Akdeniz İ.İ.B.F. Dergisi (36) 2017, 156-193

Household Incomes in the Sponge Gathering Industry: Findings on the Late 19th Century Ottoman Empire and the Early 20th Century Turkish Republic Economy

Süngercilik Endüstrisinde Hanehalkı Gelirleri: 19. YY İkinci Yarısı Osmanlı İmparatorluğu ve 20. YY İlk Yarısı Türkiye Cumhuriyeti Ekonomisi'ne Dair Bulgular

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Recieved: 28.05.2017, Accepted: 07.08.2017, Published: 20.11.2017

Abstract

Sponge gathering, as an export-oriented industry, has been taken place for a long time in the same region around the islands which are in the vicinity of Marmaris and Bodrum on Anatolia, in the Aegean Sea, and close to one of the main ports of sponge trade in 19th century, İzmir (Smyrna). The natural sponges which has been demanded mainly for the needs of households and for the industrial needs, has been immensely gathered and constituted the main source of income for the household members in the mentioned locations till the synthetic substitute has been invented and started to be produced in 1950s. This interval also identifies the life span of the industry. During this interval, historical sources are found identifying the main determinants of household incomes as well as the peculiarities of the sponge gathering industry in a certain extent, both for the late 19th century Ottoman Empire and the early 20th century Turkish Republic economies. The high dependency to the nature, the inherent risks of the sponge gathering diving and the short-termed financial needs are all identified as these characteristics which were remained the same for almost a hundred years between the second half of 19th century Ottoman Empire to the early 20th century Turkish economy. Under the guidance of historical resources, into this article, the findings on the household incomes and their main determinants are presented.

Keywords: *Late 19th Century Ottoman Empire Economy, Early 20th Century Turkish Republic Economy, Household Incomes in Export-Oriented Industries, Natural Sponge Gathering Industry Exports, Sponge Gathering Diving Profession*

Jel Codes: *F16, J31, Q28, R11*

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Özet

Bir endüstri, ve aynı zamanda insan ile sualtı etkileşimini başlatan izleklerden birisi olarak süngercilik, Akdeniz bölgesinde önemli kalıtlar bırakmıştır. Bu endüstri uzun bir süre boyunca aynı bölgelerde yer almış, Ege Denizi'nde de, 19. yüzyılın sünger ticareti açısından önemli limanlarından birisi olan İzmir(Smyrna)'e yakın mesafelerde bulunan, özellikle Anadolu'da Marmaris ve Bodrum yakınlarındaki adalarda önemli bir gelir kaynağı olmuştur. Öncelikle haneiçi kullanım amacıyla ve sınai bir girdi olarak talep edilen doğal sünger 1950'lerde sentetik türevlerinin icad edilmesine kadar geçen süre içerisinde, sözkonusu bu coğrafyada yoğun bir biçimde toplanmıştır. Söz konusu bu zaman kesiti, aynı zamanda süngercilik endüstirisinin ömrünü de tanımlamaktadır. Farklı niteliklerdeki tarihi kaynakların sunduğu öncel nitelikteki bulgular 19. yüzyıl ikinci yarısı Osmanlı İmparatorluğu ve 20. yüzyıl ilk yarısı Türkiye Cumhuriyeti Ekonomileri için hanehalkı gelirlerinin asli belirleyenlerini belirli ölçüler dahilinde tanımlayabilmektedir. Bulguların önemli bir kısmı, bu endüstri açısından, ihracat-yönlenimli yapısı, üretimin doğa koşullarına bağlı olması, sünger toplama dalıcılığının içerdiği riskler ve kısa vadeli finansman ihtiyaçları gibi, endüstrinin kendisine ait özellikleri belirginleştirmektedir. Ayrıca, bu özelliklerin, erken 20. yüzyıl Türkiye ekonomisi için bile geçerli olacak nitelikte, yaklaşık bir yüzyıl boyunca aynı kaldığı da anlaşılmaktadır. Bu makalede tarihi kaynaklar dahilinde hanehalkları tarafından kazanılan gelirlere ve başlıca belirleyenlerine dair bulgular sunulmaktadır.

Anahtar Kelimeler: *19. yy. ikinci yarısı Osmanlı İmparatorluğu Ekonomisi, 20. yy. ilk yarısı Türkiye Cumhuriyeti Ekonomisi, İhracat Yönlenimli Sektörlerde Hanehalkı Gelirleri, Doğal Sünger Endüstrisi İhracatı, Sünger Dalıcılığı Mesleği*

Jel Kodları: *F16, J31, Q28, R11*

Introduction

Sponge gathering, as an industry, also as one of the known initiating paths of human-underwater interaction, has left important sheds in the Mediterranean region. This industry has been taken place for a long time in to the same region, especially in the Aegean Sea. The geographical dispersion of the herein mentioned industry refers to the islands which are in the vicinity of Marmaris and Bodrum on Anatolia, and close to one of the main ports of sponge trade in 19th century, İzmir (Smyrna). Natural sponge, as a commodity which has been demanded for various needs, is known gathered from the sea basins mostly by the divers, especially, from where these are grown up into the deeper parts of the underwater and the available tools couldn't let the gatherers reach them. This is known given a rise to an occupation, the sponge gathering diving which has left a fairly well-known tradition into the mentioned region. On the basis of reached

printed archival sources, almost a century is having its glimpses here into that study and while the different other sources of historical analysis suggest that this occupation has taken place for a longer period of time (Bernard 1972, Çoruh 2009, Pronzato & Manconi 2008, Simpson 1933, Voultsiadou 2007).

Natural sponge gathering industry which is the main source of income for the sponge gathering households, as historical findings are suggesting, is kept nearly the same, peculiar characteristics. Primarily, this industry has always been dependent to the exports, the foreign trade of natural sponges. The second peculiarity is indicatively emphasized that the sponge production was always in need of short termed funds to be provided for the production. Finally, the risk structure of the production, based on the techniques utilized into the industry and the dependency to the conditions of nature, is also found characteristic to the sponge gathering industry (Yürekli 2011, 2012, 2014). All these mentioned peculiarities, in brief, the intensely export-oriented structure, the short termed financial requirements and the inherent risk structure are also known effecting the earned household incomes, neatly say, the incomes of sponge-gatherers' families. With these peculiarities in mind, into this study, the preliminary findings on the household incomes will try to be identified under certain assumptions and by appealing to two different data sources of the late 19th century and early 20th century[2].

2. Data Sources[3]

Appealed data set is mostly based on archival sources and mainly two different data sources are utilized into the study. Guiding findings, including the estimations on the late 19th century household incomes, are based on the statistics yielded from the Commercial Reports which have been officially issued by The British Consulates on the economic and social conditions of Smyrna (İzmir) and its surrounding locations and mostly referred as the Accounts & Papers series of historical records in various studies which examines the historical facts. The information provided by these reports are known mostly based on the statistics gathered by the Port Smyrna (İzmir) authorities for its administrative borders.

Second set of sources utilised into that study, have been printed for the administrative purposes as minutes of meetings, in which, balance sheets of

2 The detailed elaboration of the structured model would be found into the Appendix 1.

3 The sampled extracts which are obtained from the mentioned data sources would be found into the Appendix 2.

Süngercilik Türk Anonim Şirketi (SünTAŞ) as well as the current issues which have been brought to the stakeholders' attention are all included. Yet, another bunch of data is based on different printed materials including official reports prepared on the industry and the current studies giving emphasizes to the different aspects of the occupation and the enterprises. Nearly all of the referred studies could also be called as historical sources with respect to the period that they have been published, which is covering the early and mid-20th century, clearly identifying, the latest, the year 1961.

