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DRINKING WATER AND WASTEWATER TREATMENT FACILITIES AND TRABZON SAMPLE FOR COMMUNITY HEALTH

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ABSTRACT

In this study, the importance of wastewater removal and disposal, which is very important in terms of community health, is emphasized. As a result of drinking and usage water consumption and industrial production processes, wastewaters which are very different from each other in terms of water characteristic parameters and water quantities are collected and removed after formation according to the legislation and regulations, and physical, biological and chemical etc. in wastewater treatment plants. (stream, Lake, underground water, to the sea etc.).
In the context of the legislation, it is understood that the wastewaters are supplied to the receiving environment without being purified even in the direction of this study made in Trabzon scale with statistical and real inventory. Many wastewaters in settlements are also discharged into rivers (sea, ditch) uncontrollably. The general situation in Turkey is also seen in Trabzon Province. In Trabzon, it has been determined that the public institutions and organizations are giving the wastewater to the receiving environment uncontrollably.

In the literature, it is understood that the rivers in Trabzon and its vicinity and the Black Sea are contaminated by solid wastes, wastewater and water from agricultural struggle.
The existing wastewater collection network in the city needs to be monitored in a controlled manner. The wastewater must be purified and discharged to the receiving environment in absolute terms depending on the conditions of the receiving environment. It has been seen that the wastewater treatment discharges made are not competent and rational. It was observed that the

wastewaters were collected by sewage and given to the rivers near the settlements all over the river basins. At the same time, the sources of the river were understood to be sources of drinking water, and the water sources were surveyed farther away from the city.
In terms of community and public health, it is necessary and necessary to put wastewater sources under control and to set the conditions of the country for the wastewater treatment plant.

Key Words: Pollution, Trabzon Province, Wastewater, Community Health

INTRODUCTION

Unit water consumption is generally a function of life standard. For this reason, more water is consumed in developed countries. Increasing population, excessive migration from villages to cities, distorted urbanization, change in philosophy of social life are increasing with increasing amounts of wastewater from residents, institutions and establishments as well as industrial and industrial wastewater.
If these wastewaters cannot be removed without harming the surrounding fauna and flora, they create great obstacles in terms of environment and community health. The greatest characteristic of the wastewater is that it must be disposed of immediately after its formation. It never comes to be held. The biological deterioration is logarithmic and the treatment is very difficult if it is kept waiting. There is also a requirement that the precipitation waters coming from the municipal regions should be taken away in the combined system and discrete removal channels. When it is not removed, it is difficult to walk on streets and streets during heavy rain, and the basements of houses and workplaces in low-lying districts are under water. For this reason, it is necessary to remove wastewaters and rainwater from the built-up area by constructing a discrete or combined system sewer network. If the wastewater from households and industrial and industrial wastewaters and meteorologically falling precipitation water is removed in the same channel, the combined system sewage is called as separate system sewage if it is removed by separate channels (Figure 1).
The selection of the sewer system considers the economy, environment and public health and other technical aspects. The architectural sculpture and density of the mountainous region, the topographic and geological structure of the settlement, the underground water level and the condition of the receiving environment are factors that are very effective in system selection.

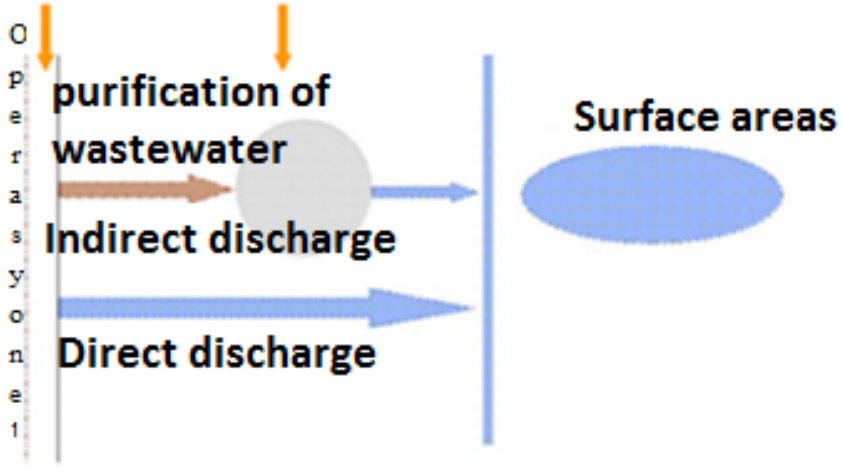

Figure 1. Waste water is supplied directly or indirectly to the receiving environment

Because rain water creates a flow load of 50-100 times more than the wastewater. For this reason, it is of great importance to prevent the joining of roof gutters and road gutters to the waste water ducts in any way during construction or operation of the gutters in the construction of the discrete system sewage.

Urban Sewerage System and Service Population Population When considering the data taken from TURKSTAT, it is understood that there is no sewerage system in all the districts and municipalities. As of 2012, about 77 % of the total population is using urban sewage system. It is understood by this channel connection rate that too much of the wastewater is supplied to the receiving environment.

