

## CHAPTER 3

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# Fisheries and the State

Through a historical overview ranging from the Ottoman era until present, this chapter details the changing approach of the state to the fisheries. What interests did the Ottoman and Republican state have in the fisheries? To what degree and in what manner has the state influenced fishing practices? What has the role of science been? At a general level there has been a shift in emphasis in state policy from taxation to economic development, and, recently, to natural resource management. In parts of the Ottoman Empire, and especially in Istanbul, fishing was a very important industry. The Ottoman state heavily taxed these fisheries but also formally acknowledged local management forms. One might therefore envision that indigenous or traditional ecological knowledge together with comanagement could have constituted useful management tools in the Turkish fisheries. This chapter explores what happened to these management forms and surveys how and why the State policies that underpinned them discontinued.

### Fishing during the Ottoman Era

Turkish fisheries in the Black Sea and the Sea of Marmara are today among the largest fisheries in the Middle East. Istanbul and Trabzon on the eastern Black Sea coast constitute the two major centres of fishing in contemporary Turkey. There is fairly rich source material concerning prerepublican fishing in Istanbul, but almost nothing about fishing in Trabzon during the same period. The noted traveller and writer Evliya Çelebi, among others, describes an especially rich fishing tradition in Constantinople. Since ancient times a variety of different fishing technologies has been known and used there and elsewhere in the empire.<sup>22</sup> Certainly fishing in Constantinople had a special position in the empire and was considered throughout Europe to be very advanced. In

1723 The French Minister of the Marine commissioned twelve paintings of the Istanbul fishers' method of fishing as part of a program to revive French fishing (Mansel 1995).

Evliya Çelebi also visited Trabzon, of which he gives fish and fishing some mention. He limits his discussion of Trabzon's fish primarily to the *hamsi* (hamsi) (İhsan 1972: 14–15). Of the fishers we learn only that they are ranked lowest among the seven classes of people in Trabzon that Çelebi identifies (Çelebi 1991: 173). Although fishing in Trabzon probably shared much of the fishing technology and terminology of Istanbul, it appears that fishing in these two places developed to some extent into distinct traditions. Several factors combine to allow consideration of fishing in Trabzon as a partly independent tradition, including: a particular focus on hamsi (and the need for special technology, such as the *roşi* – fish schoop-net); a tradition of catching dolphins in the Black Sea region (a specialty of Sürmene); different ways of calculating the shares in the fisheries; and some region-specific fishery terminology. At the beginning of the twentieth century double or triple-walled trammel nets were called *molozma* in Trabzon (Kazmaz 1994: 273) and *difana* in Istanbul (Devedjian 1926).

While hamsi fisheries supplied an important food for people in the Black Sea region, dolphin oil was more important as an export commodity. Fish oil (in other words dolphin oil) is mentioned already in sixteenth century sources (Gökbilgin 1962) as well as in many later sources (Yıldırım 1990: 516). In 1940 twelve teams, comprised of forty to fifty persons each, were engaged in the dolphin fishery in Sürmene. Although some fishers went to catch dolphins in Russian waters before the First World War (Yıldırım 1990: 517), the fishing activities in Trabzon and other Black Sea towns were for the most part very local. There was probably little direct contact between Trabzon and Istanbul fishers. Moreover, there seems to have been little fishing outside of the urban centres in Ottoman times and during the early Republic. Except for the hamsi catches, which reached the general populace, poor and rich, urban and rural, the Trabzon market must have been considerably smaller than the Istanbul market. In the eastern Black Sea region fishing as a livelihood and an adaptation to a monetary economy was probably limited to the city of Trabzon and a few other towns. Trabzon was not a great exporter of fish (at times the town imported fish). During Ottoman times export of salt sturgeon and caviar from the northern shores of the Black Sea to Constantinople was much more important (Bryer 1980: 382–383). *Hamsi-Name* (İhsan 1972), first published in 1928, is in its entirety dedicated to the hamsi, but as in other sources one finds little information concerning the social organization of fishing in Trabzon and how it was treated by the state, and rather more about the culinary and poetic elaborations of this popular fish.

Although Constantinople may have had a special position in Ottoman fisheries thanks to a large urban market and very favourable natural conditions, I believe that a survey of sources about fishing in Constantinople would reveal some general information concerning the Ottoman administration's approach to fish and fisheries. In Constantinople fishing with the *dalyan*, a special 'Turkish' variant of fishing weir, was both an important and widespread technique. The *dalyan* is usually constructed by driving pieces of wood into the seabed to form a trap into which fish, in particular migratory fish, swim. Sometimes the entire trap is constructed of wood; more often nets are stretched between poles. One or more men keep watch from a tower located beside the *dalyan* and as soon as a shoal has entered the weir they signal to other crew to close the opening of the *dalyan*. In Constantinople the *dalyans* were set up every spring and autumn, with the opening directed southwards and northwards respectively to capture the fish that migrated through the strait.

*Dalyans* have been used in the Black Sea, Marmara and Aegean Seas (von Brandt 1984: 161–62; Çelebi 1984: 185–87; Kahane et al. 1958: 478–80; Marciniak and Jentoft 1992; Naval intelligence Division 1944: 96) since the pre-Byzantine era (Oğuz 1976: 592). In other maritime areas under some Ottoman influence, such as along the Arab peninsular, there have been seemingly different and independent traditions of fishing (see, e.g., Serjeant 1968: 486–514). Along the coast of what constitutes present day Turkey, the use of *dalyans* during the Ottoman era was especially important in Constantinople and in parts of the Sea of Marmara and the Aegean Sea (for *dalyans* and *voli* places along the Bosphorus, see Figure 3.1). There are, however, few reports of *dalyans* in what is now the Turkish Black Sea region. There were several *dalyans* on the Black Sea coast near the mouth of the Bosphorus, probably close enough to supply Istanbul with fresh fish. At Sinop there were eight *dalyans* in the beginning of the twentieth century (Devedjian 1926), and according to fishers in Sinop there were three or four *dalyans* in operation there until the mid 1970s. I have come across no reference to or mention of such weirs in Trabzon. However, further east, there were, and possibly still are, a few *dalyans*. One reason for the absence of *dalyans* in Trabzon may have been a lack of suitable sites for their use. The construction and operation of *dalyans* requires shallow and fairly protected waters on a fish migration route, conditions hard to satisfy in Trabzon.

The right to use *dalyans* was granted by the Sultan (or, if far from Constantinople, by local lords). By distributing such privileges, a strategy in no way restricted to fishing, the Sultan both secured followers (those granted the leases) and income from taxes. Charles White<sup>23</sup> gives an interesting description of one of the larger *dalyans* in the vicinity of Constantinople (White 1845, Vol. I: 88–90):

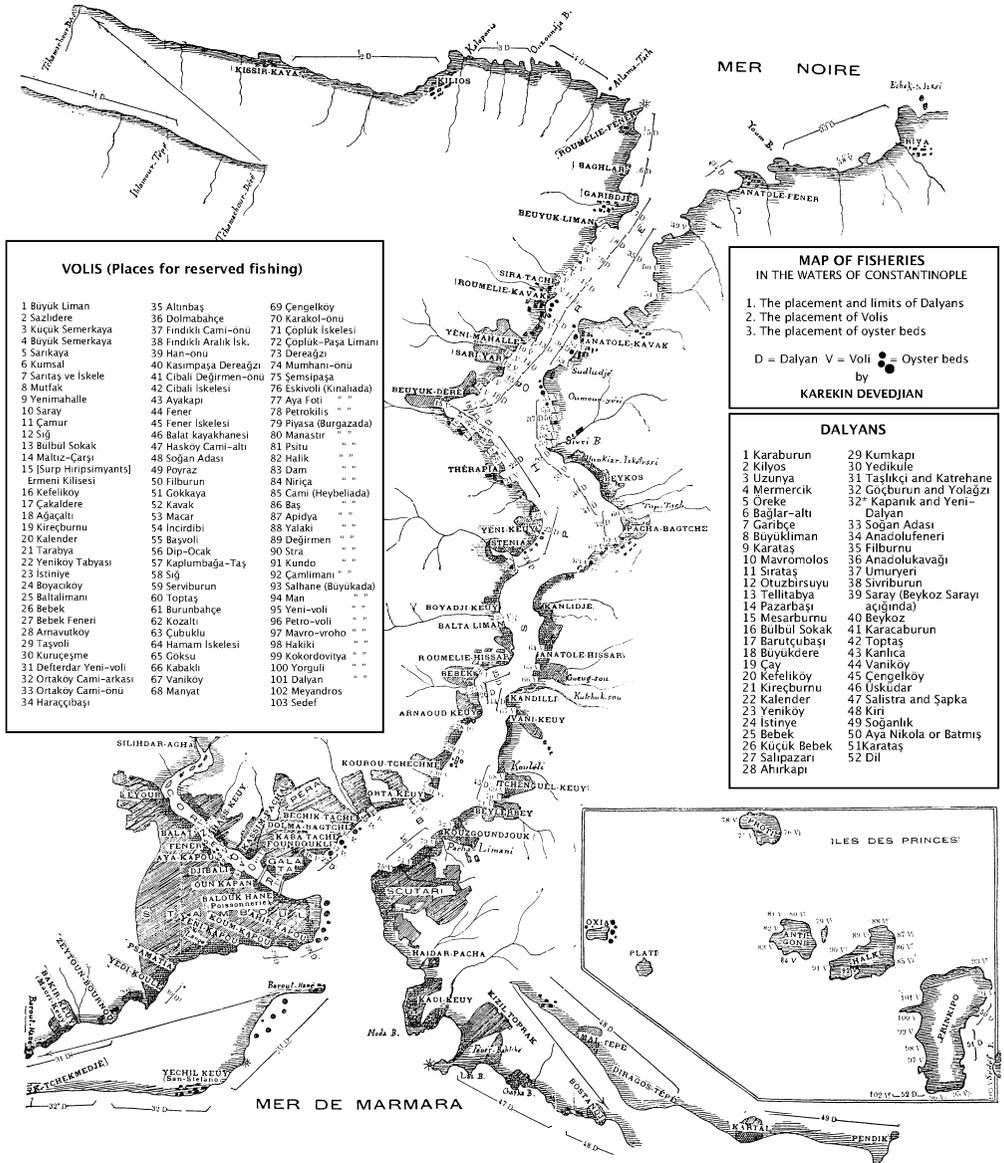


Figure 3.1. Map of privileged fishing spots along the Bosphorus. Devedjian’s map of fishing weirs (dalyan) and seine fishing locations (voli) in the Bosphorus. Source: Devedjian 1926; Deveciyan 2006. Map reprinted with permission from Aras Yayıncılık. In boxes, text is adapted to English from the French 1926 original, while names are given in modern Turkish, as in Deveciyan 2006.