3. Preliminary Findings On The Late 19th Century

Natural sponges, till its synthetic substitutes are invented and begun to be produced by the mid-20th century, have been demanded with its own characteristics which meets certain needs of consumers[4]. Most of the species having the required characteristics is known populated densely into the Mediterranean and favourably gathered from the Eastern Mediterranean, Anatolian coastal region, Aegean Sea and North African shorelines (Pronzato and Manconi 2008). The moderate, increasing trend of the production has started to gain a new tendency under the guide of newly adopted sponge-gathering techniques. One of them was the utilisation of the scaphandres, the leading innovation regarding to the commercialized equipped diving apparatus, which has brought drastic changes to the diving occupation. Following the introduction of that technology, namely the scaphandres, to the sponge gathering industry of mid-19th century, natural sponge-gathering has gained a new trend, and the known production patterns has begun to change gradually (Özgün 2013, Yürekli 2011, 2014).

Into the same interval, depending on its geographical location which is in the proximity of sponge gathering routes, one of the most favourable port for the East Mediterranean sponge trade has favourably repudiated as the İzmir (Smyrna) till the late 19th century. During this interval, natural sponge exports is known illustrating a fluctuated pattern with an average 3.5% share in total exports of port İzmir and for the second half of 19th century (Table 1).

4 An extensive analysis of the natural sea sponge industry with references to the trade dynamics and the main determinants of the demand as well as the gathering process, all of which are representing the existing circumstances of the named production for the 19th Century Ottoman Empire, would be found in Yürekli (2011).

Table 1: Share of Natural Sponge Exports Into The İzmir (Smyrna) Exportation

Year	Sponge Exports (*000 English Sterling)	Shares (%)
1865-1868	189.71	4.72
1869-1872	74.39	1.79
1873-1877	171.20	3.93
1878-1880	264.42	6.85
1881-1892	102.70	2.54
1898-1899	35.23	1.00
Average	139.60	3.50

Source: Total exportation figures (Kurmuş 2007).

Table 2: Sponge Gathering Boats, Crew And The Piastre (kuruş) Value Of Natural Sponges - Registered Harbours And Sponge Gathering Districts (1890)

Harbours	Rhodes (Rodos)			Symi (Sömbeki)			Halki (Herke)			Calymnos (Kelemez)			Castellorizo (Meis)			Budrum (Bodrum)			Totals		
Sponge Gathering District	**A**	**B**	**C**	**A**	**B**	**C**	**A**	**B**	**C**	**A**	**B**	**C**	**A**	**B**	**C**	**A**	**B**	**C**	**Boats**	**Men Employed**	**Value[1]**
Mandruha	2	--	--	15	25	30	30	--	--	10	50	--	--	--	--	--	--	--	162	1785	7400
Bengazi	--	--	--	10	--	20	5	--	--	10	15	--	--	--	--	--	--	--	60	685	3650
Tripoli, in Africa	--	--	--	15	10	30	--	--	--	5	10	--	--	--	--	--	--	--	70	660	5000
Caramania	1	--	--	--	10	20	--	--	--	--	--	--	5	--	--	--	--	15	51	330	750
Crete	--	--	--	5	15	10	2	--	--	5	--	--	--	--	--	--	--	10	47	425	340
Cyprus	--	--	--	5	--	20	1	--	--	--	5	--	--	--	--	--	--	10	41	275	640
Islands of Archipelago	--	--	--	--	--	10	--	--	--	--	--	--	--	--	--	--	--	5	15	60	120
Total	**3**	--	--	**50**	**60**	**140**	**38**	--	--	**30**	**80**	--	**5**	--	--	--	--	**40**	**446**	**4220**	**17900**

A:Diving Apparatus, **B:**Naked (Apnist Diver), **C:**Trawling Apparatus. **1:**Value of Sponges (thousand piastres(kuruş))
Source: C.R.(1891) [Extracts of the named reports is attached].

While approaching to the end of 19th century, in the 1870s, İzmir Port has been renovated in order to provide the necessary infrastructure which has been needed depending on the increasing trade traffic of the region, and just after the completion of this construction, in the 1890s new duties are decided to be scheduled for the trade operations. Increasing quay duties is known forced the sponge gatherers to sail different other harbours than İzmir, i.e. Symi, Calymnos, and Rhodes and market their products with lower custom duties (C.R. 1882-1885). In addition to the increasing "quay dues", "the prohibition of the use of the diving apparatus" which has been released by 1885 and prohibited once again by the beginning of 20th century, has also been emphasized as another factor effecting the natural sponge trade (C.R. 1882-1885, C.R. 1902-1904). Under the effect of new duties, total sponge exports from the İzmir port has exhibited decreases in

quantities. The mentioned decrease in traded quantities are also found indicative emphasize in the historical records:

"The value of the sponge trade during the year 1891 is stated to have diminished from 20 per cent. to 25 per cent., as compared with that of the preceding year, and this statement is borne out by the diminution in the amount of the "charitable dues" levied by the communities of the various islands interested in the trade, viz., Symi, Calymnos, and Halki." (C.R. 1891) [Extracted pages of the named report is attached.]

The changing trade routes would be another reason of the decreasing registry values, however, once the available data sources are all consolidated together to represent the subject volume, the overall production is expected to yield the same values in approximation. Although the traded, exported quantities of sponges gained a decreasing trend, as mentioned, available historical records also indicate that the production of that commodity has not follow the same tendency and exhibited a certain increase in quantities (M. Milanese, A. Sarà, R. Manconi, A. Ben Abdalla, R. Pronzato 2006, Yürekli 2011). Even after the previously mentioned reasons changing the trade routes, it's known that most of the leading producers of sponges have kept sailing to the same destinations where they could gather the sponges in demanded quality (C.R. 1878-1881, 1882-1885).

However, the new sailing routes are also known exhibited variations depending on the decreasing quantities of harvest caused by the excessive gathering. The known regions on which the natural sponges have been gathered could be said reaching to the African shorelines by the end of 19th century (C.R. 1891, 1892). With respect to the different types of techniques, for the districts from which the harvest has been gathered and the main harbour of anchorage for each sponge gathering boat, these routes have been recorded as below (Table 2).

It's given that between the years 1877-1881 known number of sponge gathering boats is amounted 300 to 400 in which the total number of scaphandres diving instalments are indicating 100 of them by which the sponges have been gathered by that apparatus (C.R. 1877-1881). Also, for the year 1891, it has been getting clear emphasize that the employment of sponge gathering divers exhibited a tendency to increase which also suggest that the production is tend to increase even after the quantities exported from the İzmir port are started to decrease:

"With regard, however, to the number of men employed in the industry a considerable increase is recorded. It appears that, whereas some years ago to each boat using the diving apparatus four divers were alloted out of a crew of 15, now six, and even as many as eight, divers are employed, the crew often numbering all told."(C.R. 1892).

Total number of sponge-gathering teams who are located on the Aegean islands and the Anatolian coastline, which is known as one of the most favourable region for sponge gathering of the interval mentioned into this study, is indicating a total number of 446 boats registered to different harbours and engaged with sponge gathering and the total number of crew employed in sponge gathering is known reaching to 4220 members (Table 3) (C.R. 1888-89, C.R. 1891).

These figures are illustrating the amount of invested capital by means of boats and equipments and the different genre of technologies, as well as the employed amount of labour and for the most favourable locations of sponge gathering during the late 19th century. Also these are providing a certain base for the number of households who have lived into the mentioned regions, and have been engaged with sponge gathering which has been taken place into the Eastern Mediterranean districts of Ottoman Empire borders (Table 3).

As being an export-oriented industry, for which its own product has been almost entirely exported to different markets, household incomes are exhibited a high dependency to the traded quantities as well. Sponge gathering teams' total harvest is known usually traded to the merchants after each sail and supplied to the international markets by the merchants. Regarding to the available information for the 19th century the 10% 12% share of the necessary expenditures on the export prices underlined as follows:

"(..) the expenses incurred for sanding [sponges] with a special quality of sand, packing them in boxes, manipulation, extra freight, which is then calculated on the cubic measurement, surplus on custom dues, &c., increase the price of sponges from 10 to 12 per cent." (C.R. 1898).