Water is one of the basic items of life. In addition to being a nutrient, water plays an unbelievable role in the realization of all kinds of biochemical reactions in our bodies with the minerals and compounds it contains. Starting with the maintenance of the pH balance of the body, the molecules in the cells and organelles form the dispersing medium; Food, and waste to the relocation of materials (Table1)..

Due to the substances in the wastewater, the pollution of the receiving environment occurs. In the table, the adverse effects in the aquatic environment due to the group of the atmospheric substances are revealed.

Table 1. Water content and its effects

Article groups in wastewater	**Sustainable and collapsible Material**
Precipitable and precipitable substances	Sludge formation, Degree of decay, oxgen depletion
Dissolved or suspended biological precipitable organic matter	Depletion of oxygen, impairment of biological equilibrium (primary charge), Eutrophication.
Dissolved organic nutrients (Nitrates, Phosphates)	Oxygen withdrawal, Fertilizer plant, Degradation of biological equilibrium (secondary charge), eutrophication.
Dissolved organics and biodegradable substances that are psychologically polluting	Poisoning statements, degradation of biological equilibrium, plant degradation, difficulty in drinking and potable water treatment.
Soluble harmless inorganic substances	High cost of drinking and utility water treatment, making the use of industry and industry water difficult.
Acids and Bases (pH-value)	The difficulty of plant and animal life

2. Water Pollution in General in Turkey

The water pollution in Turkey and the pollution were compared with the province of Trabzon. In coastal cities with population density in Turkey, there are river and sea pollution.

In studies conducted for water pollution throughout Turkey, it is understood that one of the priority problems is water pollution (Figure 2). In Turkey map given in Figure 2, the priority of water pollution is given according to colors. Water pollution is the primary problem in most of Turkey. The first priority problem in Trabzon province is water pollution. Wastewater discharges are one of the most important issues in the contamination of waters. The wastewater is not treated and uncontrolled in the receiving environment (streams, seas, lakes, etc.) so that the water bodies in the receiving environment are contaminated and can not benefit from any of these waters. In order to protect surface and underground waters, it is absolutely necessary to treat wastewaters legally. Table Turkey's Municipal Wastewater Indicators between 2006-2014 were given. According to this table; The ratio of the population served by the sewer network to the total municipal population is seen to increase. In addition, there has been an increase in the amount of wastewater discharged to the receiving environment.

Figure 2. Turkey Water Pollution Priorities Map and Trabzon Province Situation

2.1. Water Pollution and Wastewater Treatment Plant in Turkey

The number of wastewater treatment plants for domestic, industrial and other wastewater in Turkey is not sufficient. The existing wastewater treatment plants are also primary treatment. Thereafter, it is discharged into the sea and there is dilution in the sea environment and some purification. Wastewaters are discharged into surface waters in places without coast to sea.

Water quality is as important as the amount of water to meet the basic needs of human and ecosystem. However, nowadays and in the past, investment in water quality, scientific study and public interest have not been as important as they are in water. In the management of water resources, besides the amount of water, the quality of the water should be increased urgently. In poor quality, water causes many economic, social, environmental and health-related problems (eg declining agricultural yield, industrial production and tourism, increased costs of water treatment, increased poverty, etc.). It is expected that the water availability will be further restricted in the coming years and at the same time problems and costs related to the quality of the existing water will increase. Socio-economic development depends on water quality.

According to the table 2 the amount of wastewater given to buyers during 2006-2014 has increased but most of these amounts are discharged to rivers. Drops of water levels in existing rivers have caused water withdrawals for different purposes (energy, irrigation, drinking water and production etc.) from rivers, and consequently water levels have fallen. As a result of this decrease, it is understood that the amount of oxygen is increasingly increasing in the heated water.

Table 2.Municipal Wastewater Indicators Between 2006-2014 in Turkey

	2006	2008	2010	2012	2014
Total Number of Municipalities in Turkey	3225	3225	2950	2950	1395
Number of municipalities serviced by sewer network	2321	2421	2235	2300	1309
Ratio of population served by sewer network to total municipal population (%).	87	88	88	92	90
Amount of wastewater discharged to receiving environments (million m^3 / year).	3367	3261	3582	4073	4297
To the sea/ overboard	1523	1458	1499	1843	1915
Lace-slough	46	67	76	75	94
River	1411	1404	1741	1817	1899
Land	121	50	35	36	18
Dam	122	115	130	114	121
Another	145	166	101	187	250
Amount of wastewater treated in wastewater treatment plants (million m^3 / year)	2140	2252	2719	3257	3484
Average amount of wastewater discharged per person per day (liter / person / day)	181	173	182	190	181

Unfavorable water quality pose a risk to human and ecosystem health; Thus worsening water quality threatens socio-economic development. Ecosystem health has traditionally been a topic of rich / developed countries and environmental movements around them. However, increased awareness of the importance and importance of the benefits and services provided by ecosystems; Ecosystem health ensured that socio-economic development was adopted as an important element and thus considered an important issue in the poorer countries. It is estimated that 80% of the world-wide water is not collected or treated by sewage.