[The dalyan] at the small...island of Cromyon (onion) [on the Black Sea coast east of the mouth of the Bosphorus] is of considerable magnitude, and occupies one hundred and fifteen men, with twelve or more large boats. A third of the latter, with proportionate crews, are employed in carrying fish to the market; the remainder are constantly engaged in working the nets. This fishery is rented by Achem Agha, a respectable Turk, from the grand marshal, Riza Pacha, who himself farms the fisheries on this coast from government. ... The organization of Achem Agha's dallyan differs only from those already described in its magnitude, and in the peculiarities arising from situation. As many as twenty thousand palamoud [bonito] and five hundred sword-fish are frequently trapped in the course of twenty-four hours.

The operation of the fixed dalyans implied clear and sanctioned rules for gear use and access to a specified sea space. Dalyans were usually erected on seascapes that were also suited for casting seines, primarily shallow waters close to shore, generally called *voli* places. The use of seines on voli places was likewise often restricted to a village or a person. As in the case of dalyans, the right to cast seines at volis was granted by the Sultan (Koçu 1960: 2014). Devedjian<sup>24</sup> (1926: 411–434) made an extensive and detailed list of volis in his comprehensive work on fish and fisheries in Istanbul and the Sea of Marmara at the beginning of the twentieth century. He pays special attention to volis in the Bosphorus and the Sea of Marmara, but also mentions some outside of this region, for example five around Görele (ibid.: 434) on the eastern Black Sea coast. A wide variety of rules applied to the around five hundred volis that he lists. The use of some is described simply as *libre pour tous le pêcheurs* or *tous le monde, réservé au propriétaire*, or reserved for inhabitants of a particular village. However, for many others he notes more specific and detailed customary rules (*us et coutumes*). The customary rules for use of the Sténia voli in the Bosphorus are described this way (Devedjian 1926: 413):<sup>25</sup>

The fishing is reserved for seine boats from Sténia and their co-proprietors who live in Kanlidja and Indjir-keuy. It is exploited during winter and summer. Every boat from Sténia pays an annual rent to the proprietors [of the voli]. If the fishers from Sténia or the boats of the proprietors are not present, the boats with seines or beach seines from other places may fish without paying any rent. Fishing by seine boats is decided by drawing lots.

Devedjian's material is supported by other sources. According to Salamone, who recounts the memoirs of Greeks fishers who left the Marmara Islands in the early 1920s, there was (Salomone 1987: 77):

a system of territoriality which strictly defined the areas of the Sea of Marmaras within the vicinity of the Marmaras Islands which could be exploited by each village. The Sea of Marmaras was treated, in other words, as a landed territory within the Ottoman feudal bureaucratic system. Each village received a franchise from the Turkish authorities delineating which 'fishing spots'... could be exploited. ... [O]nly companies from that particular village could fish there.

He notes that ten 'voles' (volis) were allotted to the village of Galmi on the Marmara Islands and that the fishers were not allowed to fish in other villages' volis. Further, Devedjian (1926: 439) writes of the customary right of possessors of volis to destroy any fishing equipment set on the voli. Thus, restrictions placed on access or use of gear were primarily intended to protect the rights of those entitled to exploit the resources rather than the resource itself. Nonetheless, there seems also to have been a general understanding that one should avoid catching undersized fish. In the Sea of Marmara the use of small-meshed hamsi nets was officially permitted all year, but only as long as hamsi were to be seen (Devedjian 1926: 50).<sup>26</sup> This must have been nearly impossible to police. Moreover, there were regulations that stipulated seasonal limits in certain fisheries. These were certainly marginal concerns in a fishery regime in which fish were perceived to be abundant and where taxing was a major state objective.

Thus, a very large share of the fishing activity in Turkey during the Ottoman era was highly regulated, with a wide variety of specific rules of access. The rules were to a large degree sanctioned by the state. A combination of the limited portability of much of the fishing gear and the state's interest in distributing privileges and securing taxes, facilitated a high degree of 'closure' (Pálsson 1991) in the fisheries, especially where levels of activity and profits were high.

## Tax ... and Tax Again

Law, tax, war and the provision of the capital with food and other necessities were the main concerns of the Ottoman State. From the fifteenth century the Ottoman State depended on various forms of 'tax farming', short term contracts with local lords that gained the right to collect taxes on behalf of the Sultan, to fund the bureaucracy and the military as well as to supply the imperial family. Tax farming was a flexible administrative model widely used throughout the empire. All land belonged to the Sultan; local lords usually did not receive hereditary rights to land. Although the state tried several times to introduce direct taxation (to be collected by salaried bureaucrats), more than ninety-five per cent of the revenues collected until the end of the empire came by way of financial consortiums and local notables through tax farming (Quataert 1994: 855).

The state designed policies to ensure supplies of sugar, wheat and sheep for the general populace of the capital. Such policies were apparently not aimed at fisheries (there is no account of such in Devedjian and other sources). There is good reason to believe that the Ottoman administration's primary interest in fisheries was its potential for generating tax revenue, securing followers through allocation of privileges, and, to a lesser extent, providing seafood for the palace. Up

until the Tanzimat a special corps of Muslim seine fishers were responsible for supplying the Sultan's household with seafood (Koçu 1960: 2013; Efendi 1968: 158). The catch from certain dalyans was probably reserved for the Sultan's household (Kömürçiyân 1988: 5; Somçağ 1993/4: 17). Charles White writes: 'All sea and river fisheries are fiscal monopolies; they are farmed annually to the best bidder in each sanjiak (district), generally some wealthy pacha, by whom they are relet to various sub-tenants, under the supreme control of the balyk eminy (inspector of fisheries), who is responsible for the proceeds and police' (White 1845: 90). Salamone writes of the privileged fishing spots around the Marmara Islands that 'the Turkish government only farmed them out by imperial edict for the sake of taxation – and taxation on fishing catch was a steep 20 per cent' (Salomone 1987: 77).

The administration and taxation of fisheries were probably more complex than described above. The State most likely secured income from the fisheries by taxing it in two ways (Somçağ 1993/94). First, many dalyans and volis in the Bosphorus were operated according to a tax farming arrangement whereby the renter paid an annual rent or commission (*mukataa*) in return for privileged usufruct (Devedjian 1926; Koçu 1960: 2013; Somçağ 1993/94: 17).<sup>27</sup> One such tax farming (*iltizam*) arrangement may have included the right not only to farm individual dalyan or voli, but all fishing within a certain coastal region. This tax farming system closely resembles the kind of tax farming applied in the much more important agricultural sector during (at least) the nineteenth century. However, rights to some dalyans, like the Beykoz dalyan, were given as reward (*ödül*) to high ranking military officials (*paşa*) and remained in effect private property through inheritance (Pasiner 1993/4: 545).

The second method of taxing the fisheries was a tax (*rûsum*) on sales in the fish market (Somçağ 1993/94: 117). Soon after occupation of Constantinople, the Ottoman rulers established the Balık Emaneti or Balık Eminliği (Fish 'Trustee' or Control). Its chief, the Balık Emin (Fish Chairman), was connected to the Başdefterdar (Ministry of Finances). The Balık Emaneti had the authority – in accordance with the law on trade – to supervise the taxation of all fish brought into Constantinople. Illegal fishing (and marketing) was regarded as a problem; it implied tax evasion and falling prices at the fish market. Such negative results for both the state (less tax) and the clients of the state who had been granted the right to exploit the fishing grounds were unacceptable.<sup>28</sup>

That the primary interest the fisheries held for the state throughout the Ottoman era was its potential as a source of tax revenue is evident from the following oral reminiscence of a refugee Greek who talks about the Marmaras Island at the beginning of the twentieth century: 'We were a village of three hundred families (Galimi), and we had only one Turk

among us! The only Turks we saw in our village were the ones that the government sent – ‘bureaucrats’, they called them *memoudes*<sup>29</sup> in Turkish, that is ‘government employees’ ... Whoever went fishing had to pay them the tax’ (Salamone 1987: 77). However, it remains unclear whether the village had to pay both this sales tax and a tax for the franchise.

All in all, until the end of the Ottoman Empire, a complex regime of ownership, local usufruct rights to particular seaspaces, and different kinds and rates of taxation were in operation. Devedjian (1926) distinguished, for instance, between volis with privileged access by village(s) and private volis. There were, moreover, three types of privately operated volis: (1) commissioned volis where six to ten per cent of the gross income was paid to the proprietor, (2) rented volis where a set price was paid, and (3) private volis where only the proprietor had access. Furthermore, rather than applying a universal tax regime, the Ottomans designed special rules for each province. While one cannot easily generalize from Constantinople to the rest of the Ottoman Empire, we know that during the sixteenth century the regime for the Trabzon *livası* (province) included a tax (tithe) on the catch of all kinds of fish as well as a transit tax on fish brought into the town of Trabzon to be transported elsewhere (Gökbilgin 1962). During the sixteenth century, tax revenue from dalyans was entered as a separate category in the official registers of Sinop (Ünal 1988: 192). In addition, fishing in the empire’s inland waters was often similarly regulated and taxed (*miri*, tax on state property, of 10–21 %, and 5 %) (Devedjian 1926: Appendix E). While the administration’s ambition may have been to tax all ‘commercial’ fishing within the empire, the state may have had little interest in stimulating change, or ‘development’, in the fisheries. A 1577 *ferman* (Sultanic decree) orders that Muslim fishers without a permit to use *iğrip* (seine) should be forbidden to do so: ‘let them catch fish the way they have always been doing (*kadimdenberi*)’ (Koçu 1960: 2013).

## **Prelude to Reforms: Tanzimat and Public Dept Administration**

Tanzimat reforms were already focused on education in the 1840s; agriculture and other sectors soon followed. During the latter half of the nineteenth century the state began to implement measures, such as supplying substantial credit, intended to develop the agricultural sector in keeping with ideas of economic progress (and not purely for taxation). A state bureaucracy for agricultural development was established and well-paid agricultural ‘controllers’ (*müfettişler*) were appointed to serve in the provincial (*vilayet*) centres. In 1888 the Agricultural Bank (Ziraat Bankası) was established in order to handle the credit afforded to farmers. The

modernization project included investments in transport and educational infrastructure. Like most other regions of the empire, the eastern Black Sea region was also affected by these initiatives. Trabzon had schools for agriculture (*çiftlik*) and milk production. As early as 1871 there were country credit unions (Memleket Sandıkları) in the district of Vakfikebir and other rural areas in the region (*Trabzon Vilayeti Salnamesi 1871 1993*: 227). In 1908 almost 30,000 people in the eastern Black Sea region had loans from the Agricultural Bank (Duran 1988).

