *garum* or salted fish. Archaeology, in particular the maritime branch, has however failed to come up with large-scale evidence of the industries' supply side. Only one vessel has been identified as a fishing boat and if something compared to present day high sea fishing was in operation can be doubted. Recent research by way of isotope studies of human bones gives evidence that fish formed only a very small part of the diet (Bekker-Nielsen, 2007: 199).

Still the quantities of fish required for the *garum* production and the moderate consumption had to be caught. Our approach towards fishing is heavily influenced by the image that we have of commercial fishing nowadays. This image can be split up in two separate images: A fleet of fishing boats accompanied by a kind of factory ship that processes the catch while at sea and keeps it from going bad, an industrial operation that in particular the Chinese, the Koreans and the Japanese have developed to perfection. The other image is the holiday picture of fishermen working during the night (you can see the lights of their boats from the beach) and in the morning returning with their catch, a sight well known from the Mediterranean and South East Asia. We should not jump to the conclusion that one of these images can be applied to fishing in the past because there is no evidence that shows that this has something in common with the reality of fishing in Antiquity.

We can assume that rivers and lakes in Antiquity were hardly polluted the way they are nowadays and that these waters did have a far larger fish population as compared to the present. Putting fish traps or stationary nets in rivers and lakes is a small time operation that not obligatory involves the use of boats and requires only a small investment in equipment, manpower and time. This could mean that without huge investments both in equipment and time a considerable quantity of fish could be caught. The quantity of fish caught in lakes, rivers and close to the coast (either from small boats or with dragnets operated from the beach) must have presented the raw material for the *garum* and salting industry and for the rather limited consumption of fresh seafood. We must also take into consideration that the coastal area of the Mediterranean in Antiquity boasted some 6,500 km² of marshy lagoons. This form of maritime landscape is far more productive than the open sea with a possible yield of more than 100 kg/ha p.a. (Horden and Purcell, 2000: 192).

Gallant (1985), as he writes in his book "A Fisherman's Tale" considered fishing in Antiquity a low profile operation that took place on the shore without boats (Bekker-Nielsen, 2005: 93, Beltrame, 2007: 229 & Gallant, 1985). The evidence supplied by contemporary written sources, iconography, archaeology and modern archaeological publications for fishing in Antiquity and in particular for high sea fishing is poor to nonexistent and so supports this view. The problems that seem to deny fishing and fish consumption an important economic role are the fact that fish spoils within 24 hours, that it is tainted by a low social status (on the other hand by a kind of decadence), that the activity is seen as a last resort and that even the palate of the gods was not tempted by a good seafood meal. Without visible high sea fishing operations, the quantity of fish, required for the large scale *garum* industries must have been caught in streams, lakes, lagoons and close to the shore. The absence of pollution and over-fishing in Antiquity made that fish was still abundant there.

**Notes**

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References