In addition, great efforts must be made to prevent industrial pollution. The development of clean technologies and substitution processes is an important element in the development of cost effective treatment technologies. Control of non-point pollution sources, especially nutrients that lead to eutrophication, is an increasing global problem. According to 2010 TURKSTAT data, 73% of the total population in Turkey (88% of the population included in municipal boundaries) has access to sewer systems. The proportion of the population served by the wastewater treatment plant was 10% in 1994, compared to 52% in 2010 (62% of municipal population). In 2010, the amount of wastewater discharged from the sewerage networks was 3.6 km^3 / year, and approximately 75% of it was discharged and treated.

Of the 147 organized industrial zones in Turkey, only 41 have operated wastewater treatment plants (TÜİK, 2010). One of the factors that cause environmental pollution in Turkey is industrial activities. Industrial wastewater is about 1% of the total discharged wastewater, but materials such as mercury, lead, chromium and zinc, which have a high toxicity content, constitute a great threat. The adverse effects of industrial activities are more harmful to the environment than the adverse effects of other activities. According to TURKSTAT 2008 Industrial Group and the results of Waste Water Discharge According to Treatment Status, 1 km3 of wastewater was discharged and 16% of it was treated and 84% was discharged to the receiving environment without treatment. As stated in the Turkish State of the Environment Report (2011), among the main reasons for Turkey's deterioration in the quality of its water resources are; Excessive use of natural resources, uncontrolled and irregular industrialization activities and urbanization, domestic and agricultural activities. Measures to be taken after the sources are contaminated are more difficult and expensive.

Elements that lead to pollution of freshwater resources in Turkey; Urban wastewater should be searched or partially purified, contaminated groundwater of leachate waters from sewage and solid waste piles, surface waters of agricultural chemical and chemical fertilizer residues in soil and

irrigation canals and mixing with aquifers. It is very gratifying that Iyidere stream which is not influenced by domestic wastewaters originating from the settlement on the side of İyidere and 19 tea factories existing in various sizes is still in the first class. Having no effect on the area of a river with a tea farming basin is a little thought provoking.

2.2. Solid Waste Priorities In Turkey

Turkey has very important contributions to the pollution of water resources of solid wastes. It is important to keep the development of solid wastes looking good, to store them in the wild, to not be able to regularly operate solid waste disposal sites, problems of deep sea discharges, not to operate wastewater treatment plants efficiently, The aquatic environments are polluted because of the situations. Figure 3 shows the Waste Priority Map in Turkey and the Trabzon Situation. In Figure 3, it is understood that a large number of solid wastes in Turkey cause a primary environmental pollution. Solid wastes in Trabzon Province are understood to be in 2nd priority order.

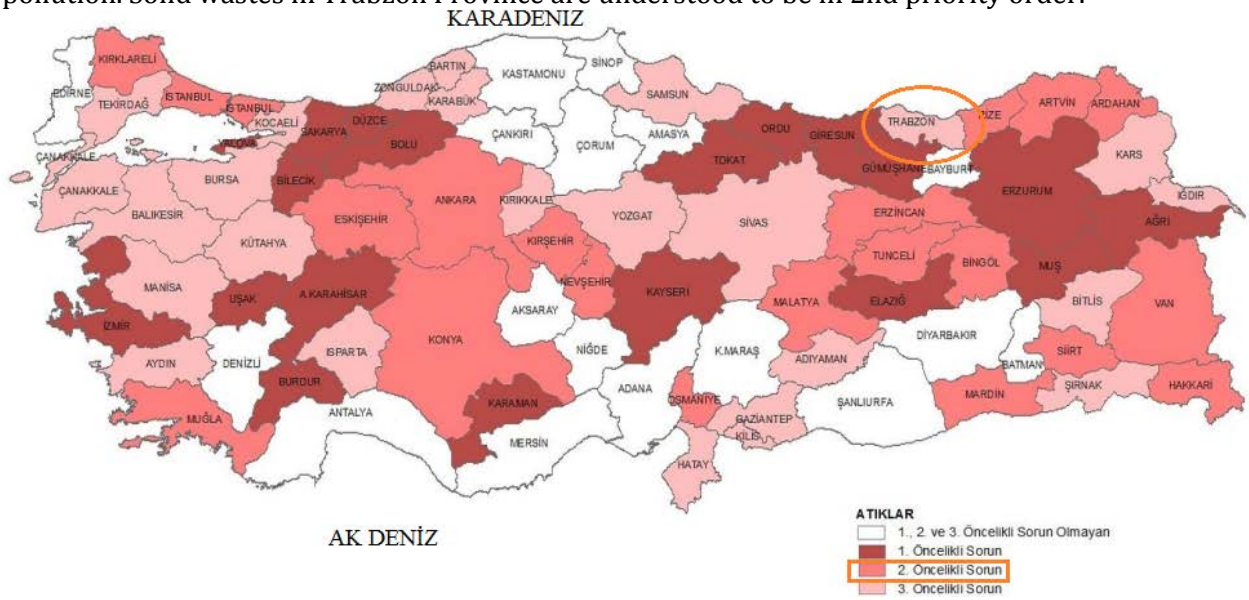

Figure 3.Waste Priority Map in Turkey and Situation in Trabzon

2.3. Soil Pollution in Turkey

Soil pollution is very important in water pollution. Soil contamination and contamination in surface water and underground waters are mentioned. Air and soil contamination are components of water pollution. Soil contamination can be the result of exposure to dirty air from rainwater coming from the air (Figure 4). Pesticides used in agricultural activities, agricultural sunny fertilizers, large solid wastes left to the soil, mining activities, unplanned settlement and so on. For reasons.