Table 3: Sponge Gathering Boats And Crew By Registered Harbours (1890)

Harbour		Diving Apparatus	Apnist Divers	Gangava	Total
Rhodes (Rodos)	**1**	60	--	--	**60**
	2	3	--	--	**3**
	3	--	--	--	**300**
Symi (Sömbeki)	**1**	1000	420	560	**1980**
	2	50	60	140	**250**
	3	--	--	--	**7800**
Halki (Herke)	**1**	760	--	--	**760**
	2	38	--	--	**38**
	3	--	--	--	**4000**
Calymnos (Kelemez)	**1**	600	560	--	**1160**
	2	30	80	--	**110**
	3	--	--	--	**5000**
Castellorizo (Meis)	**1**	100	--	--	**100**
	2	5	--	--	**5**
	3	--	--	--	**500**
Budrum (Bodrum)	**1**	--	--	160	**160**
	2	--	--	40	**40**
	3	--	--	--	**300**
Total	**1**	**2520**	**980**	**720**	**4220**
	2	**126**	**140**	**180**	**446**
	3	--	--	--	**17900**

1:Crew, **2:**Boats, **3:**Value of Sponges (thousand piastres(kuruş)).
Source: C.R.(1891).

Hence, parallel to the findings, for the early 20th century, the difference in the same nature is known reaching to 75% share into the export prices. This percentage is based on the export prices and the accounting registries for the stock values of sponges, which is mainly valued on the basis of exchange prices that the natural sponges bought from sponge gatherers (SünTAŞ 1938, 1941). Again, it's emphasized that, this was the highest price valued for the gathered sponges among the possible other offers in the market for the mentioned period (SünTAŞ 1936). Briefly, the deduction of a certain mark-up level from the export values is found necessary to be utilised for the estimations on the household incomes.

It's also known that sponge gathering, because of its high dependency to the weather conditions, could be taken place within a certain period in each year. According to the historical records, it's said, before starting the utilisation of the new invention, namely the scaphandres in sponge gathering, first sails have usually been headed by the beginning of April and till the end of October which is indicating approximately a six-month duration for the whole harvest to be gathered (C.R. 1890, Bernard

1972:187). After scaphandres has begun to be utilized in the sponge gathering industry, gatherers have begun to sail to the shallow and sheltered waters even in winter period by which they have found a chance to increase their revenues. It's known that the export figures are on the annual basis, and, consequently each estimation on the household incomes is also yielding an annual figure. On the other end, it's fairly well-known that these incomes are generated during the six months of gathering in practice and in order to reach fine-grained results this fact should also be considered.

While the gross incomes for the sponge gathering households are under the effect of these main variables, on the individual basis, total revenues are known distributed in accordance to different schemes for each sponge gathering technique. It's known that the total amount harvested by each gathering crew, which is called as "parthida", have been sold on negotiated prices which are settled up in the market (C.R. 1898). Then after that each specie, depending on the gathered locations and having different characteristics have been subject to negotiations based on different units varying from piece to weight and even bunched lots (C.R.1898). Following the negotiations and selling their harvest to the merchants, the crew was known earning their revenues according to the conventional shares of the total earning from the harvested quantity sold. Sponge gatherers which were utilizing gangava is known sharing the total product in the following manner. One out of five equal shares is known given to the captain, two of them were given to the two crews, one share was given to the gangava, and one share was kept for the maintenance of the boat (Simpson 1933:18). While the sponge gathering teams employing apnist (free) and scaphandres divers the total product is known shared with different percentages, such as, after deducting the expenses of the boat, the ⅓ % of all harvest was kept by the captain and the rest, amounted ⅔ %, was shared between the whole crew including the captain with equal percentages (Deveciyan 2006:306). Another distribution scheme which was covering the early 20th century's conventional practices, underlined that after deducting the total cost of sail, the profit was divided to equal shares for the boat, the captain, for each diver, and deck crew, where captain is known receiving the two unit shares, for the boat and for himself, and deck crew members are known receiving half of the unit share which was calculated by the captain (Bernard 1972:184). In brief, it is quite evident that each case is indicatively characterizing conventional factors on the applied scales to the payments of team members. Following the deduction of a certain amount to be allocated for the maintenance expenditures and depreciation which was subject to the physical capital items, the rest is known constituting the wage of the labour.

Also, based on the findings available for 1891, in line with the techniques utilized in sponge gathering, the technological endowment are found

effecting productivity in different levels. Approximate values for the sponge gathering teams which were employing scaphandres divers are estimated as 100-105 thousand piastres (kuruş) of harvest per boat employed in gathering. The same amount is estimated as 23-24 thousand piastres (kuruş) for the apnist diver teams and 7,5-9 thousand piastres (kuruş) for trawling sponge gatherers with 1891 prices. When their shares into the whole sailing vessels are considered, these are suggesting that the total amount earned by the sponge gathering households has had 74% share in the total product for the scaphandres boats, 19% for the apnist diver boats and 7% for the trawler boats. As well as the shares of crews into the employed gatherers are estimated as 60% for scaphandres utilization, while apnist diver employing boats were having 23% share and this was 17% for the gangava boats (Table 2 and Table 3). On the basis of an earlier information scaphandres diving boats is known having almost the same of 20 – 25% into the whole sponge gathering fleet where the total number of boats is given as between 300-400 (C.R. 1877-1881).

Finally, a certain household multiplier, which is presuming that the sponge gathering families were consisting of five members, is applied to the known number of crew members in order to reach the total amount of individuals including the household members whose earnings were based on sponge gathering. Presumed household multiplier of five family members is based on a certain constant which has been conventionally accepted as a reliable family size for the 19th and early 20th century. This family multiplier is known primarily utilized by the Turkish historian Ömer Lütfi Barkan (Behar 2000:66). In line with the research presented here, several other studies are also found utilizing the same family size in different contexts (TOBB 1958, Kepenek & Yentürk 2000:14). Following the same multiplier value, individual income levels are estimated in a certain extend. However, in order to reach more detailed income estimations on the basis of households and with respect to each utilised technique, accepting the possibility of having more than one family member employed in the sponge gathering industry could be found more reliable.

Another factor affecting the incomes of households is known as the inherent risks of diving occupation. Historical findings on the 19th century practices of sponge gathering diving is suggesting that nearly 7.9-10.5% of scaphandres divers were always under the threat of leaving the occupation because of their occupation's vital consequences by which the main income source of the family could be lost. Under the absence of any prevention, nearly 2% of all families could be considered losing their revenues in each year, at most 50% of their revenues, by assuming that two members of each family was being employed as sponge gatherer, and in the absence of any other income sources, was under the threat of these risks. It's also known

that apnist divers have been under a much lower risk profile than the scaphandres divers, which is underlined as one in a thousand or less (Çoruh 2009:38, Yürekli 2012a:1240-1243). In addition to this, the inherent risks of sailing should also be accepted as another set of factors which might have a certain effect for all sponge gathering teams. Briefly, most of the above mentioned factors are exhibiting the main determinants of household incomes, for the late 19th century, whereas, under the shed of these findings, several of them could be found beneficial for the estimations on early 20th century household incomes.

3. Preliminary Findings On 20th Century

Nearly into the same districts, sponge gathering is known continued to be the main source of income for the households who have been following this tradition till the second half of the 20th century, when the new synthetic substitutes of natural sponges have been introduced to the markets. The undertaken government interventions aiming to restructure and bring the economy to the defined development targets on the national basis, and, the existing economic and political developments of the world economy on the international basis are all known led this industry to experience drastic changes during 20th century. The production of natural sponges has exhibited certain decreases in quantities till it's been identified as one of the strategic industries that should be protected by government interventions within the current economic development policies of the newly established Turkish Republic. During this period, which covers the first half of 20th century, by the direct and indirect interventions of government, on the lead of state owned company SünTAŞ, not only the disturbed patterns of sponge production but also the incomes of households have been recovered into a large extend. Establishment of SünTAŞ, state owned company which has run its business in sponge industry and established with an identified goal of recovering sponge production and providing support to the existing producers against their foreign competitors, reached to its goal by the help of several interventions. Into this interval, SünTAŞ had a dual role into the industry, as an export company it was buying the product in order to market it to other countries as a sole supplier, which is indicating a monopolistic role in the industry. Additionally, the same company was known functioning as a producer with its own investments, boats and sponge gathering teams, as well as it was the sole buyer in the local natural sea sponge market (Yürekli 2012).