Did the state take similar steps to develop the fisheries? One of the official Trabzon Yearbooks (*Trabzon Vilayeti Salnamesi*) from just before the turn of the century notes that ‘we must do like the Europeans and try to profit from the hamsi by putting four or five of them in cans’ (İhsan 1972: 16). Although the idea of developing the fisheries was clearly not alien to the Ottoman bureaucrats, in general this sector does not seem to have caught the attention of the reformers. Compared to reforms in military organization, education, law, science, or even agriculture, reform of fishery policies were a relative latecomer to the catalogue of reforms. After the middle of the nineteenth century the Ottoman State became increasingly indebted to foreign creditors, and by 1875 the empire was essentially bankrupt. In 1881 the Public Debt Administration (Düyûnu Umumiye İdaresi) was established to manage many of the empire’s important sources of income, for the benefit of the foreign creditors and controlled by the major European powers (Zürcher 1993: 88; McCarty 1997: 310). Fisheries in Istanbul and the Marmara region came under the Administration’s control.<sup>30</sup> The first coherent legal arrangement for fisheries was codified early in the regime of the Public Debt Administration (1882, or according to some sources 1879).<sup>31</sup> The new law concerned primarily taxation and the protection of usufruct rights to fishing grounds and was thus an ‘inscribed’ collection and record of existing formal and informal practices.

In the early 1890s the Public Debt Administration brought in the fishery expert de Bellesme to undertake studies with the intention of developing the fisheries (Kazgan 1983: 710). However, the recommendations of this expert were not put into practice. Devedjian was one of the directors of the Istanbul Fish Hall, and his study was commissioned, ratified and first published in Ottoman by the Public Debt Administration in 1915 (Koçu 1960: 2037). In his introduction to this first edition<sup>32</sup> Devedjian articulates objectives beyond taxation when he writes that ‘if the Turkish fishers had been enlightened about the progress that had been realized other places, and if they had possessed modern equipment’, they would easily have caught fish that they were at that time unable to catch. This, he stresses, would have secured for the country a considerable amount of food, objects of trade and income every year. He laments the lack of fish processing industries that could satisfy the European taste (very expensive canned

tuna was imported to Constantinople from Europe) and provide the country with important income.

The extensive mapping of current practices in Devedjian's book, the fishery law, as well as the compilation of Trabzon Province yearbooks between 1869 and 1904, should probably be understood as attempts by the modernizing Ottoman state and semi-colonial foreign powers to codify practices in order to develop and modernize them. The interest of the Public Debt Administration in fisheries did not differ markedly from that of the Ottoman administration. Although the (unrealized) strategy of the Public Debt Administration may have included intervention in the practice and structure of the fisheries, such intervention was probably done with the view of increasing their own revenue. Fishery taxation was likely not very different from earlier arrangements,<sup>33</sup> the main distinctions being that the Public Debt Administration, not the Ottoman State, was at the end of the tax chain, and that they were possibly more effective in policing the tax regime.

## Republican Statism: Lofty Ideals

After the war of independence and the Lausanne treaty (1923) with the European powers, the fisheries administration set up in Istanbul by the Public Debt Administration was taken over by the Turkish Republic's Ministry of Finance (Koçu 1960: 2011).<sup>34</sup> The new Turkish leadership and administration showed a striking determination to intensify the reforms across Turkish society. But was there a new policy concerning the fisheries? Little information is published concerning developments in the fisheries from the establishment of the Republic through 1950. However, it is fairly clear that the new administration, at an ideal level at least, had a different approach to the fisheries than their Ottoman predecessors. In the mid 1930s there were plans for a new fishery law and the establishment of a Fishery Bank (*Tan Gazetesi* 1936; *Akşam Postası* 1938). An Austrian envoy to Turkey, who seems to have worked as an adviser of sorts to the Turkish government during the early 1930s, surveyed and evaluated the government's efforts in many sectors of the Turkish society, among them the fisheries (Ritter von Kral 1938: 81, italics omitted):

A legal regulation of the Turkish fisheries is planned, which requires detailed preliminary studies. In the meantime provisional measures have been taken to mitigate old evils; for example, abolition of the fishing-tax which had long been felt as an imposition, reduction of duties on tackle and accessories, promotion of sales by increasing the manufacture of canned fish and the consumption in military barracks, public services, schools, etc. In the meantime a decree was drafted to reorganize the entire fisheries law. It contains modern regulations as to admission to the fishery trade, the manner of practicing it, the close-season, the prohibition of the use of explosives,

working conditions, union questions, etc. The material conditions of the fishermen are to be improved by the elimination of middlemen, by a revision of their relations to the lessees and wholesale traders and by the foundation of a Fishery Bank.

Ritter von Kral goes on to note that discussions were held in Ankara between government representatives and parties interested in fisheries, and concludes that '[i]t will thus be seen that the Turkish fishery trade, which procures work and livelihood for many thousands of men and is of the greatest significance for the nutrition of the people, is well on the way to being modernized' (Ritter von Kral 1938: 81).

One can conclude that the new administration's ambitions and plans for fisheries implied a radical break with the existing fishery regime. These ideals were probably greatly influenced by the radical 'statism' ideals of the nationalist-communist *Kadro* ('cadre') movement that led the ideological-political debate during the early 1930s. Yet, partly because of the indecisive and inconsistent approach of the bureaucracy, most of these lofty plans were never implemented (Karaömerlioğlu 1998). After a period of growth in the fisheries during the latter half of the nineteenth century, there seems to have been a general decline during the early Republic.<sup>35</sup> The state's neglect of fishery policy reforms during the early years of the Republic grew, most likely, from economic stagnation coupled with efforts to establish independent industrial production in more important sectors. There was, in effect, little change. Not even the commercial potential of the dolphin fishery in Sürmene was acknowledged by the state. Rather than abolishing the fish trade tax in the 1930s, as had been suggested by Ritter von Kral, the state more likely only reduced it. In 1928 the tax on fish sales was eleven per cent in Trabzon (Ihsan 1972). In the years around the establishment of the Republic some fish sales taxes were even increased (Devedjian 1926: 441, 445).

We can blame the lack of effective state policies and economic stagnation in the fisheries from 1920 to 1950. However, the pervasive assertion is that the stagnation can be ascribed to the departure of the Greek population. In her study of *The Fisherman's Problem in the Marmara Sea*, Leyla Taner (1991: 83), who relies primarily on Günlük (1983), claims that '[a]fter the Independence War ... exchange of Greek and Turkish population between Greece and Turkey have swept away the fishing sector.' In public perception as well as in historical sources, the association between fish and Greeks keeps popping up. Many claim, even contemporary Turkish fishers themselves, that the Turks learned the art of fishing from the Greeks. It seems to have been a common conception among European travellers and commentators from the turn of the nineteenth century that fishing and seafaring was yet another occupation that the 'Turks' didn't have a liking for or competence in (see, e.g., Hamilton 1984: 284; Aflalo 1911). In contemporary writings by both Turks and Greeks the views of the

Europeans are reiterated (Günlük 1983; Kuban 1996: 306; Kulingas 1988; Salomone 1987; Terzis 1997).

I believe it would be far too simplistic to regard the fishing sector as purely 'Greek' before and during the Ottoman era, to be succeeded by 'Turks' only after the revolution and population exchanges. Muslims were clearly fishing long before the Greeks left. Although the degree of separation along lines of religious-ethnic background within the fishing sector appears to have varied over time and from place to place, fisheries have probably been the business of a mixed population during the Ottoman centuries. Undoubtedly, the Turks can be said to have learned fishing from the Greeks. The contemporary language of fishing contains to this day a fundament of Greek. But this applies to the entire eastern Mediterranean and northern Africa as well as the Black Sea region (Kahane et al. 1958: ix). Fish terminology, and especially fishing terminology – such as that presented in Devedjian's book – was, and still is, a mixture of Greek and Turkish.

All in all, it is difficult to get a clear picture of the Ottoman fishing population, even in Constantinople. There may have been considerable continuous flux and change throughout the centuries. Furthermore, the Greek presence in Istanbul fishing continued for some decades after the revolution and population exchanges since the Greek population of Istanbul was left out of the population exchange (*mübadele*) with Greece in the 1920s. In 1934 the total Greek population (both Turkish and Greek citizens) was still as high as 100,000, making up approximately one tenth of the population of Istanbul (Millas 1993/94: 365). This number remained stable until the mid 1950s (Mansel 1995: 424) and Greek fishers who were involved in small scale-fishing intermingled with Turkish fishers for decades after the population exchanges.<sup>36</sup>

In the Black Sea region, however, the Greek presence came to a more abrupt end with ethnic conflict and expulsion of the Christian populations in the years before the War for Independence. There is evidence of Muslim fishers in Trabzon at an early date (Lowry 1981: 84) and Muslims/Turks from the eastern Black Sea region have for centuries been deeply involved in fisheries and seafaring (Şen 1998: 235). The Black Sea Turks' competence in fishing is also attested to by the fact that it was primarily Black Sea Muslims who took over the fishing activities of the Greek fishers in the upper Bosphorus. Muslims from the environs of Rize, in particular, fleeing from the Russian occupying forces in 1916,<sup>37</sup> settled in Rumelifener and Poyraz, both close to the northern mouth of the Bosphorus.

Thus, I cannot agree with Taner's assertion that the fishing sector in Turkey was swept away with the population exchanges after the War of Independence. Although the republican revolution and the population exchanges temporarily reduced the population of experienced fishers and brought about a restructuring of the fisheries, there is insufficient evidence

to suggest that it amounted to a complete break with the past. Quite the contrary. The purse-seine technique (*gırgır*) was first developed by fishers in the Greek-Armenian community in Kumkapı (in Istanbul) around 1885 (Devedjian 1926: 333). Yet, the knowledge of the *gırgır* clearly survived the War of Independence and Greek emigration since it soon afterwards came to be the preferred gear among (Muslim) fishers in Istanbul and the Black Sea.