Figure 4.The Most Significant Map of the Causes of Soil Pollution in the Provincial Borders in Turkey and Trabzon Province

3. Trabzon City Water Pollution

Figure shows the most important source map of soil pollution in the province borders in Turkey and shows Trabzon Province. In this map, it is understood that soil pollution in Trabzon province originates from unplanned construction. 85% of the population in Turkey lives in the provincial centers. The population density in Trabzon is approximately 168 people / km².

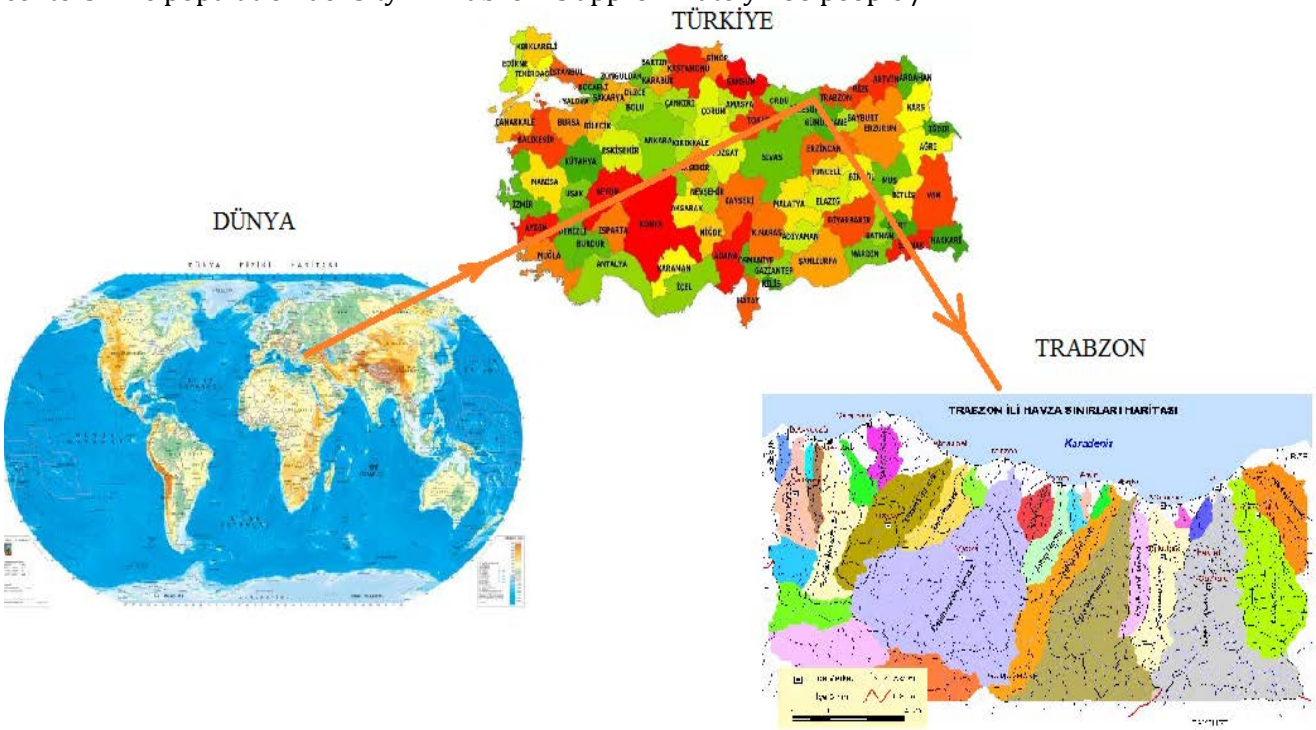

Figure 5. The location of Trabzon City in Word and Turkey

Which question is the most important global problem in the question asked in a survey conducted in the city of Trabzon? As a result of this question, 237 people gave 47% global warming response. The frequency is 42% and the environmental pollution is highlighted by 8,4%. Sea and air pollution was 3, 0.6% and 15% 3 respectively. Distortion of ecological balance from answer choices was also found to be significant with frequency 47 and 9.4%. This data shows that pollution increases. When we look at the components of water pollution it is understood that it is followed by air and soil pollution. With the geographical location of Trabzon city and with its population density and houses and the transportation vehicles following it, air pollution, soil and water pollution are experienced. Especially sea and river pollution is experienced (Figure 5).