Additionally, by the provided support on short termed financial needs of producers, in the form of advance payments required just before the sails for gathering, same company had a role on the stabilization of household incomes against the unforeseen effects which were depending on the

inherent risks, i.e. the weather conditions and risks of diving on employee's health. Even after the termination of this public initiative, the SünTAŞ would be identified has given an initial impetus to the producers which has also been likely to have a vital importance on the survival of this tradition till the end of 1960s. Whereas it's also known that under the government incentives targeting the development of key industries, as being one of them, sponge gathering has been included into the foreign trade policies on the basis of export premiums. Consequently, it's known that a certain margin of price difference has occurred between the local markets and the exportation heading to world markets. The percentage was considered within the given values as shown in (Table 4) and (Table 5) of which is deducted from the export values, including the necessary expenditures and as in the type of premiums applied to the exports.

In addition to the government incentives directed towards the industry, sponge gatherers are also known being engaged into the cooperative actions against the existing circumstances effecting their business. One of them was the Bodrum Sünger İstihsal ve Satış Kooperatifi (Bodrum Natural Sponge Trade and Production Cooperative) which has been established by 1952 and known providing a certain strength to the ongoing businesses (TOBB 1958:29). However, the new inventions on the synthetic sponge products have caused decreases in the existing demand for the natural sponges into the world markets and forced the sponge gatherers change their businesses in a large extend, where the remaining gathering tradition kept on providing the demand for the national market. This was known as the main reason that this traditional occupation has become very limited by the numbers of gatherers on the districts in which the gathered products could be found.

Table 4: Incentives As In The Type Of Export Premiums

Years	USD Zone	EUP Zone	Clearing Zone
09/1953	0,5	0,4	0,25
08/1955	0,75	0,75	0,4
09/1956	0,85	0,75	0,4
10/1956	0,85	0,85	0,85
Source: TOBB (1958).			

Table 5: Shares Of Producers In Export Prices

Years	Prices paid to the Sponge Gatherers (1)	Average Export Price (2)	(3)=[(2-1)/(1)]*100
1898[1]	---	---	10% - 12%
1938-1941[2]	3 T.L.	12 T.L.	300%
1960 [3]	14.56 $	20.55 $	41,1%
1969 [3]	20.46 $	28.20 $	37,8%
(1): C.R. 1898, (2): SünTAŞ (1938-1941), (3): Bernard (1972:201).			

Under the shed of found statistics, household incomes for the subject interval are estimated by following the same rationale yielding the 19th century figures and concluded with the below mentioned results. Between 1938-1941, the government incentive, publicly owned company of SünTAŞ is known buying sponges from producers by the 25% of the export prices (Yürekli 2012:39). Also, it's known that just after the Second World War, for the mid-20th century, close to the 1960s export-prices was almost 40% higher than the market prices in Calymnos, one of the most favourable producers of the sponge gathering. After ten years, it's been subject to a slight decrease while the share of local prices exhibited an increase (Bernard 1972:201).

Table 6: Sponge Exports – Quantities And Values (1925-1961)

	Quantity (KG)	Value (T.L.)		Exportation (UK Sterling)*	UK/kg
Dates	**(1)**	**(2)**	**(2)/(1)**	**(3)**	**(3)/(1)**
1925	20759.0	113630.0	5.5	12696.1	0.6
1926-28	754.0	6513.7	8.6	689.2	0.9
1929	2327.0	14702.0	6.3	1457.1	0.6
1929-33	8363.2	57714.2	6.9	6172.7	0.7
1941	8300.0	105343.0	12.7	14391.1	1.7
1945	22252.0	599286.0	26.9	81869.7	3.7
1946-49	25647.3	926342.3	36.1	86915.8	3.4
1950-53	19199.0	484626.8	25.2	61814.6	3.2
1954-57	12854.5	390409.8	30.4	49797.2	3.9
1961	27676.0	1998080.0	72.2	79288.9	2.9
[*] UK Sterling exchange rates, 1925-50 Tezel(2000), 1950 and later CBRT statistics. **Source:** SünTAŞ (Above mentioned years), TOBB(1958), Karapınar(1964).					

The decrease in this percentage is known being under the effect of increasing competition, by which the prices have been lost their trend while the production costs are found resistant to that tendency, and, keeping the shares of household incomes considerably less degraded. Also, in line with the advancements undertaken in Turkish economy and sponge gathering industry in specific, household incomes are indicating a higher share in exported values than the beginning of the century.

Considering the effects of previously mentioned shares of premiums and percentages regarding to the differences between producers' share and the export prices, total incomes for households are estimated on the basis of given export values. The trend of the sponge exports between 1925 and 1961 is given as below (Table 6). Again, with respect to the number of employees who have worked into the industry, nearly into the same regions, available information is indicating the following breakdown for different districts and different techniques applied (Table 7).

The found information on the consisting number of members in each team is suggesting that during the early 20th century, the necessary amount of crew for each sponge-gathering technique is at the same level in a comparison with the late 19th century. These are given as 24 crews for scaphandres divers, 3 to 4 crews for both apnist diver, gangava or mirror bucket teams (TOBB 1958:20-21). Again, the same sources of information are giving emphasize to the difficulties related with the maintenance problems and the bottlenecks on renovating the existing diving apparatus (SünTAŞ 1942). Depending on the problems with the necessary investments on new technologies, sponge gathering teams are accepted exhibiting the same productivity levels given for the late 19th century. Regarding to each technique applied, these are having 70%, 24% and 5% shares into the total product of, respectively scaphandres divers, gangava teams and apnist/mirror bucket gatherers.

When the same family multiplier is applied, as it's given for the mid-20th century, the total sum of all individuals who were dependent to the incomes earned in the sponge gathering industry is underlined as 5000 (TOBB 1958:20-21). Also, while developing an estimation on the sponge gathering household incomes, previously mentioned possibility of having more than one family member who has been engaged with sponge gathering could be found beneficial to reach more reliable results.

Table 7: Sponge Gathering Boats By Registered Harbours (1951-1955)

Harbour	1951	1952	1953	1954	1955
Schaphandres (Skafandar)	**28**	**25**	**33**	**26**	**27**
İmroz	6	6	6	7	10
Bozcada	3	2	2	2	4
Ayvalık	1	1	1	1	1
Bodrum	9	8	9	6	6
Marmaris	9	8	15	10	6
Gangava (Kankava)	**36**	**20**	**34**	**36**	**29**
Bodrum	33	20	34	35	29
Marmaris	3	0	0	1	0
Apnist/Mirror Diver Boats	**7**	**7**	**9**	**7**	**15**
Bodrum	6	6	6	7	10
Marmaris	1	1	3	0	1
Bozcada	0	0	0	0	4
Total	**71**	**52**	**76**	**69**	**71**
Annual Production (Kilo.)	20000	25200	33900	28214	24025
Source : TOBB (1958).					

Even for the 20th century, in parallel to the findings, nearly same variables are suggested to have an effect on the incomes earned by households in sponge gathering. Eventually, from the late 19th century to early 20th, advancements in diving technology and consequential increases in productivity are known lead the sponge gatherers to invest more on diving apparatus while these technologies has begun to be utilized more favourably, in turn which might gave a rise to the exposed risks that divers are faced with. Also, it's known that, a certain awareness on the necessary compensation against such incidents is found indicatively developed in an important extend. For instance, SünTAŞ, as the leading company of the industry, is known launched the insurance schemes against the possible problems in mentioned nature (Yürekli 2012:42). Depending on the information reached, mentioned types of incidents, with the same potential on household income losses are known increased in the 20th century. Approaching to the mid-20th century, based on the reported incidents, these are given as approximately 2% while it is also known that sometimes it's reached to higher percentages (Bernard 1972:190, SünTAŞ 1940&1941, Sezen 1959:23).