Instead of regarding fishing and seafaring as something inherent to the 'Greek people', it may be wiser to consider the multicultural Istanbul and Marmara region as the centre of seafaring, fishing, and seafood cultures of the eastern Mediterranean region. The decline or lack of development in the fisheries prior to 1950 might equally be ascribed to a general stagnation in the population and the economy of Istanbul as to the emigration of the Greek fishing communities. The loss of its status as the centre of government to Ankara and a general economic decline meant that people left Istanbul. The upper classes were shrinking and Istanbul was becoming 'poor and provincial' (Mansel 1995: 424). There might simply not have been a market to allow for any substantial expansion in the fisheries during this period. Average per capita consumption of seafood in Istanbul was a mere 5.3 kg during 1939–1948 (currently at 16 kg per capita) and approximately half of fish catches landed in Istanbul were consumed outside of the city.<sup>38</sup> Bonito, important food for the poor during the difficult war years, made up approximately half of the seafood consumption in Istanbul. In the book *Boğaziçi Konuşuyor* ('The Bosphorus Talks'), Câbir Vada<sup>39</sup> does not attribute the lack of development in the fisheries to the emigration of the Greeks. Although he laments the stagnation (*durgunluk*) in the Istanbul fisheries, he writes that it had been like that for at least sixty years. 1950 may, therefore, be regarded as a more important watershed in the history of the Turkish fisheries than the emigration of the Greeks in the early 1920s.

## **Fisheries on the Development Agenda**

After the Second World War important changes took place in the political and economic situation of Turkey. There was increasing international and domestic pressure for democratization and multi-party politics, which meant that parties started to compete for votes. The main contender for power, the Democrat Party, argued for a more liberal economic policy. At the same time, Turkey came within the scope of the Marshall Plan. Between the World Wars the government, aiming at self-sufficiency and economic independence, had given highest priority to the development of heavy industry and the construction of a network of railways. In 1947 the government, still in the hands of the 'Atatürkist' Republican People's

Party (CHP, Cumhuriyet Halk Partisi), drew up a new development plan that emphasized free enterprise, the development of agriculture and agriculture-based industry, and the construction of roads. With American Marshall Plan aid, important new roads were built – for example the Samsun-Trabzon road – and large investments were made in the agricultural sector – with tractors as the chief instrument and symbol (Zürcher 1993: 226).

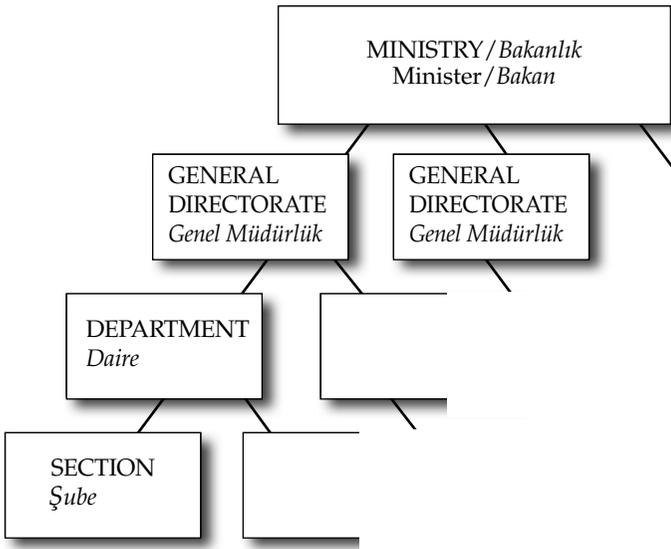
The new development priorities with their emphasis on agriculture also encompassed fishing when, in 1947, the Ministry of Economy saw the economic potential of this sector. Between 1949 and 1961 the Marshall Plan contributed U.S.\$47,000 to Turkish fisheries (Tören 2007). In 1950 probably in an effort to win votes a month before the parliamentary election, the state tax on fish catches was removed.<sup>40</sup> A number of other initiatives to develop the fisheries quickly followed one upon the other.<sup>41</sup> Social policies, on the other hand, did not change appreciably; unions remained illegal. Contrary to the Kadro ideals of eliminating the middleman, no serious attempt was made to check the power of the fish *kabzımal* (wholesale trade commission agents) over the fishers.

In 1952 the semi-autonomous Meat and Fish Foundation (Et ve Balık Kurumu, EBK) was founded within the Ministry of Economy. The goal of EBKs activities were to organize, plan, produce, distribute and research meat and fish resources. The institution received substantial economic assistance from the Marshall Plan and a few years later the EBK commanded a fleet of no fewer than twenty-one boats for various purposes (fishing, research and so on) as well as cold storage facilities in approximately twenty urban centres. The EBK established several fish processing plants, among which was a fish oil and meal factory in Trabzon (1952) that initially processed mostly dolphin oil (Yıldırım 1990: 518). During the 1950s EBK cooperated closely with the FAO and fisheries experts from USA. During the 1950s many studies were undertaken and reports written – often as cooperative projects between Turkish and foreign scientists (Bilecik 2003; Çelikkale et al. 1999). Authorities took initiatives also at regional levels. At a conference in Trabzon in 1952 where the issue of ‘progress’ in the province was discussed (Trabzon Vilayeti Kalkınma Kongresi 1952), fisheries was explicitly selected as a sector to be developed.

Credit for investments in fishing technology was made available from 1953–54 onward from the ‘General Directorate for Agricultural Credit’ along the same basic lines as for agriculture. In 1955 the first fisheries statistics were collected and from 1967 were produced annually on the basis of questionnaires (Acara et al. 2001: 124). The state also started to build several new large protected harbours along the exposed Black Sea coast and promoted the establishment of fishery cooperatives. Yet the flood of initiatives during the early 1950s soon lost its impetus. Towards

the end of the 1950s the EBK initiative to develop the fisheries dissolved when financial support was withdrawn (Bilecik 2003). Despite various state-lead initiatives during the 1950s and, to a lesser extent, 1960s to develop the fisheries, there was no significant increase in fish catches.

Some years later, fisheries were included in the five year plans, which were drawn up from 1963 onwards, with entire volumes devoted to 'water produce' (*su ürünleri*) in the VI Plan (Acara et al. 1989), VIII Plan (Acara et al. 2001) and IX Plan in 1989, 2001 and 2006 respectively. All in all, however, the 1960s saw fewer initiatives in the fishery sector. In 1971 the old fisheries law (*Zabıta-i Saydiye Nizamnamesi*) from 1879 was finally replaced by new 'water produce' legislation, after several drafts had been rejected by the parliament during the 1950s (Çelikkale et al. 1999: 290–1). At the same time the responsibility for 'water produce' (as the fisheries were hereafter called) was transferred from the Ministry of Trade (*Ticaret Bakanlığı*) to a newly established General Directorate for Water Produce (*Su Ürünleri Genel Müdürlüğü*) within the Ministry for Agriculture (see Figure 3.2 for the organizational structure of the Turkish bureaucracy). This General Directorate established ten regional water produce directorates. The ministry started to draw up and distribute annually a set of regulations for the 'harvesting (hunt) of water produce in the sea and internal waters for commercial purposes' (*Denizlerde ve İçsularda Ticari Amaçlı Su Ürünleri Avcılığını ... Sirküler*). Since 1976 credit and grants have been distributed from a water produce branch (*Su Ürünleri Kredilendirme Müdürlüğü*) within the Agricultural Bank.



**Figure 3.2. Bureaucratic structure.** Simplified model of the hierarchical structure within a ministry.

## Marine Science

In an article entitled 'The Importance of Fisheries in the Feeding of our Population', a researcher calls for a strengthening of fishery research in Turkey (Baysal 1969: 77):

Without knowing the results of research it is impossible to reach any favorable outcome from efforts aiming to give direction to the fisheries, in other words it is almost impossible to carry out fishery policies. In all countries research institutions show the way to those who administer fishery policy so that the measures taken will be advantageous. In Norway, for example, there has been continuous research for 60 years, all problems have been solved and fisheries are now part of the normal planning process.

Compared with many European states, including Russia who early established marine research stations on the Black Sea, marine science had a late start in Turkey. Prior to 1950 there were a few initiatives within Istanbul University (prior to 1933 this was named Darülfünun). These efforts were directed towards investigations of marine life forms. Within the Public Debt Administration a few initiatives were also taken to investigate fisheries. Scientists from various European countries played a significant role in these efforts (Bilecik 2003). Due to limited resources however research was very restricted and there was little academic continuity.

The trajectory of contemporary Turkish marine research originates with the Hydrobiology Research Institute (Hidrobioloji Araştırma Enstitüsü) at Istanbul University. The Institute, which EBK helped to finance, was established in 1951 under the leadership of Professor Kosswig, a German who had fled the Nazi regime in 1937. He was the prime motor in Turkish research on marine life forms until he returned to Germany in 1955. In addition, many foreign fishery experts visited Istanbul during the 1950s as part of the Marshall Plan and various FAO initiatives as well as a Turkey-Japan cooperation framework (Bilecik 2003: 43–52). EBK started their own Fishery Research Centre in Istanbul in 1955 and initiated the publication series *Balık ve Balıkçılık* ('Fish and Fisheries'), partly in collaboration with the Institute. The research activities of EBK and the Hydrobiology Research Institute levelled off during the 1960s. With the reorganizations in higher education after the coup in 1980, the Hydrobiology Institute in Istanbul was closed down, and its resources transferred to the 'Water Produce College' which was established as a branch of the Ministry of Education in 1973, but affiliated to Istanbul University in 1983.

During the 1960s and 1970s various smaller research units started within the Ministries. The activities of these various research bodies were pooled and strengthened in 1984 with the establishment of state water produce research institutes (Devlet Su Ürünleri Araştırma Enstitüsü). During the 1980s many more Water Produce Colleges (Su Ürünleri Yüksek

Okulu) were established within major universities. Most of these have since evolved into faculties or departments that provide degrees at both MSc and PhD levels (Ergüven 1983; Acara et al. 1989: 172–3; Özbey 1989). In 1999 water produce research in Turkey consisted of three state institutes and seventeen departments or sections at universities. At these university departments and faculties alone around five hundred academicians were employed in 1999 (Çelikkale et al. 1999: 316). Moreover, several university biology departments are currently involved in marine research. Thus, development in Turkish water produce science has since the early 1950s been intimately intertwined with state initiatives in the fishery sector. As indicated by the citation above, marine science was, especially during the 1950s and 1960s, regarded by the elite as a prerequisite for development and growth in the fishery sector.