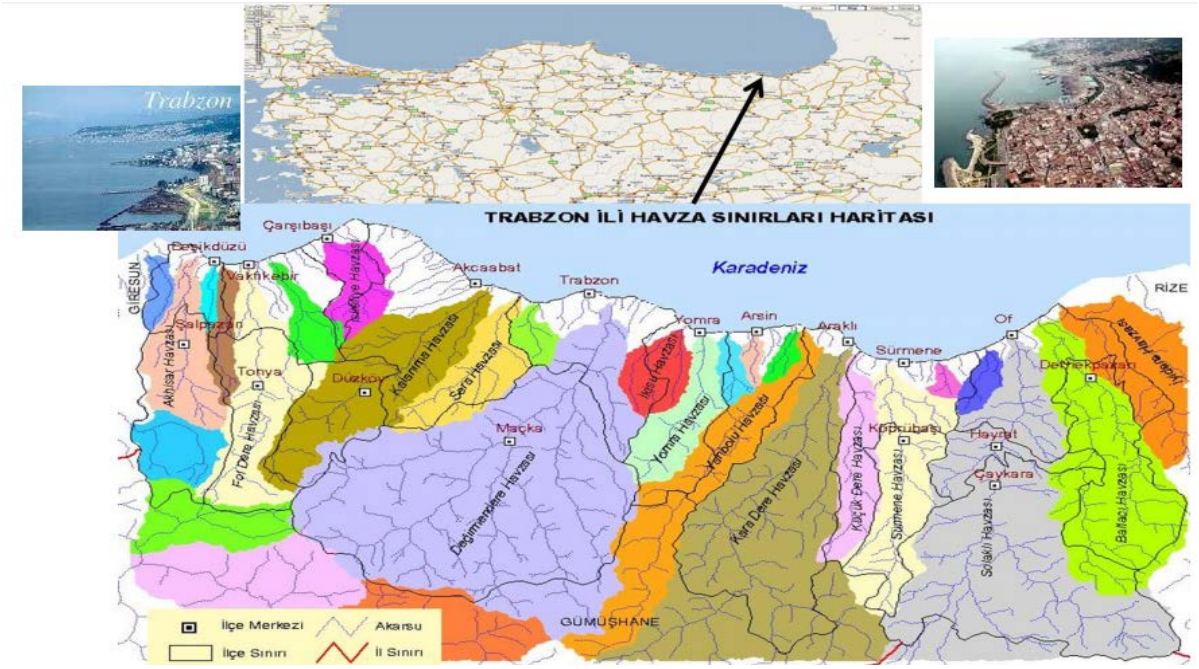

Figure 6. Trabzon City River Streams

In addition, the population of Trabzon City Rivers is changed by the breeding work. The most important breeding work has been done in Değirmendere and still continues (Figure 6). With this breeding work the stream bed was mixed very much and some changes were made in the flow rate of the stream by making the most cross-section and base arrangements in places. The river was also cut off from the groundwater connection. In this state, too, the stream has become a biological life-span.

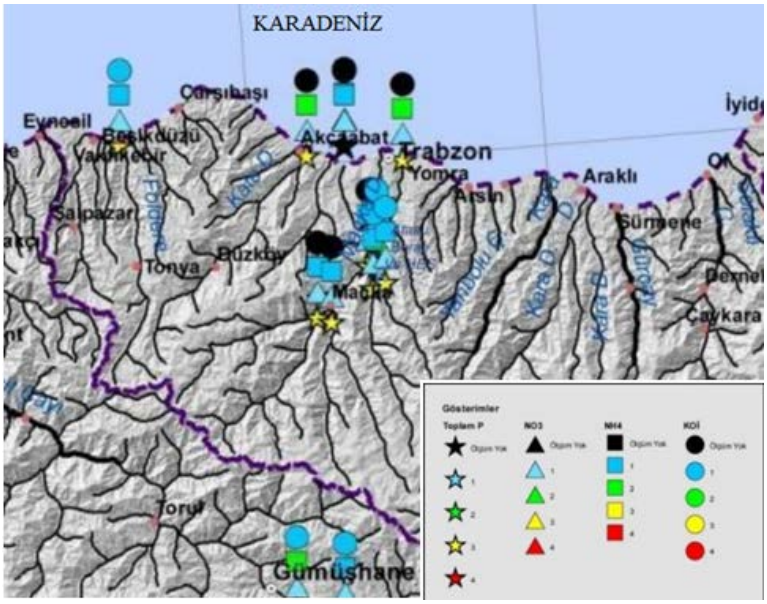

Figure 7. Water quality classes according to the important parameters (COD, NH_4-N, NO3-N, TP) in the Eastern Black Sea Basin

It has been determined that total P, NO3, NH4 and COD pollution in the water in Değirmenendere Creek in the Trabzon province and in the coastal area of the Black Sea.
In the evaluation of priority environmental problems, as of 2012, water pollution in Trabzon province was determined as the most important pollution in order to prioritize environmental problems of the provinces (Figure 7).

3.1. Trabzon City Wastewater Management

In the Trabzon districts only the deep sea discharges discharge the wastewater to the marine environment. Physical, biological and chemical wastewater treatment facilities are not yet available. The percentage of sewerage connected to the city's deep discharge systems is also quite small. It is given to deep-sea discharge in uncontrolled wastewater that is concentrated in some institutions and organizations.
There is no wastewater treatment plant in Trabzon city district municipalities. The wastewater is supplied to the sea by a primary treatment. As you can see in the table, very few of the district municipalities have discharge systems. The sewage connection rate is also low in these facilities.