Additionally, the short termed financial requirements for the sponge gathering families are found keeping its importance also in the 20th century. At the beginning of the 20th century, by the utilization of funds provided by SünTAŞ, as advance payments, these requirements are known met. While reaching to the mid-20th century, these are provided via banking institutions of that time under the industry specific credit schemes. Comparing the cost of these funds with the 19th century rates, which are known reaching to 24%

for almost six to seven months, in 20th century, credits based on specific schemes which were targeted to sponge gathering industry and classified in accordance with different needs of gatherers, were subject to an annual 7% cost at average (C.R. 1888-1889, TOBB 1958:25-26).

Conclusion

With respect to the wage figures which are given into the mentioned reports, wages are found varying between 1⅓ to 20 piastres (kuruş) daily, sampled from different sectors including manufacturing, construction, agriculture and services both for skilled and unskilled workers (C.R. 1888-1889). Own estimations which are based on the previously illustrated findings, yielding results into the range of minimum and maximum wages varying between 1200 to 7300 piastres (kuruş). In order to provide a certain control case for the estimated results in preliminary nature, estimations on income levels compared with the available wage figures which have been presented in previous studies. In a comparison with the wages of qualified and unqualified construction workers which are presented by Pamuk (2001) for the second half of 19th century, estimated incomes are shown in (Table 8).

Again, for the 20th century, the same estimations are compared with the annual wages in public and private enterprises. Into the local markets, the prices paid for the gathered sponges are known varying between 80 to 100 T.L. while the export prices were in between 100 to 120 T.L. (TOBB 1958:29). On the basis of each kilogram sold to the merchants into the local markets, 60-65% or 50-60 T.L. of price is accepted as the share of household incomes for sponge gatherers. When the previously calculated index values for different techniques is applied to the 20th century sponge gathering investments, concluded income levels are also found close to the wage figures which are utilized as control values.

Table 8: Late 19th Century Sponge Gathering Industry Household Incomes

Years[1]	Annual Incomes (Based on Daily Wages)[3]		Years[2]	Sponge Gathering Crew Annual Income Estimations		
	Unqualified	Qualified		Scaphandres	Apnist	Gangava
1863	3215,7	5931,3	1865	1653,2	976,1	482,7
1866	2631,7	4719,5	1866	4196,8	2478,0	1225,4
1867	2631,7	4719,5	1868	4195,1	2477,0	1224,9
1869	2555,0	5015,1	1869	1840,1	1086,5	537,3
1874	2920,0	6555,4	1874	2033,2	1200,5	593,7
1879	2806,9	5544,4	1879	3819,4	2255,2	1115,2
1881	2912,7	6372,9	1881	2381,3	1406,0	695,3
1882	2781,3	6343,7	1882	1870,9	1104,6	546,3
1889	2920,0	6095,5	1888	1467,3	866,4	428,4
1891	2927,3	6106,5	1891	1767,4	1043,6	516,1

Source: Pamuk (2000 and 2001) for the wages of construction workers.
(1,2): With respect to the years given into this table, in order to denote the differences between the data sets, each of the above time series is given separately.
(3): Daily wage rates are converted to annual Ottoman Kuruş values by using the conversion factors which reside in (Pamuk 2000:191 and 2001:73).

Table 9: Early 20th Century Sponge Gathering Industry Household Incomes

Years	Annual Wages in Large Scaled Enterprises (T.L.)		Sponge Gathering Crew Annual Income Estimations (T.L.)		
	Public	Private	Scaphandres	Apnist	Gangava
1950	1840	1070	----	----	----
1951	----	----	1516,1	1450,5	790,5
1952	----	----	2203,1	2107,8	1148,7
1953	----	----	2210,9	2115,3	1152,8
1954	----	----	2278,5	2179,9	1188,0
1955	3028	1962	1807,2	1729,0	942,3

Source: Kepenek & Yentürk (2000:112) for the various wage rates in different sectors.

While the findings are compared with the previously studied wages, results are again indicating considerably reliable levels. Although being close to the current wages of industrial sector for 1950's, depending on its own nature, sponge gathering industry and consequently the household incomes should better be compared with agricultural sector.

With respect to the mentioned data which is given for the late 19th century, for twenty years, agricultural wage rates are also indicating values in proximity. On the basis of that information, both for the unskilled labourers and for the self-owned machinery utilised on to the cultivated areas the

range of daily wages are found between 8 to 20 piastres (kuruş) in agricultural production (C.R. 1868:83-84 and C.R. 1888-1889). However, for the late 19th century, as a result of scaphandres utilization, this industry is known being less dependent to the conditions of nature and this fact might have a certain effect on the frequency of the wages earned and consequently on the annual incomes of households. Considering the 20th century, again on the lead of developing technologies, dependency to the weather conditions could be said become less effective for household incomes. While a rising trend to the amount of production has been initiated, it's also suggested by the findings that none of the mentioned technological improvements have completely released the inherent risks of the occupation and the short-termed financial needs of households, which are also posing the distinctive characteristics of the industry. In addition to those, it must be emphasized that the given income estimations is representing a considerably higher values in a comparison with the early 20th century figures. Getting closer to the mid-20th century, findings are suggesting on the lead of increasing exports that the household incomes have been reached two or three times higher values.

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APPENDIX 1: Clarification on Estimations

As it's been explained previously, the export oriented nature of the industry requires a functional relation between the incomes (Y) and the value of exports (X), which can be defined as follows:

$$Y=f(X). \quad (1)$$

Again, the previously mentioned mark-up values (a), which are simply applied to the possession of the gathered natural sponges, are defining the share of incomes into the total monetary value of exports. The same findings are strongly suggesting that almost the whole bulk of gathered products are exported, in such a case the total exports can also be defined as a function of gathered products (T_P) as follows:

$$X \,.\, p_x = (1+a)\, p_p \,.\, T_P \quad (2)$$

where the (p_x) is the export prices, the (p_p) is the price paid to the sponge gathering teams. Also it's indicatively known that the found mark-up levels let the following relation to be defined for the export prices and the prices paid to the sponge gathering teams:

$$p_x = (1+a)\, p_p \quad (3)$$

Knowing that the total income for the sponge gathering teams is the function of their total product and the product is almost entirely exported, the same function can be defined as below:

$$Y = T_P$$

$$T_P \,.\, (1+a)\, p_p = X \,.\, p_x$$

$$Y \,.\, (1+a)\, p_p = X \,.\, p_x \quad (4)$$

The mark-up level denoted by (a) is known also exhibiting the shares of taxes, the additional expenditures required for the marketing process of the product and the profits. While the monetary values of exports and the mark-up level are all known, the monetary value of incomes can be defined as follows:

$$Y = 1/(1+a) \,.\, X \quad (5)$$

The known techniques of sponge gathering are having different productivity levels and all of those found separately identifiable on the basis