## **Development Ideals: Production and Proteins**

One day in 1991 an old small-boat fisherman told me about fishing in bygone days. We were sitting on the sand among the small fishing boats and looking across the harbour at the large fishing boats and the factory of the Çarşıbaşı cooperative. I asked him whether he had been a member of the cooperative. ‘No, that’s not my business (*işim olmaz*),’ he replied. ‘The cooperative is only for the owners of the large boats (*mal sahibleri*, ‘proprietors’),’ and added, ‘They call it the *water produce* cooperative. We used to say *fish!*’

In the Republican era the state’s approach to fisheries had become framed within a new discourse, a framing that was indicated in Devedjian’s work but only reached its ‘mature’ form and actually guided policy efforts after 1950. Since the 1950s the discourse about production (first *istihsal*, later *üretim*), proteins, modernization, development, progress (*kalkınma*), technological development, and the exemplars of Europe and Japan, has been pervasive throughout fisheries science and management in Turkey. For instance, there seems to be almost a template for the introduction to Turkish fishery texts. This template is adhered to by state personnel within the bureaucracy as well as by many scientists. Various permutations of this basic model can be found in the introductions to many different texts, including reports from the State Research Institutes (e.g., TFRI 1992); symposiums on water produce (e.g., Agricultural Bank 1982); planning documents (e.g. Acara et al. 1989; Acara et al. 2001); and to some extent in scientific papers (e.g., Düzgüneş and Karacam 1991). One example of adherence to this template is the table of contents of the first substantive chapter in a textbook on ‘Fishing and Catch Technology’ (Sarıkaya 1980):

## II. THE STATE OF WATER PRODUCE IN THE WORLD AND IN TURKEY

1. The general state of water produce in the world
2. The state of water produce in Turkey
3. A comparison between our country and countries which are developed with regard to water produce
4. The importance of water produce from a nutritional perspective
5. The water produce policies in Turkey
6. The catch modes (*şekilleri*) for water produce

A second example is an extract from the opening speech made by the head of the Foundation for Economic Research (İktisadi Araştırmalar Vakfı) for a panel discussion organized in 1988 on the topic of hamsi fisheries in the Black Sea. The speech was made at a point when the hamsi fisheries had seen their longest sustained increases in catch (Dikmen 1988: 7):

Actually, fishing is one of the undeveloped (*gelişmemiş*) activity sectors of the Turkish economy. Its share of the GNP does not even reach half a per cent. The annual catch of fish does not even amount to 600,000 tons. Per capita production is 10–11 kilos whereas consumption [only] totals 8–9 kilos. In countries like Norway and Japan where fisheries are developed, the per capita production and consumption amount to six to seven times these figures.

These two examples illustrate several characteristics of the Turkish modernizing approach.

First, the Western scientific-technological approach came to be seen as a guiding star at the expense of an appreciation of contemporary 'traditional' technology and organization. Fisheries was seen as an undeveloped (*gelişmemiş*) and primitive (*ilkel*) sector to be transformed – in terms of technology, organization, profile of consumption – in the image of a modern, Western prototype, and, notably, not a Russian/Soviet prototype. In the 1930s the Soviet Union developed a modern fishing fleet in the Azov Sea and the Black Sea, organized as state-directed collectives (*kolkhoz*), which regularly caught far more fish than the Turkish fleet (Knudsen 1997; Knudsen and Toje 2008). Yet, despite their 'production' success, they were discredited, like all Soviet models after 1950, because they were 'communist'.

Secondly, developing the fisheries was, and, to a certain extent, still is, considered by many within the state bureaucracy to be a national mission or duty (Özbey 1989: 5).<sup>42</sup>

In conclusion one may say that – as one may also understand from the historic development to the present – it is a national task and necessity to put into operation as rational, scientific and economic a management as possible in the administration of this issue and in finding solutions to the problems that the fisher, the producer and the industrialist face in their use of the products of our seas and 'internal waters' – these waters that shall become our future food depot.

Third, concepts such as per capita consumption and ‘production’ (*üretim*) are central to gaining an understanding of the bureaucratic approach to the fisheries. Fisheries emerged, or was created, as a sector to be mapped, manipulated, calculated and researched; a sector contributing to the ‘economy’ of the national state, not to the tax revenue of a ‘backward’ state. The whole apparatus of ‘modern’ and ‘rational’ economic measurements and policies was mobilized to work on what now emerged as a ‘sector’.

Fourth, one further quality was added to the discourse when fisheries administration was ‘agriculturalized’. With the passing of the new law in 1971, and the transfer of responsibility for fisheries to the Ministry for Agriculture, ‘water produce’ and ‘production’ (*üretim*) replaced ‘fish’ (*balık*) and ‘catch’ (*av*) in the state approaches to the sector. ‘Proteins’, ‘food’ (*gıda*), (human) ‘population’, and aquaculture became important topics and concerns. The concept of ‘water produce’ was only mentioned before 1970 in connection with the draft law. In an edited book on Black Sea fisheries and water produce cooperatives (Çakıroğlu 1969), prepared by the Ministry of Trade (Ticaret Bakanlığı) that was at the time responsible for fisheries, ‘water produce’ is occasionally mentioned. Overall, however, the various authors write about ‘fish’ production, ‘fishery’ cooperatives, and so forth. The Ministry of Trade in 1968 prepared a report entitled ‘Report on Turkish Fisheries’ (*Türkiye Balıkçılığı Hakkında Rapor*). Yet, after 1971 the new vocabulary spread surprisingly rapidly and soon became ubiquitous. In the official Yearbook of Trabzon Province 1973 fisheries are discussed over (only) one fourth of a page under the heading ‘water produce’, as a subsection of husbandry within the sixteen page chapter on agriculture. In place of writing about ‘catches’, the fishery statistics started to list ‘production’ of the different kinds of marine and fresh water animals (though this is rendered as ‘catch’ in the English translation).

Most scientists adopted the new usage in their publications, and the universities started to train ‘water produce engineers’. The water produce bureaucracy has until recently primarily employed agricultural engineers even though water produce engineers have been trained since 1973 (Bilecik 2003). Agricultural engineer is a type of training that has long been important and widespread in Turkey and most of the first generation water produce (or marine) scientists also received their degrees in agriculture, or sometimes aquaculture. In water produce research there is a significant focus on and resources allocated to fish farming<sup>43</sup> and ‘internal waters’ (rivers, lakes and so forth). While there are three (small) water produce research institutes in Turkey, there are almost sixty state research institutes conducting research on agriculture or husbandry. The Tea Research Institute in Rize opened in 1924 (Özdemir 1983: 266, 272–3), long before tea had become an important cash crop, while the first water produce research institute (in Trabzon) was not established before 1987.

How easily and willingly scientists changed their vocabulary to the new context and how suffused the water produce bureaucracy and marine science became with agricultural engineers indicate, I think, how strongly marine scientists, also at universities, have been connected to the state and its policies.

Fifth, the examples above indicate that the attention to 'produce' and 'production' in state policy is bound up with a concern about the citizens', or the subjects', diet. Many policy documents<sup>44</sup> and academic texts refer explicitly to protein deficiency in the diet when arguing for the development of the Turkish fisheries. The Republican bureaucracy had gradually become concerned with the nutritional composition of people's diet.<sup>45</sup> This was already evident in the days of Atatürk when, for example, he emphasized the importance of sugar production so that 'healthy children will not be a utopian ideal' (Alexander 2002: 74). This was a new way to 'treat' food, framed by a new discourse of scientific rationalization, once more modelled on Western templates. The state developed a nutrition policy that included nutritional education especially directed towards children since 'most of our people are not knowledgeable about nutrition' (Tezcan 1982: 130–131).

Together these five aspects seem to articulate a version of what James Scott (1998) has termed 'high modernism', a 'strong version of belief in scientific and technical progress'. Although not acknowledged by Scott, in Turkey, especially during the statism years and in the Kemalist ideology, we find an archetypical instance of high modernist ideals (Bozdoğan 2001). The focus on a national mission of stimulating the economy, raising production, and providing the population with proteins is indicative of, and was made possible by, a general shift in what the elite classes saw as the role of the state elite in society: agents of a radical restructuring of society. In contrast to the classical Ottoman state elite, the new Republican elite envisioned complete societal restructuring as the path to arrive at some ideal modern Turkish nation state. It had become the responsibility of the state not only to show concern about people's 'way of living', but also to authoritatively guide this. The state became increasingly concerned about its subjects' welfare, lifestyles and capacities. In order to reach the new goals, the people, especially the villagers, had to be guided and educated in line with rational scientific knowledge.

In employing the tactics of governmentality on the level of economy, Foucault writes, the family becomes an instrument rather than a model, and statistics the tool when considering the population at large (Foucault 1991: 101):

[P]opulation comes to appear above all else as the ultimate end of government. ... [It] has as its purpose not the act of government itself, but the welfare of the population, the improvement of its condition, the increase of its wealth, longevity, health, etc. ... The new science called political

economy ... is accompanied by the formation of a type of intervention characteristic of government, namely intervention in the field of economy and population.

This analytical model has primarily been used to address the historical development of European states. Mitchell (1988) has argued, however, that many of the more radical tactics of governmentality were actually first implemented in the colonies, and in a similar vein, Mintz (1985) regards the old colonial world as a 'laboratory of modernity'. Yet, the distinction between a state based on sovereignty and one concerned with governmentality has also been fruitfully employed to analyse the changes within the Ottoman and Turkish states. In an essay on modernity, religion and the Ottoman and Republican state, Nalbatanoğlu (1994) notes that, contrary to the classical Ottoman 'art of statecraft' regime, 'population' was a calculable 'standing reserve' within a new 'science of politics' in the early Turkish Republic. But, there was no sudden change from sovereignty to governmentality with the establishment of the Republic. A change towards governmentality had been under way since the early nineteenth century. The first effort to quantify population came with the 1830 census. In the era of the Tanzimat reforms (1839–1871) the central government assumed responsibility for education, health and sanitation, all of which had previously been in the hands of the religious institutions (foundations) and local communities. Thus, inspired by European models as well by the success of Mehmet Ali's reforms in Egypt, the Ottoman state began to change its focus from territory to human resources and developed new powers to affect the day-to-day life of people. In this process the Sultans and the governments paid a great deal of attention to the 'power' of statistics as a means of obtaining information about the population (Karpas 1992).

In general, 'governmentality' started earlier in the Ottoman Empire than in many other 'non-European' areas of the world. Note, however, that this change towards governmentality took place well before the development of Turkish nationalism and the idea of 'one (Turkish) people'. The idea of 'governing a population' came chronologically before the idea of 'legitimacy based upon representing a people' (in other words, nationalism). Nonetheless the instruments that the late Ottoman State developed to influence the population, especially education and statistics, became important tools in the nationalist project of the Young Turks (1908–18) and Kemalists. When these instruments were combined with the development of indigenous social sciences from the end of the nineteenth century (Karpas 1992), a far more penetrating process of social engineering became possible. It was not just that science was seen as the best guide in improving technology; policy itself was being 'scienticized'. Social science played a prominent role in the reform process and legitimated a macro perspective on society and ideas of social change that focused on plans and

projects, not on any 'inherent' dynamism of development (Mardin 1997a). The new Republican state elite went much further than those of the late Ottoman Empire in envisioning a 'new' society, an ideal nation, and new kinds of men and women to populate it. The elite went so far as to design policies that were directed at reshaping the subjects' selves. In one sense it is possible to say that the new regime was more populist; on the other hand, it was also quite paternalistic (or Jacobin).