Table 3. Trabzon Municipal Sewerage System and Service Status (Trabzon Metropolitan Municipality, 2014) and Waste Water Receiving Environment

Row number	Municipality Name	Municipality Population	Sewerage Infrastructure System Rate (%)	Municipality Population Due to Wastewater Treatment Plant	Wastewater Treatment Plant Status Yes / No / In Construction	River to which wastewater is given
1	Trabzon Metropolitan	766.762	54	451.530	11 Deep Sea Discharge System, There are 2 Physical-Biological Wastewater Treatment Plant work	East Blacksea
2	Akçaabat	115,930	68	75.360	2 Deep Sea Discharge System	East Blacksea
3	Araklı	47.960	60	28.776	1 Deep Sea Discharge System	East Blacksea
4	Arsin	28.208	65	18.335	1 Deep Sea Discharge System	East Blacksea
5	Beşikdüzü	21.870	60	-	1 Deep Sea Discharge System	East Blacksea
6	Çarşıbaşı	15.596	58	9.046	1 Deep Sea Discharge System	East Blacksea
7	Çaykara	13.654	30	-	There are 1 Physical-Biological Wastewater Treatment Plant work.	Solaklı Deresi
8	Dernekpazarı	3.803	30	-	absent	East Blacksea
9	Düzköy	14.527	62	-	absent	East Blacksea
10	Hayrat	7.631	35	-		East Blacksea
11	Köprübaşı	4.940	20	-	absent	East Blacksea
12	Maçka	24.232	80	-		East Blacksea
13	Of	42.405	73	-	absent	Solaklı stream

14	Ortahisar	314.246	85	267.109	3 Deep Sea Discharge System	East Blacksea
15	Sürmene	26.421	61	16.117	2015 yılında DDD Geçici Kabulü	East Blacksea
16	Şalpazarı	10.903	42	-	absent	Fol stream
17	Tonya	15.217	23	-	There are 1 Physical-Biological Wastewater Treatment Plant work.	Fol stream
18	Vakfıkebir	26.934	67	16.047	1 Deep Sea Discharge System	East Blacksea
19	Yomra	32.934	54	17.764	1 Deep Sea Discharge System	East Blacksea

All wastewaters of the riverside of the city of Trabzon are flowing into rivers. There are not many connections to the sewer system. Due to some wastewater, the drinking and drinking water areas are damaged.

It is understood that there is sewerage service in the majority of the district municipalities connected to Trabzon Metropolitan Municipality from the table but there is not enough degree of wastewater treatment facility. In particular, it is understood that the Maçka district is connected to sewerage by 85%, but unfortunately there is no wastewater treatment plant in this city. When we look at the rate of connection to such a good sewer here, this wastewater is discharged directly to the receiving medium, Değirmendere Stream. It is understood that the sewerage contributed more to water pollution.

The largest municipality of Trabzon Metropolitan Municipality with a population of 314.246 is Ortahisar, and there are only 3 Deep Sea Discharge (DSD) Systems in this district. Although this district is half of the total population, it still does not have an WWTF. 15% of the total population is currently discharging wastewater to the septic tank or river beds. The percentage of connecting sewage in district centers is very low. But it is a very bad situation that no wastewater treatment plant is connected to the sewage system. Although it seems to have been well done by increasing the sewerage rate and omitting the septic tanks, it is understood that the receiving environment is being confronted with greater contamination.

Existing Deep Sea Discharge (DSD) Systems and Physical and Biological Wastewater Treatment Plants (AAT) treatment efficiencies are very low. Over time, these treatment processes are discharged from the various places with the sewer service and the pollution parameter is very high. Moreover, 2 of these Physical and Biological Wastewater Treatment Plant (WWTF) have not been taken into operation yet (Table 3).

One of these is the Tonya District in the Fol Deresi basin south of the Vakfıkebir district. The rate of sewer connection at Tonya is around 23%. The wastewater of this county flows to the Fol Deresi. Similar situations occur in other river basins. Trabzon City Vakfıkebir District Fol Deresi and Surmene District There are people who applied to the hospital due to acute Gastroenteritis from drinking and using water from Sürmene (Manohoz) Stream aquifer. A total of 790 people were admitted to the Vakfıkebir State Hospital within 10 days from the drinking water of 20 L / sec and supplied from 6 waters in the Fol Deresi aquifer in the district of Vakfıkebir in 07.11.2006.

The wastewaters of the important institutions and organizations of Trabzon are connected to sewage without preliminary treatment. In addition, the Organized Industrial Zone (OSB) does not currently have Wastewater Treatment Facilities (WWTF). Organized Industrial Site (OİS) has a

mixed structure and has complex / bad wastewater parameters. These wastewaters are discharged to the receiving medium without any purification (Table 4).

Table 4. Organize Industrial Site (OIS) and Industrial Sites (OS) in Trabzon, together with wastewater treatment plant.