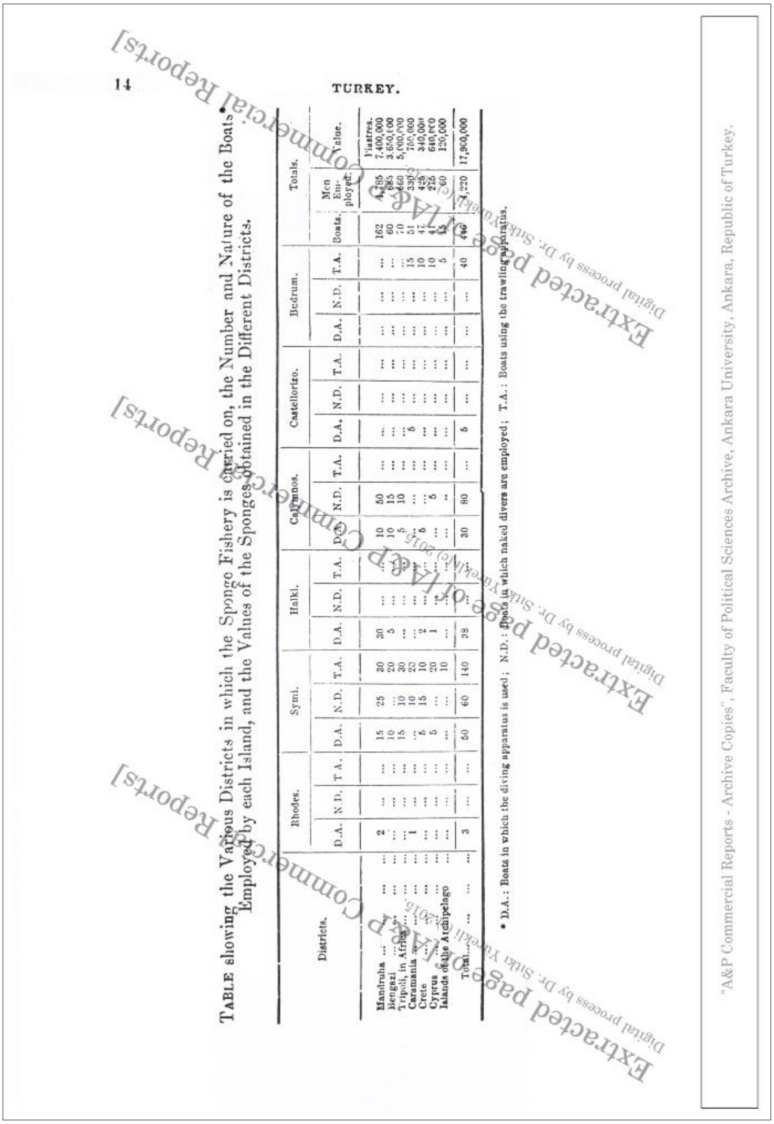
of different technical endowments that each sponge gathering boat is supposed to have on board. There are three different categories of, scaphandres diving, apnist diving and the gangava gathering. With respect to their shares into the total product, which is in monetary values again, these can be defined as follows:

$$T_P = P_1B_1 + P_2B_2 + P_3B_3 \quad (6)$$

Here into this equation, every component is representing the product of a certain genre of gathering, as well as the incomes of each gathering team which utilises different technological endowment, where r_1P is for the scaphandres diving gatherers, r_2P is for the apnist diving gatherers and r_3P is for the gangava gatherers. The rest of the techniques are defined by means of the unit production of gangava boat.

In accordance with the given information found for the gathering crew, number of boats (B) and the total value of product (T_P), under the assumptions of having similar physical capital items and labor for each genre, unit product of boats is calculated by the below set of equations (Figure A1.1).

Figure A1.1 : A&C Consular Reports Extract



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TURKEY.

TABLE showing the Various Districts in which the Sponge Fishery is carried on, the Number and Nature of the Boats* Employed by each Island, and the Values of the Sponges obtained in the Different Districts.

Districts.	Rhodes.			Symi.			Halki.			Calymnos.			Castellorizo.			Budrum.			Totals.		
	D.A.	N.D.	T.A.	D.A.	N.D.	T.A.	D.A.	N.D.	T.A.	D.A.	N.D.	T.A.	D.A.	N.D.	T.A.	D.A.	N.D.	T.A.	Boats.	Men Employed.	Value.
																					Piastres.
Mandruha	2	...	...	15	25	30	30	...	...	10	50	...	...	...	...	...	...	...	162	4,785	7,400,000
Bengazi	...	...	...	10	...	20	5	...	...	10	15	...	...	...	...	...	...	...	60	685	3,650,000
Tripoli, in Africa	...	...	...	15	10	30	...	...	...	5	10	...	...	...	...	...	...	...	70	660	5,000,000
Caramania	1	...	...	...	10	20	...	...	...	...	...	...	5	...	...	...	...	15	51	330	750,000
Crete	...	...	...	5	15	10	2	...	...	5	...	...	...	...	...	...	...	10	47	425	340,000
Cyprus	...	...	...	5	...	20	1	...	...	...	5	...	...	...	...	...	...	10	41	275	640,000
Islands of the Archipelago ...	...	...	...	...	...	10	...	...	...	...	..	...	...	...	...	...	...	5	15	60	120,000
Total...	3	...	...	50	60	140	38	...	...	30	80	...	5	...	...	...	...	40	446	4,220	17,900,000

* D.A.: Boats in which the diving apparatus is used; N.D.: Boats in which naked divers are employed; T.A.: Boats using the trawling apparatus.

$300000 = 3\ P_1 + 0\ P_2 + 0\ P_3$ i.

$7800000 = 50\ P_1 + 60\ P_2 + 140\ P_3$ ii.

$4000000 = 38\ P_1 + 0\ P_2 + 0\ P_3$ iii.

$5000000 = 30\ P_1 + 80\ P_2 + 0\ P_3$ iv.

$500000 = 5\ P_1 + 0\ P_2 + 0\ P_3$ v.

$300000 = 0\ P_1 + 0\ P_2 + 40\ P_3$ vi.

With respect to (n) number of equations, where each of them is given for the total product of sponge-gathering boats that have been registered to various harbours, above set of equations is defined with matrix notations as follows:

$T_P = P\ B$

Based on that definition, the total product (T_P) is given as a function of the number of boats (B) yielding the quantities produced per each boat (P). While the number of boats is known and the total product of each location is also available, the calculation of the product of each boat requires below adjustment for the solution:

$P = T_P\ B^{-1}$

This is clearly given that, four of the above equations (i), (iii), (v) and (vi) are representing unique solutions for the amount of gathered natural sponges by each genre of boat. Regarding to the gatherers utilizing scaphandres equipment these are 100000 piastres for (i) and (v), 105263,2 piastres for (iii). Also it's found 7500 piastres for (vi) which is illustrating the gangava-mirror bucket utilizing boats. Although the given equation set is proposing different strategies for the solution set, the one which is followed into this study is consisting the utilization of equations (ii), (iv) and the remaining variable values which are represented in a consolidated single equation of (vii) and yields below given results:

$7800000 = 50\ P_1 + 60\ P_2 + 140\ P_3$ (ii)

$5000000 = 30\ P_1 + 80\ P_2 + 0\ P_3$ (iv)

$5100000 = 46\ P_1 + 0\ P_2 + 40\ P_3$ (vii)

T_P =		B =				P =			
	7800000		50	60	140		P_1	P_2	P_3
	5000000		30	80	0				
	5100000		46	0	40				

Following these the solution set for the products of each boat which has different technological endowments, p_1, p_2 and p_3 is as follows:

P =	P_1	P_2	P_3
P =	103370.79	23735.96	8623.60

On the lead of same findings, by accepting the gangava-mirror bucket boats as a base for the other two techniques utilised, below identities are defined:

$K_1 = a_1K_3 = 11,99\ K_3$

$K_2 = a_2K_3 = 2,75\ K_3$

$K_3 = a_3K_3 = K_3$

Same equations yield the below shares for each genre of technology (c_{bn}) where the unit share on the base of gangava boats is $u = (1/15,74) = 0,07$:

c_{b1} = (11,99) (0,07) = 0,74

c_{b2} = (2,75) (0,07) = 0,19

c_{b3} = (1) (0,07) = 0,07

Table A.1: Number Of Crew Members

Years	Scaphandres	Apnist	Gangava
Before 1891	15	7	4
After 1891	20	7	4
Circa 1950	25	4	4
Source: C.R. (1891), TOBB (1958).			

For instance, given that the total product is 100 units the 74 units is denoting the share of scaphandres gatherers into the total product, where 19 and 7 units are respectively for the apnist gatherers, the gangava-mirror bucket gatherers. Also, based on the available information the required amount of crew for each technique is known with the given numbers (Table A.1).

Together, utilizing all those informations, the amount of product constitutes the incomes of each gathering technique is divided by the total number of crew employed on the different genre of boats. The total number of boats for different genre of sponge gathering is given as below.

In this case, any given quantity of production which is representing the amount of total income of the sponge gathering crew members (Y) yields the following individual incomes for each genre (Y_n). Here the L_1, L_2 and L_3 are the total number of crew members in each genre of gathering and simply giving the product of the number of boats and the required number of crew members $L_n=B_n\ C_n$ where the number of crew members is given in (Table A.1) and the number of boats in each genre is given into the (Table-A.2).