What about fisheries? The first attempts at 'governing' them beyond taxation were taken by the semi-colonial structure of the Public Debt Administration, first by 'unimplemented' recommendations of the foreign expert de Bellesme in the 1890s. Somewhat later, the meticulous work by Devedjian exemplifies the general tendency of trying to map, register and quantify 'what there is', not only for taxation purposes, but in order to be able to stimulate economic development. A report prepared by the Istanbul Chamber for Trade and Industry in 1924, just after the establishment of the Republic, notes the 'need for development': fishermen ought to become enlightened, fisheries should be guided by natural science and technology modernized (ICC 2006: paragraph 26). In the statism years up until 1950, high modernity ideals concerning fisheries development were articulated, but not implemented. When the state finally started to implement fishery policies from 1950, and especially from the early 1970s, it did so to a large extent in accordance with the new idealistic plans and aims designed for the fisheries and at great financial cost. Rather than securing income through taxes, the new fisheries policies (especially from the 1970s onwards) became a drain on the state's economy through subsidized credit, grants, investments in infrastructure (harbours, cold storage halls), research and bureaucracy. The new Water Products Law stipulates that the total level of taxation on fish sales may not exceed three per cent and is only to be collected by the municipalities.<sup>46</sup> The priorities of this new policy comes out 'crisp and clear' in the 2001 report from the State Planning Organization where it is stated that 'in order to raise a healthy generation ... the water produce tax rates should be decreased so that the consumers can buy water produce more easily' (Acara et al. 2001: 113).<sup>47</sup>

Most of the instruments, or tactics, employed to work on the fisheries have already been mentioned. They include statistics, the model exemplar organized by the state (the EBK initiative), establishment of cooperatives, education of the fishers, establishment of a fishery bureaucracy, extension of credits and grants, codification of laws and regulations, design of short- and long-term plans, arrangement of symposiums and conferences, stimulation of water produce science, and investments in physical infrastructure. All of this is new. Before 1950 these were imaginable and desirable, but were yet to be put into operation.

Of these new tactics, science has attained an instrumental position. Ideally, as expressed in the citation on page 57, the other tactics follow the

lead of the sciences. At a large conference concerning the Black Sea a leading marine scientist addressed the audience: 'As everyone knows, the Black Sea is now exhausted (*yorgunmaktadır*) by a range of problems. How can we find answers, solutions, to these problems? *Who* is going to give the answers? Those who know (*tanımak*) the Black Sea very well, the *scientists* of the Black Sea countries, will provide the answers.'<sup>48</sup> The developmental ideals for the fisheries have been instrumental in instilling in the bureaucrats, managers and scientists the idea of a decisive break between past traditions and new developments. Indeed, the very existence of marine sciences as a profession in Turkey has been a result of state-initiated reforms. Marine scientists have, at least at the ideal level, subsequently been entrusted with the role of custodians of progress (and recovery) in the fisheries.

Although there had been some biological research on marine life at Istanbul University during the early Republic, a Turkish science of sea, fish, and fisheries started to develop and grow only when the state, together with foreign support, launched its initiative for developing fisheries. The sciences were part and parcel of this mission, and except for the impressive efforts of Kosswig there seems to have been little independent academic drive towards the development of marine sciences. During the 1950s the institutional linkages between the semi-autonomous EBK and the scientific communities were evidence of and speak to the role of science as an agent for development. However, although the water produce research and education sector has since become fairly large and the university sector is formally independent of the executive branches of the bureaucracy, the position of 'scientist' (*bilim adamı/insanı*) is seldom considered an independent and purely academic position. For most scientists and certainly for the 'man on the street' (or at sea) in Turkey, a scientist is first and foremost a state employee, a *görevli*, working on tasks assigned to her by the state. Of course there is some individual variation as to how scientists themselves perceive their role and their relation to the state, but the idea of the scientist as a state representative, a spearhead in the national civilizing project, is indeed widespread. Thus, there is often little difference between scientists and state bureaucrats, the former are simply seen as one kind of state bureaucrat (*devlet memuru*). The frequent movement of persons between positions in the ministries, the state research institutes and the university departments reinforces this impression.

## Unfulfilled Ideals

High modernist ideals have been influential in many modernizing states. But their influence varies by the degree to which the ideals have been transformed into plans and programs and implemented as practical policy.

Furthermore, as it is Scott's main concern to demonstrate, many of these high modernist ideals, when transformed into grand state projects, have not been successful. Foucault (1977) concedes that the tactics employed in a state-guided disciplinary society, exemplified by the change from punishment to reform as methods of social control, did not have the intended effect; the tactics did not work on the subjects, not as intended anyway. This has clearly been the case of many larger reform projects in the Turkish Republic, for instance the attempt to 're-dress' the people. The effort to work on people's bodies and tastes, gender and family relations, by banning the veil and prohibiting 'religious' dress for university students and public employees has been met by widespread resistance (Özdalga 1998; White 2002; Navaro-Yashin 2002; Saktanber 2002; Göle 1996). It has even been one of the rhetorical vectors that recently brought some of those that articulate this resistance into government office.

When it comes to the state schemes for reform of the economy there has been less public controversy, even though some of these programs penetrate deep into local social organization. The Turkish state implemented many far-reaching reforms in the agricultural sector and established a high degree of control or influence over the production and distribution of many kinds of produce. While agriculture was the main tax base for the Ottoman state, the state schemes in agriculture have made it one of the main burdens of the Turkish Treasury. The production of important crops such as sugar, tea and tobacco has been administratively controlled through state-owned enterprises, and sixteen Agricultural Sales Cooperative Unions, formally apex organizations of farmers cooperatives but effectively controlled by the government, have a strong influence over the organization of production. They also have had control over the procurement of the produce at prices fixed annually by the government (World Bank 2000). These policies have to some extent been reversed since the early 1990s with the IMF-sponsored structural adjustment policies.

In practice the state has not intervened to the same degree in the social organization of the fishing sector, except for its attempt to establish cooperatives. Yet a national union of water produce cooperatives was not established until 2004, formally because the fishers could not match the legal requirement for the seven regional associations of cooperatives. The water produce cooperatives have mainly been instruments for distributing credits and have had only very insignificant roles in organizing production and distribution (see Chapter 9). While the state personnel at district level generally include one or more agricultural engineers, none – not even among the district authorities in Çarşıbaşı, one of the more important fishing communities – have responsibility for water produce. Furthermore, as is the case with fishery administration in many developing countries (Hersoug 2004: 47), the state's ability to initiate concerted, integrated and planned action has been hampered by an

increasing degree of institutional branching, both of the bureaucratic units within the ministries and of the research sector.<sup>49</sup> The General Directorate for Water Produce was dissolved in 1984 and its tasks distributed to several other units within the Ministry of Agriculture.<sup>50</sup> The various departments and sections within the Ministry of Agriculture and Rural Affairs do not share a common perspective or policy on fisheries. In addition, still other units are responsible for tasks such as planning and grants (State Planning Organization), licenses (Under Secretary for Maritime Affairs), registration of boats (Harbour Chiefs), and credit (The State Agricultural Bank).<sup>51</sup> The lack of cooperation between these institutions echoes the situation elsewhere in the state bureaucracy. The activities and policies of the institutions responsible for state-administered sugar production, for example, can at times be disparate and competitive (Alexander 2002).

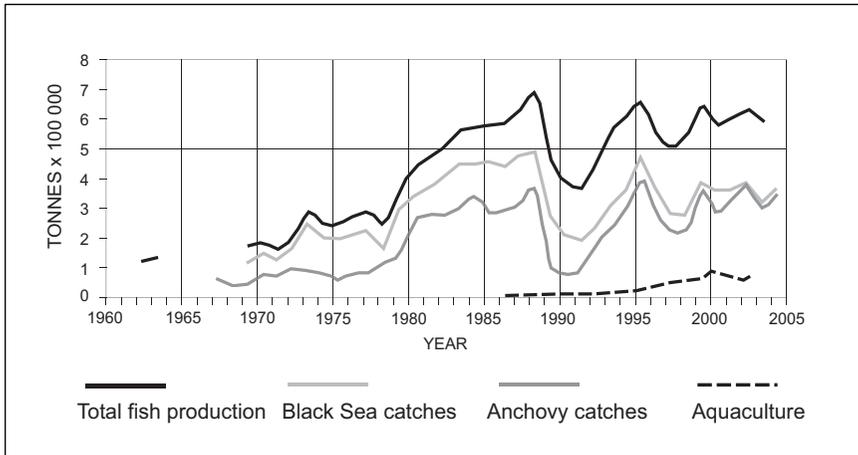
Thus, the structure and activities at the institutional level fail to mirror the conceptual framing of the fisheries as one sector of the national economy. This lack of institutional integration, especially the lack of a Ministry or General Directorate for fishing, is seen by many familiar with the sector as the main reason for various problems in the fisheries. However, this perception is based on different premises: fishers complain about the lack of a powerful and just state that can implement and police laws, while the bureaucrats lament the lack of the panoptic view, the all-seeing integrating gaze. Recently, this lack of integration has also been identified by the EU as one major obstacle for aligning Turkish fishery policy with EU Common Fishery Policy (Knudsen, Pelczarski and Brown 2007). The situation in Turkey is, however, not unique. In developing countries fisheries administration is often placed in the Ministry of Agriculture 'with weak scientific and administrative competence, unclear lines of command and limited funds for the transport needed for control and surveillance' (Hersoug 2004: 47).

There may be several other reasons that the state has provided less 'guidance' to fishing than to most other 'sectors' that the state bureaucracy has identified. First, production and distribution of fish was only penetrated at a late date, much later than most agricultural commodities that early on came under direct (State Owned Enterprises) or indirect (but de facto through Agricultural Sales Cooperative Unions) state control. When the state eventually undertook to stimulate progress in the fisheries, the political climate was no longer conducive to heavy-handed state intervention. The political climate during the Democrat Party era of the 1950s, as well as the post 1980 neoliberal climate, probably did not favour any 'communitistic' development in the fishery sector. Secondly, since Turkey imported almost no seafood (or meat, for that matter), fisheries were accorded little national importance within the import substitution strategy that was pursued up until 1980. Nor was water produce perceived as important export produce.