Name of OİS and İS	İlçe	Founded	WWTF
Arsin	Arsin	1995	Started ın/ constructıon ın 2016.
Beşikdüzü	Beşikdüzü	2001	not
Vakfıkebir	Vakfıkebir	1998	not
Şinik	Akçaabat	2001	not
Ayakkabıcılar S.S.	Ortahisar	Unknown	not
Değirmendere-Fatih Sanayi Sitesi	Ortahisar	Unknown	not
Kaşüstü Mobilyacılar Sitesi	Ortahisar	Unknown	not
Büyük Sanayi Sitesi, Hayali S.S.	Ortahisar	Unknown	not
Akçaabat S.S.-1	Akçaabat	Unknown	not
Akçaabat S.S.-2	Akçaabat	Unknown	not

As can be understood from Table 4, there are no wastewater treatment plants in the Organized Industrial Zones existing in the provinces of Trabzon City and industrial sites.
The wastewater from the Industrial Sites and Organized Industrial Zones is supplied to the nearest rivers, the municipal sewer and the Black Sea. The answers given to the questions asked in a pollution survey made on 200 people in Trabzon and the percentages of these answers are given in the table. It is revealed that there is water pollution in Trabzon province in line with the data given in this Table. This data confirms the pollution parameters that were previously measured in rivers and sea water.
It is understood that there are very few places in the Black Sea of Trabzon Province where water can be entered at sea according to the sea water pollution parameters that are made every summer. The measurement and assessment data are officially published by the Provincial Public Health every year. In rivers, water pollution increases according to increasing amount of water after rainfall.

Table 5. Causes of Pollution in Trabzon Province Water Resources, 2015.

Causes of Pollution	Answer Percentage (%)
Domestic Wastewater	58
Industrial Wastewater	15
Industrial Solid Waste	8
Domestic Solid Waste	10
Agricultural Activities	4
Maritime Activities	5

In Table 5, it is understood that wastewaters contaminated the water environments mostly in the answers given as causes of water pollution in a survey conducted in the city of Trabzon. In Table 5, it is understood that wastewaters contaminated the water environments mostly in the answers given as causes of water pollution in a survey conducted in the city of Trabzon. According to this, it is understood that those living in Trabzon city approve water pollution.
It is the industrial site of the important aquifer with very high efficient and high quality water reserves provided by the old drinking and usage water in the city of Değirmendere in the city of Trabzon, the Municipal Science Works Directorate, the Automobile Sites, the Shoe Shops Site,

Purpose use has been opened. In this section, Değirmendere stream was narrowed by filling with the most cross section.
There are a large number of existing work sites in Değirmendere River. The river is under the threat of any wastes from these facilities. These are; Hekimoğlu Demir Döküm is a solid waste transfer station belonging to the Trabzon-Rize Solid Waste Association (TRAB-Rİ-KAB), the largest medical waste sterilization facility of the same area (Daily Capacity 8.000-10.000 kg Medical Waste / Day) Coal storage and packaging facilities, Asphalt Plant sites, Ready-mixed concrete sites and other businesses.
There is ATASU Drinking and Drinking Water Treatment Plant which provides drinking water to Trabzon and its districts in Değirmendere Stream. This facility was supplied from raw drinking water and water from Degirmendere, and it is understood that this was abandoned in 2015. Now the water taken from the bottom of the ATASU Dam is taken 800 m from the old stream bed by the regulator at the Galyan point. The water taken with the help of the pipe from the regulator is taken to Değirmendere Derisine along the Galyan River and from there to the ATASU Drinking and Utilities Water Treatment Plant. This ATASU treatment plant is a traditional drinking water treatment plant, with a new addition and an ozonation plant at the entrance to the raw water. The treatment plant produces 140.000-150.000 m^3 (Drinking Water) / (Day) and distributes it to the water reservoirs in the cities with the help of the pipeline.
Trabzon province in the Eastern Black Sea Region, Giresun in the west, Gümüşhane and Bayburt in the south, and Rize in the east. Trabzon is a very mountainous region as it is in other eastern Black Sea regions. 30% of the IU lands are mountainous, 60% are the southward increasing areas with 25-30% slope, and only 10% are flat areas. 59 % of agricultural land is produced by the region's major source of income, hazelnut and tea. The main streams of the province of Trabzon; It is mainly in Değirmendere, Solaklı Stream, Karadere, Baltacı Stream, Akhisar Stream, Fol Stream, Çarşibaşı Stream and Iyidere Stream. Numerous sources and rainy seasons in all seasons feed these rivers. Also, the alluvial areas in the downstream section of the decks are rich in groundwater. As in other Eastern Black Sea provinces, the drinking and usage waters of the township settlements in Trabzon are supplied from these sources.) Trabzon city and Akcaabat and Yomra districts need drinking water, usage and industry water, Atasu Dam and Hydroelectric Power Plant (HEPP) project planned.
As a new source of drinking and usage water for Trabzon Province, Barajdan water will be made at the Maçka District Yaylabasi Der. This water source will be the second water source after ATASU Dam.