Table A.2: Number of Gathering Boats

Years	Scaphandres	Apnist	Gangava	Total
Before 1891	100	100-150	100-150	300-400
After 1891	126	140	180	446
1951	28	7	36	71
1952	25	7	20	52
1953	33	9	34	76
1954	26	7	36	69
1955	27	15	29	71
1951	28	7	36	71
Source: C.R. (1891), TOBB (1958).				

$Y_1 = (c_{b1} Y) / L_1$

$Y_2 = (c_{b2} Y) / L_2$

$Y_3 = (c_{b3} Y) / L_3$

Following those, by recalling the equation (5) together with the above given equations and after rearranging them, the household income for any genre of gathering technique is defined as below:

$Y = 1/(1+a) . X$

$Y_n = (c_{bn} Y) / L_n$

$Y_n = [c_{bn} (1/(1+a) . X)] / L_n$

$Y_n = X [c_{bn} /(1+a)] / L_n$

In addition to the given shares, as it's underlined before, a certain mark-up level is considered to be deducted as the share of profits, taxes, and additional expenditures. These are previously given into the Table (5).

Table A.3: Natural Sponge Prices (High Quality) In Local Markets

	Min.	Max.
Producers' Price	80	100
Market Price	100	120
Source: TOBB 1958:29		

Moreover, following the year 1953, because of the previously mentioned reasons regarding to the applied government policies, given estimations are made by utilising an average export price value rather than a certain mark-up level. While the nominal values of exports are under the effect of mentioned variables and exhibiting frequent changes, an average value of 60 T.L. is decided to be substituted for the years 1953 to 1959 to reflect the effect of premiums and the differences between the export prices and producers' prices. However, a detailed analysis and more grained estimations could also be completed once the overall data set is gathered for such a study. Consequently, for any given value of exportation and with a certain mark-up level, for instance taking the years between 1938-1941, the first term yields 1 / (1+a) = 1/(1+3) = 0.25. Thus, incomes of each gathering technique would be defined as follows:

$$Y_s = (0.74/(4))\, X_t / L_1$$

$$Y_a = (0.19/(4))\, X_t / L_2$$

$$Y_g = (0.07/(4))\, X_t / L_3$$

While the total exports are known, the yielded solutions give the household incomes as a base income value which assumes that only one family member has been employed into the sponge gathering industry. Any other option would require necessary readjustment on the number of employed household members.

APPENDIX 2: Archival Sources

A1.1 A&P Commercial Reports:

The sampled extract pages of The Consular Reports which are presented here reside into the T.C. Ankara University Faculty of Political Sciences archives within their copy keeping bindings. This set of documents is available in a well preserved state and kept as one of the main reference materials for likely studies. Among the high number of other research studies referring to the social and economic findings for the Western Anatolia and Aegean Sea, Kurmuş, (1974 [2007]), Pamuk (1984) and Syrett (1988a, 1988b, 2001) are known initially utilized the same sources. The same documents were again exhaustively analyzed in the same years by various researchers including Dertilis (1990) within one of author's early article. As a reputable source of archival information, the same historical sources are always appealed by various researchers even within the recent years, for research works which have different contexts. The frequent utilization of the archival materials as primary source of information, is something certainly known effecting the current state of named sources and because of which the printed materials often requires additional care for their preservation. The same reason also enforces the researchers to revise and apply adjustments for restoration purposes to improve the visual utilization of the scripted information. The presented copies are extracted from the mentioned bindings of the Accounts and Papers collection. While these were prepared for print, the extracted pages were copied by using photography and then after processed by image processing softwares. The final submissions of the extracted pages are amended to the articles with the given indications of reference points. These are including the library information and the extracted state of the material to assure the clarity that might be required for possible further references.

A.1.2 The National Library Collections

The second set of archival material which mainly refers to more contemporary times of the Republic of Turkey economy and the natural sea sponge gathering industry is again found available in the Republic of Turkey National Library collections. These are constituting certain series of annual reports enclosing information on the minutes of meetings, the financial statements based on the SünTAŞ accountancy records, the establishment contract, as well as the several other official publications on the industry. All of these are again residing into this component of research. The imprints of the sponge gathering diving profession, with an appreciation detailed as a fairy story in comics style publication, also resides into the same set of

sources. The named source of archival materials which are in public access within the library collections for the researchers are all in a fairly good state for further research, however the photocopying of the archival material is again requested for extraction purposes, which is a certain factor effecting their visual utilization. As the second main component of the named research this set is available entirely in Turkish language. In that favor the sampled sources are detailed as follows.

- The Periodical Journal of "Balık ve Balıkçılık" (Fish and Fisheries) which was printed by the government Institute of Meat and Fisheries for the purposes of knowledge improvement in the named industries. This publication is mostly enclosing articles which aim to introduce new production techniques, or new products and the research results on likely subjects. Additionally, the emerging markets, as well as the promising production possibilities are all found discussed within the articles printed in the series. The detailed sector analysis for the subject goods and services are also found printed along several issues into the same periodical.

- The Ministry of Economy Fisheries Institute Report on "Sünger ve Süngercilik" (Sponge and Sponge Gathering) which is enclosing the introduction on the sea sponge species and its production. The enclosure is given on the basis of historical findings and the basic biological information about them, their utilization areas as a commercial product and the potential techniques that would be implemented for the sponge fisheries and likely investments with feasibility imprints for the ongoing and promoted natural sea sponge gathering industry. These imprints was identified for the industry in a correlation with the strategic investment areas prioritized in line with the defined revitalization and development policies of the dated period. Beside the information given for the undergoing gathering activities the whole report is found having references to the sponge farming as an alternative production technique. That peculiar enclosure is also prominently giving the similar emphasize as the different publications also aimed in that era, because of the same role which have all been adopted in line with the improvement of knowledge accumulation and in parallel to the economic development priorities of subject years.

- The Information Booklet of "Türk Ak Süngeri" (The White -bleached- Turkish Sponge) is known prepared by SünTAŞ and printed to introduce the Sponge gathering and the natural sponge products. This booklet apparently gives the strong indication of being a marketing piece of work by which the main utilization areas of natural sea sponges as well as the mythical, exciting pinpoints are all highlighted. With its design and the enclosed information, the readers' attention is called to the product of company which is established by the partnership in a joint venture between the two leading

banking companies of the subject era, the İş Bankası and Sümerbank, as it has been given priority within the "First Five Year Industrial Development Program (Plan)" of the early years of economic revitalization. Carrying this essence the enclosed information is found simply aiming to introduce the natural sea sponge with references to the mentioned points.

- The Report Booklet series of "Süngercilik Türk Anonim Şirketi, Alelâde Umumiye Toplantısı" (SünTAŞ Annual Assembly) which are enclosing the minutes of meeting consolidated reports. This set of booklets were all annually printed by SünTAŞ. The named annual publications have been published for public disclosure purposes. Annual reports are enclosing information about various aspects of the undertaken operations in line with SünTAŞ scope of work which has been defined within the "First Five Year Industrial Development Program (Plan)". The information given into these reports is representing the main areas of concerns, the proposed resolutions, as well as the actions undertaken with respect to the defined issues, and the actual state of the progress achieved. Additionally, the accountancy information enclosing the balance sheet as well as the leading consolidated registries in that favour are all found available in the annual series of reports.