Trouble in managing fish and fishers is likely a third reason for the feeble state penetration into the fisheries. Mobile boats and men are not easy to govern, control, police or count. Also, since fish and other seafood are 'produced' daily most of the year and spoil rapidly, they are much more difficult to store, control, manage and standardize than most agricultural products. This is especially so in Turkey where there is a clear consumer preference for fresh fish and dislike of both frozen and canned fish. The seafood trade required competence, knowledge and networks that the state bureaucracy simply did not possess and was hard put to gain control of. Despite early aspirations to dispense with the 'capitalist class of middlemen' and establish a direct collaboration between the producers and the state – as well as similar ideas proposed by the political elite in the 1960s – the state seems to have made only half-hearted attempts to gain control of the trade. The abortive water produce undertaking of the EBK was probably intended as a step in this direction. In general the fish hall facilities have improved and fish trade has developed in scale and volume. But, to my knowledge, there is no tendency towards monopolization, state or other. Nor are there any kinds of price control or price regulation of the fish trade. There seems to have been no basic change in the structure of the fish trade in recent times. The basic outlines of the auction system in the fish halls with auction middlemen (*madrabaz*) and *kabzımal* display a great deal of continuity from Ottoman times.

Although state penetration into the fisheries has been feeble, fisheries nevertheless finally 'took off'. From the mid 1970s the statistics started to show the figures desired by the bureaucrats (see Figure 3.3). The rapidly increasing catch capacity of more mobile fishing, especially big-boat purse seiners and to a lesser degree trawlers, accounted for most of this increase while the dalyan fisheries were all but wiped out by changing environmental conditions and competition for space and fish.<sup>52</sup> While the basic operation of the purse seiners did not change, new and improved technology made fishing much more effective.

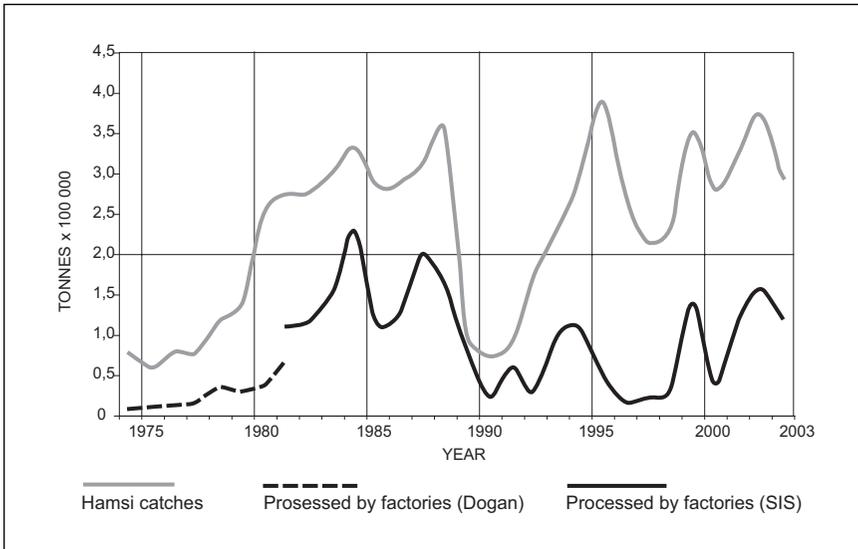
Several reasons can be cited for the 'production' success during the 1970s and 1980s. State investments in the sector were of central importance. From 1973 to 1983 investments in fishing harbours increased by a factor of five (in inflation-adjusted figures). During these years research received only around two per cent of total investments in the fishery sector. In 1983 state investments in the fisheries amounted to U.S.\$42.2 million, including U.S.\$15.8 million for harbours and U.S.\$22 million for credits. While credits for the fishery sector totalled U.S.\$4.25 million in 1976, it peaked towards the end of the 1980s (around U.S.\$30 million annually), dipped to U.S.\$23 million in 1995 before it peaked again at U.S.\$46.2 million in 1999.<sup>53</sup> Many fishers were entitled to subsidized water produce credits, and the credits effectively reached the 'producers'. The interest rate on these loans was well below inflation and almost half



**Figure 3.3. 'Water produce' production Turkey 1960–2004.** Source: Created on the basis of State Institute for Statistics Prime Ministry Republic of Turkey (SIS) Fishery Statistics and Acara et al. 1989.

the level of the market interest rate.<sup>54</sup> Last, but not least, from the mid 1970s the state massively sponsored, with subsidized credits, grants and import tax exemptions, the establishment of fishmeal and oil processing plants. In certain circumstances the Development Bank of Turkey (*Türkiye Kalkınma Bankası*) provided very generous grants for the construction of water produce facilities (*Çelikkale et al. 1999: 310–11*). Construction of fishmeal and oil factories in the 'backward' Province of Sinop was entitled to a forty per cent investment grant. Starting in 1972, there was accordingly a surge in construction of privately-owned factories during the 1970s and 1980s (*Doğan 1982; Zengin 2000*). At the maximum there were, by the end of the 1980s, more than twenty factories. Most were located in the Black Sea region, and in 1990 the factories had a total daily production capacity of approximately eight thousand tonnes (*Zengin 2000*). While there is an upper limit on how much fresh fish the market can absorb in a short time, the high capacity of the factories and the possibility of delivering undersize fish meant that there was an almost limitless demand (albeit at a lower price) for hamsi and other small pelagic species, and it became possible to fish very intensively and profitably for a few weeks, especially for hamsi. As a sizable portion of hamsi catches were processed (see Figure 3.4), the growth of the Black Sea purse seine fisheries were stimulated. Some of the produce of the factories supplies part of the demand for feed in the growing fish-farm industry in Turkey.

Yet, factors outside of state initiatives to develop the 'fish production sector' were of equal importance. A general monetization of the economy from the 1950s onwards and the development of a new seafood consumer



**Figure 3.4. Hamsi catches and amount processed by factories.** Created on the basis of State Institute for Statistics Prime Ministry Republic of Turkey (SIS) Fishery Statistics, Acara et al. 1989 and Doğan 1982.

culture greatly increased the demand for seafood. The construction of a national road network significantly improved market access and gradually transformed many regional seafood markets into one large national market. Marine research, however, seems to have played only a minor or marginal role in the success history: neither with respect to technology nor to knowledge of stocks were they able to guide development in the fisheries.

## Change in Scientific Priorities

Early studies (e.g., the EBK series) explored primarily the distribution of fish and the feasibility of using various new kinds of gear and boats. Foreign input in this period, particularly by the FAO, typically promoted modernization, technological development, industrialization and catch increase. This was no accident, since the 1950s saw huge sustained increases in catches globally and fishery policies internationally during this period focused on catch increases through technological development (Pauly and Maclean 2002; Hersoug 2004). With the collapse of the Norwegian herring fisheries in the 1960s and the Newfoundland cod fisheries in the 1970s and 1980s, focus gradually shifted towards rational and sustainable exploitation of stocks and new management tools based

upon the science of bio-economics were developed. With regard to Turkey, however, I can see no trace of scientists and bureaucrats worrying about catch effort, stocks, population dynamics, MSY (Maximum Sustainable Yield) and so forth before the end of the 1980s. In the various long-term plans and seminar reports on the 'water produce sector', increased production remains the primary goal. Examples abound (e.g. GDWP 1974; Agricultural Bank 1982, 1984), but the following is typical: The IV Five Year Development Plan (1979–83) states that stock assessments will be undertaken, especially in the Black Sea, with the goal of an annual production increase of 7.7 % (Sarikaya 1980: 26). The 'agriculturalist' focus on production may have made management and science less receptive to the new focus in international marine science and policy.

Things started to change towards the end of the 1980s. First, the collapse in the Black Sea fisheries during 1989–92 pushed the domestic and international discourse towards sustainability issues. At the same time international research bodies 'rediscovered' the Black Sea and it became easier to fund courses and scholarships for Turkish marine scientists. Turkish scientists received training under, among others, the auspices of FAO and the Japanese aid organization JICA in stock management, MSY, and the like. Second, the year 1989 was an important turning point in international politics, and the strategic interests of the U.S. and NATO may have played a role in the design of research programs. From 1989 onwards NATO initiated and funded stock-assessment studies in the Black Sea (Acara et al. 1989: 7), particularly at the Middle East Technical University. One of the NATO publications resulting from the studies is tellingly titled *NATO TU-Black Sea Project: Ecosystem Modelling as a Management Tool for the Black Sea* (Ivanov and Oğuz 1998). In 1993 the UN-funded Black Sea Environmental Programme was established. It has played a major role in promoting marine research with the objective of facilitating sustainable management of the sea.

Marine scientists in Turkey rather swiftly adopted bio-economic models during the 1990s. A survey of the 700 publications, mostly by Turkish authors, that are listed in the *Turkish Black Sea Bibliography* (Öztürk 1998), shows dramatic increase in publications dealing with population dynamics, stocks, and fishing effort from 1989 onwards. While only two or three publications dealt with such issues before 1989, as many as thirty-five works address such issues in the years 1989–97. Furthermore, new Turkish textbooks in basic marine and fisheries science (used at water produce faculties) concentrate on fishery biology, population dynamics and MSY (Avşar 1998; Evkoyunca 1995; Bingel 2002) and make extensive use of the models of internationally acknowledged scholars such as Beverton-Holt (population dynamics) and Gulland (stock assessment) and Schaefer (mathematical framework for explaining the relationship between fishing effort and catch). Such models have been widely applied

in the management of many large-scale fisheries, especially in the North Atlantic since the mid 1970s.

Turkish scientists and managers alike believe that use of bio-economic models holds the potential for establishing a quota management system in Turkish fisheries. Most acknowledge, however, that there has been insufficient research on stocks and that efforts in this field should increase. Adaptation to the EU's Common Fishery Policy as well as the potential agreement on a Black Sea fishery convention will necessitate this. There is, however, no discussion to date of what a potential quota system would look like, whether it would work, and what the social consequences would be.

### **SUMMARY OF FISHERY POLICIES SINCE 1950**

- 1950s: The EBK initiative – Marshal Plan and FAO supported attempt at creating scientifically guided state lead development in the fishery sector. Yet, little effect on catches.
- 1960s: Much of the initiatives of the 1950s were discontinued. Ambitious goals in five-year plans. Continued low catches.
- 1970s and 80s: New 'water produce' law, fishery administration within Ministry of Agriculture. Research dispersed, focus on fish farming. Substantial direct support to fishers and development of infrastructure. Rapidly increasing catches.
- 1990s and 2000s: Some move away from 'agriculturalist' production approach towards sustainability and bio-economic models. From early 2002 starting adaption to EU Common Fishery Policy.

## **What Role for Tradition and Privileged Access?**

The international academic and management discourse concerning fisheries management is presently split. One line of thought emphasizes comanagement, participation, Customary Marine Tenure (Hviding and Jul-Larsen 1993), and the importance of local ecological knowledge (or indigenous or traditional ecological knowledge). The other, and the more influential in large-scale fisheries, is bio-economic models that focus on stock assessments, total allowable catch (TAC) and quotas. Both of these differ from classical modernizing fishery policies in that they aim at sustainable development and ecosystem management.

One might envision the first model as useful in the Turkish fisheries. The traditional framework of privileged fishing rights, rented from the state and still partly in place when the Turkish State undertook to develop the fisheries from the 1950s onwards, could have formed a basis for the development of communal usufruct rights in modern coastal fishing. Did

laws and regulations stimulate or work against a system of privileged access, for example? The 1971 Water Produce Law (1380/3288, paragraph 12) stipulates that privately owned dalyans left unused for five years will be nationalized (*kamulaştırılma*). Furthermore, lease of 'production' (*istihsal*) rights to dalyans, volis, lakes and lagoons is primarily to be given to water produce cooperatives or village associations of men residing in the production region (Paragraph 4). This suggests that the state regarded as unacceptable the inheritance and possession of private dalyans and other kinds of privilege associated with the old fishery regime. Rental of production rights of dalyan, voli sites, and the like have seemingly been contingent upon the state which never designed a policy to 'develop' dalyan fishing. These 'traditional' modes of fishing were clearly perceived as 'marginal', as they surely were by 1971. Technological development as well as the destruction of good voli and dalyan sites along the Bosphorus made this a less sensitive question than it could otherwise have been. Recently the practice of dalyan and voli fishing became even more restricted when the ministry decided not to grant any new permits. The bureaucrats discourage their use because they allegedly catch fish in the reproduction season. They indicate, however, that the practice of dalyan and voli fishing conflicts with other more important uses of the seascape.

While territorial rights connected to 'traditional' technologies were marginalized in the new law, what of such modes of fishing in practice? In 1955 the 'folk poet' Vasif Hiç wrote: 'Along the Anatolian and European coast of [Istanbul] there are voli places, rented from the Evkaf [government office of foundations] or in the past offered someone as a favor by decree, where the renters or owners possess the right to execute the art [of fishing]; other boats cannot come from the 'open' and turn a voli there' (quoted in Koçu 1960: 2000). Thus, while the dalyan fisheries were in decline, and the more mobile purse-seine fishing (*gırgır*) gained ground, old practices continued in the seine fishing on the volis. Hiç noted that 'seine means fishing in one's own place', and 'each voli has its own borders for where the seine can be set.' There were 'owners' that were entitled to charge others for the use of their voli. If Hiç is correct, during the early Republic the privileged patrons (tax farmers) of the fishing rights disappeared and the fishers rented fishing grounds directly from the government-controlled Evkaf. In all likelihood, the dalyans, and especially the voli places, were not policed as stringently before. Fishers probably increasingly enjoyed 'hereditary' rights to voli places without the burden of paying a rent or tax for using them. Although the Republican fishery regulations include a long list of regional and place prohibitions, none of these are related to privileged access for individual persons, villages or the like. On the other hand, some Ottoman privileges were possibly retained well into the Republic. The large Beykoz dalyan on the Bosphorus was rented out by the heirs of a certain Hüseyin Ağa who had received the

right to the dalyan as a gift from the Sultan during the Ottoman age. The heirs retained this right until the dalyan was set up for the last time in the late 1970s (Pasiner 1993/94: 545).

While, on the one hand, 'modern' fisheries and Western models were idealized and 'traditional' practices were ignored in law and policy formulations, on the other hand received practice, including some privileges, was allowed to continue. The Republican policy had clearly not effected a decisive break with the past. There were continuities from Ottoman times at the level of fishing practice and even state-acknowledged privileged access. An explicit conflict between received practice and new ideology, however, does not seem to have emerged. When fishery development policies at last began to be implemented after 1950, the idealistic 'high modernism' discourse continued.

Thus, the Turkish authorities do not consider fishers' knowledge to be indigenous knowledge (IK) or traditional ecological knowledge (TEK). Such concepts are unknown, not only in Turkish fishery management, but in Turkey in general. In a report addressing intellectual property and traditional knowledge, delivered to the Convention on Biological Diversity, the Turkish authorities bluntly state that 'there are no indigenous people in Turkey' (GDEP n.d.) This indicates that IK and TEK are part of a larger discourse about knowledges and that the use, or not, of these concepts are conditioned by a range of external factors. They are not neutral concepts. The particular track taken by the Turkish modernization process privileged, and created, the emergence of marine sciences as an independent field of authoritative knowledge of sea and fish. When tradition was sought to be 'overcome', it would have been seen as reactionary to champion IK or TEK. This has clearly prevented the acceptance of alternative development models focusing on participation, comanagement, farmer first and the like, thereby blocking the main road through which IK and TEK enter policies and academic discourse.

At the same time, Turkish social science has not been ready to acknowledge informal and dynamic processes that are typically thought to be characteristic of IK and TEK. In a critical analysis of Turkish social science, Mardin has claimed that, due to its special itinerary, the language of Turkish intellectuals has given priority to a macro-sociology (1997a: 66). He asserts that one effect of this 'macro' focus has been dismissal of 'identity processes, the noninstitutional basis of religion, and personal histories as "colorings" of social processes'. He calls for more micro-sociological studies along phenomenological lines or inspired by themes such as 'lifeworld' and the 'everyday' in order to link 'micro' and 'macro' (Mardin 1997a: 72).

For various reasons it has not become common to make statements about IK and TEK in Turkey and the Middle East in general. This does not reflect a lack of indigenes or situations that could have been appropriately studied as IK or TEK. A complex set of factors has caused the lack of IK and TEK

approaches in the policies and studies of the Middle East: the rise of Islam in political-academic discourse on the Middle East; a crisis of representation in Middle East anthropology; past and recent endogenous processes towards the standardization of law in the Middle East; the character of colonial policies; and a lack of natural resources with global importance 'protected' by a native population (Knudsen 2007). Some of these issues concern dynamics within academia and the frameworks through which scholars study and represent the Middle East. Other issues concern social change in the region itself and how it has been positioned with regard to colonialism and processes of modernization and globalization.

Although alternative ideals for fishery management that emphasize tradition, continuity and participation have emerged internationally during the last twenty-five years or so, fisheries management in Turkey now seems set to be designed according to 'modern' bio-economic models. While marine scientist in Turkey now rely less on modernistic 'production' models, the overall framework of rational exploitation and the important role of the sciences remain intact. The new bio-economic models require more of the social and natural resources to be legible (stocks, fleet structure) and may therefore even afford scientists a greater role in the fisheries than before. Bio-economic models coupled with EU-style management models necessitate and legitimize deeper penetration of the state into the social organization of the fisheries. The bio-economic approach promises to make manageable that which has hitherto been beyond the reach of the state.

## **The State and Seafood Consumption**

While the state's efforts at making legible and controlling fishing activities are set to increase, it steadily makes less effort to direct the culinary aspects of seafood, tastes. Concerns about production and taste were still interconnected during the late Ottoman era in the few articulations of ideals for development of rational and industrial fisheries. Yet, within a new discourse of scientific rationalization in the early Turkish Republic food was treated differently. The state became increasingly concerned about its subjects' welfare, health and material conditions and designed a nutrition policy along with a general policy to stimulate development within a range of different economic sectors. As the state's approach to the fisheries moved from tax farming to scientific and rational development planning, increasing production and maximizing proteins, rather than taste, became the main concern and challenge. Concerns about taste and production became disconnected. Interestingly, Devedjian, the head of fish auctions in Istanbul in the beginning of the twentieth century, was more explicitly interested in this. His detailed study (1926) of fisheries in Istanbul not only includes catch statistics, fishery technology and

recommendations for industrialization, but for each species or kind (more than 160) that he describes he also notes their culinary value and primary mode of cooking, and often also supplies detailed descriptions of various modes of conserving. In contrast, the culinary value of seafood receives much less attention in post-1950 state approaches to fisheries. The book 'Our Black Sea Fisheries' (Çakıroğlu 1969), sponsored by the Ministry of Trade which at that time was responsible for fishery policies, includes some recipes, but, notably, only for hamsi. After responsibility for administration is handed over to the Ministry for Agriculture, the only way consumption enters the picture, as in textbooks on 'water produce marketing', is in the technical and formalized language of economic science, as 'demand' (*arz, talep*) and 'consumption' (*tüketim*) (e.g., Şener 1987). What the state indeed effectively managed to accomplish was increasing demand through stimulating construction of fish and oil processing factories.

The state has been less effective in influencing the culinary cultures of seafood. Lifestyles have been more impervious to state influences, and seafood cultures display a great degree of continuity, likely because they are more closely connected to daily practices of identity negotiations and morality management. Also, the main characteristics of the fishing sector are not predicated only on state modernizing efforts, but are also a result of the sector's adaptation to the culinary cultures of seafood. Thus, in certain respects, the post-1950 developments in the fisheries sector can be said to unfold at the interface of two different influences, namely the culinary cultures of seafood, and the state modernizing project.

The 'forgetting' of the culinary aspects was an effect of the particular road taken in Turkey in the creation of fisheries as a sector and the parallel emergence of the knowledge field of water produce science. There is reason to argue that this 'modernization' process also resulted in a 'forgetting' of fishers' practices and knowledges and created a wall between scientists and fishers. The severe resource crisis in the Black Sea during the early 1990s created social tensions, and the search for reasons for the disappearance of the fish was a pervasive concern for fishers and scientists alike. But they held very different opinions about the reason for the crisis. While Turkish marine scientists adopted the internationally accepted scientific position that the invader species comb jelly (*mnemiopsis leidyi*) was one of the major reasons for the resource crisis (GEF – BSEP 1996), this was totally unknown to the fishers (Knudsen 1997). In contrast, most fishers thought that the fish-finder sonar killed or scared away fish – an idea known to, but ridiculed by, the scientists. I will return to these issues in later chapters. While this chapter has dwelt on state discourse on fisheries, I will now turn to fishers' knowledges and practices.