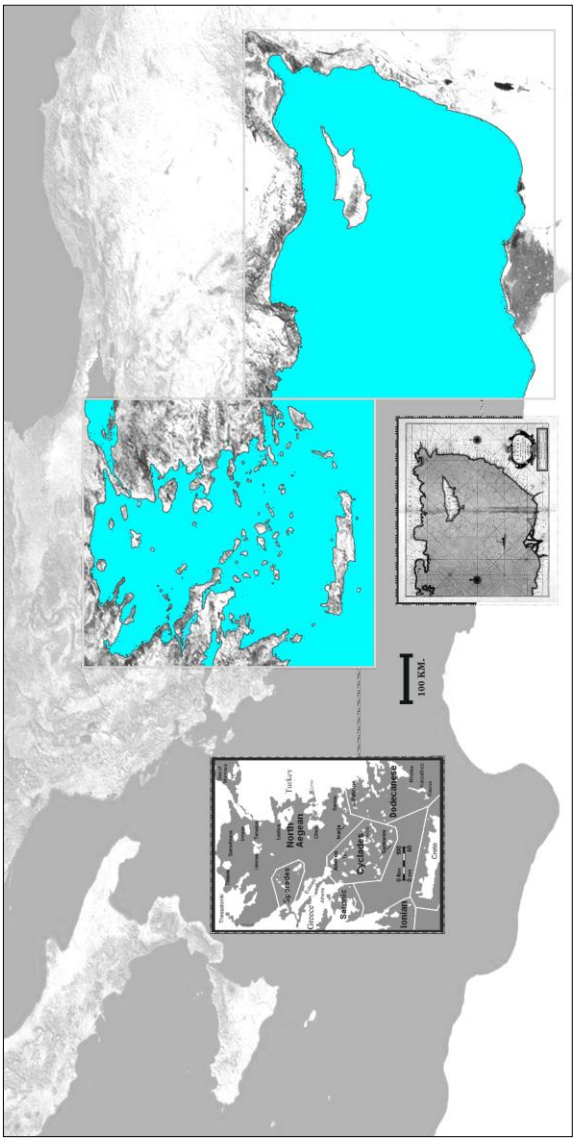
- The Booklet of "Süngercilik Türk Anonim Şirketi Esas Mukavelenamesi" (The Establishment Contract of SünTAŞ) which is again known printed by SünTAŞ for public disclosure purposes and regarding to the establishment of the public company SünTAŞ. This booklet is basically carrying a printed copy of establishment contract which was published with public disclosure purposes and as requested for likely economic entities. As a known legal requirement within its enclosure, this document is simply defining the scope of work, the organization, the roles of participants, their responsibilities, the legal statue of the company, and the rest of the clarifications in parallel to the establishment process.

- Another source is one comics style book written on a fairy tale about sponge gatherers, the "Sünger Avcıları" (Sponge Gatherers) which is printed by 1958. This small booklet as a literature piece of work has indicative references to the common perception about sponge gatherers and their lives. In that shape it is accepted as a scripted work which has the amplified points of interest with its connoting descriptions, narrations on the knowledge in commonality for the years that the research subject is discussed. With its aimed audience, in the shape of the printed material, it is quite explicit that the story has been written down with a selective attitude which is supposed to be balanced between goods and bads in expressions while introducing another sphere of the life to its audience. Beside the scripted theme, the details given as imprints of the remaining glimpses for

the real life practice ongoing into the industry of natural sea sponge gathering, are carrying particular highlights as reference points.

The above mentioned sampled archival sources are all found in a well preserved state with some exceptional cases having some material loss depending on the binding process. The library copies of the sampled material have been reproduced by photocopying and all of which are processed after digitalized by scanner device. The final submissions of the extracted pages are amended to the submitted research articles with the given indicators of above mentioned reference points and indicators of their final states reached after the undertaken digital process.

APPENDIX 4: Sponge Gathering Locations



Source: See information notes.

Information notes:

The Geographical Information about the Islands residing into the archival materials:

Known Names of Islands	**Coordinates**
Crete	(35:18'40 N 24:28'09 E)
Castellorizo (Megisti, Meis)	(36:08'00 N 29:35'04 E)
Rodos	(36:10'01 N 27:59'55 E)
Halki	(36:13'55 N 27:34'02 E)
Tilos (İlyaki)	(36:25'56 N 27:22'30 E)
Symi	(36:35'54 N 27:49'57 E)
Calymnos	(36:59'14 N 26:58'41 E)
The Sporades Archipelago (Skiathos, Skopelos, Alonissos, Persitera, Kyra Panagia, Gioura and the rest of the smaller islands residing within the given coordinates.)	(39:13'21 N 23:55'00 E)

Shoreline References:

Reference Names in Archival Reports	**Coastal Region**
Caramania (Karaman):	The Southern Mediterranean coastal line of Anatolia. The main known ports in the named region are Antalya, Alanya, İçel and Cyprus. The Cyprus has been mostly emphasized with the same name in archival sources, where the rest of the mentioned ports would be found with different names. The herein mentioned are their official names in Turkish language.
Egypt (Mısır):	The coastal line of the Africa on the Eastern Mediterranean.
Syria (Suriye):	The coastal line of the Middle East on the Eastern Mediterranean.

Approximate distances between the Islands and the Mainlands:

From	To	Approximate Distance	
Caramania (Antalya)	Cyprus	232 kilometers	
Cyprus	Africa (Syria)	152 kilometers	
Smyrna (İzmir)	Sporades Archipelago	270 kilometers	
Caramania (Antalya)	Rhodos	244 kilometers	
Smyrna (İzmir)	Rhodos	374 kilometers	
Egypt	Crete	250 nautical miles (as depicted in archival material).	
Anatolia	Port Syria	450-500 nautical miles (as depicted in archival material).	

The Copyright Notices and Source References for the Embodiments of the Map:

1. The Creative Commons Copyright Notice Guidelines: (https://creativecommons.org/licenses/by-sa/3.0/de/legalcode).

2. Base Mediterranean Map: NordNordWest/Wikipedia, "Mediterranean Sea Location Map), (https://commons.wikimedia.org/wiki/File:Mediterranean_Sea_location_map.svg), (last visited 10.01.2017).

3. The Levant, Caramania Map: Wikipedia, "A Chart of Levant or the Sea of Egypt, Syria, Caramania and the Island Cyprus", (https://commons.wikimedia.org/wiki/ File:A_chart_of_the_LEVANT_or_the_sea_coast_of_Egypt,_Syria,_Caramania_and_the_Island_Cyprus_NYPL1640678.tiff) (last visited 10.01.2017).

4. The Aegean Sea Map: "The Sporades Archipelago", (https://www.wikipedia.org/sporades) (last visited 10.01.2017).

APPENDIX 5: Natural Sponge Exports (1865-1899)

Years	Shipment Units	Quantity	Value of Exports	
	(Various)		Sterling Pound	Ottoman Piastre (Kuruş)
1865	bales	3081	93668	13675528
1866	bales	9070	237785	34716610
1868	bales	10360	237690	34702740
1869	cases	9600	104260	15221960
1870	cases	6014	90210	13170660
1871	cases	5550	61000	8906000
1872	cases	4210	42100	6146600
1873	cases	16311	163110	23814060
1874	cases	11298	115200	16819200
1875	cases	14300	165400	24148400
1876	cases	13119	204433	29847218
1877	boxes and sacks	13136	207836	30344056
1878	boxes and sacks	17517	295583	43155118
1879	boxes and sacks	12854	216404	31594984
1880	boxes and sacks	16468	281263	41064398
1881	boxes and sacks	8731	134921	19698466
1882	---	---	106000	15476000
1883	---	---	106000	15476000
1884	---	---	106000	15476000
1885	---	---	106000	15476000
1888	bales and sacks	11547	83138	12138148
1890	bales and sacks	13268	95530	13947380

1891	bales and sacks	13907	100139	14620294
1892	bales and sacks	12022	86558	12637468
1898	libre	417140	33825	4938450
1899	libre	470473	36627	5347542

Source: C.R. (respective years).

APPENDIX 6: Natural Sponge Exports (1925-1961)

Years	Quantity	Value of Exports
	(Kilogram)	(T.L.)
1925	20759.0	113630.0
1926-28	754.0	6513.7
1929	2327.0	14702.0
1930-33	8363.2	57714.2
1941	8300.0	105343.0
1945	22252.0	599286.0
1946-49	25647.3	926342.3
1950	4358.0	140629.0
1951	22749.0	702528.0
1952	21406.0	516786.0
1953	28273.0	688484.0
1954	9618.0	279260.0
1955	26743.0	696089.0
1956	9654.0	318257.0
1957	5403.0	268013.0
1961	27676.0	1998080.0

Source: SünTAŞ (respective years), TOBB(1958), Karapınar(1964).