3.2. ATASU Drinking and Drinking Water Dam

It started to be built in Trabzon and Galyan Stream between 1998 and 2010 in order to supply energy and drinking water. And the construction is completed now that the dam is full of capacity. Concrete and rock body fill type dam body volume 3.800.000 m3, river bed height 116.00 m. The lake volume at normal water level is 37,75 hm3, the lake area at normal water level is 0,83 km^2. The dam provided 91 hm3 of drinking water annually, while at the same time an annual energy production of 27 GWh with 5 MW power was considered, but it was unknown. Pipe for HEPP was manufactured for HEPP. But the building of the power plant is not built. Drinking water will be taken from the gravity pipe and water will be transported to the newly constructed drinking water treatment plant. If energy production was to be done, raw water would be provided from the plant's tail water to the drinking water treatment plant.
The Galyan Stream, a branch of Değirmendere Deresi, constitutes the source of this project and the Atasu Dam built on this source is already in need of drinking water. According to the Trabzon Provincial Environment and Situation Report (2008), drinking water is generally obtained from the Atasu Dam located on the Galyan Stream in the whole province and is supplied from the aqueducts through the deep wells, especially in the downstream sections of the river basins where drinking and usage water rivers reach the sea. It is stated that these waters are used without any purification except chlorination (Figure 8).

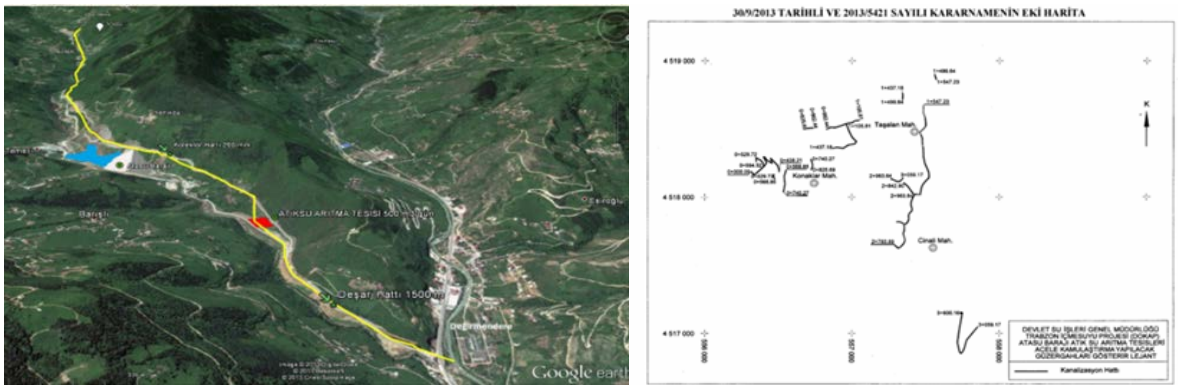

Figure 8. Trabzon Drinking and Drinking Water Purpose Galyan Dam (HEPP Program) - Wastewater collection project

Sewerage construction in settlement areas of Galyan Stream vault is still continuing. To this end, septic tanks have been manufactured as leakproof concrete in the residential areas and they are to be treated in a wastewater treatment facility which is carried out with the help of a screwdriver, to be discharged to Kalyan, a sidewall of Değirmendere River (Figur 8).

Özbektaş, S., aimed to determine the quality of the stream with the samples taken by the ATASU Dam, which provides water for drinking and usage in Trabzon, for about one year (in 2015) from three different points of the river carrying the water. Stations; Kalyan Stream-Temelli, Kuştulderesi-Değirmen and Kalyan Stream-Çiftdere. The station with the highest nitrate measurements was identified as Kuştul Stream, which is why it is said that agriculture is more intense in this basin. Özbektaş, S., (2015) also gave a comparison of the annual mean values of nitrate nitrogen measurements taken in 2014 from these locations with the years 2011, 2012, 2013 and 2014. It has been determined that NO_3 and NO_3-N values change between 1.46-2.35 mg / L in 2014 and 2015.

According to this data, annual mean pollution parameter values seen in current and observation stations did not show any significant difference with years.

However, the construction of the area has been increasing and the application of septic tanks has been started. It is not known where the wastewater discharged from the sidecar is discharged. There is no record on this subject.

As such, river basins are threatened by land from agricultural activities and from point sources of pollution coming from houses and industrial facilities. This basin is also located in some institutions and establishments near the aquifer of Degirmendere.

In the city of Trabzon, wastewater sewerage, rainwater drainage and systems for their removal are still the most important of the urban infrastructure. Ultimate purification of these systems and discharging to appropriate receiving environments suddenly or with delay is also very important. There are quite a few shortcomings in the whole of the coastal municipalities. In addition, solid waste incineration in the form of wild fillings on the Black Sea coast before 2016, solid waste incineration in the river valleys and seawater and river pollution in the grounds of solid wastes and construction rubble casts made on the filling fields made for the purpose of winning the field on the Black Sea coast. Of course at the same time there is also visual pollution in places where waste is stored.

The city of Trabzon has been established linearly on the Black Sea coast and the construction of this area continues increasingly. Airports, Trabzon Harbor and many other institutions and establishments in the Black Sea coast are the Regional Directorates, guesthouses and entertainment and recreation centers. In most places there are hotels for tourist purposes. It is very obvious that the wastewater from these facilities is directly and sometimes due to the Black Sea.

3.3.Trabzon City Wastewater Reclamation and Reuse

Most of the ready mixed concrete facilities, marble workshops and coal screening and storage facilities in Trabzon province set up a recycling treatment plant for the wastewater originating from their operations, preventing wastewater from receiving and discharging the wastewater, They reuse it for jobs. In our city, 10 companies use recycled wastewater treatment plant and waste water again.

Table 6. Quality Classes and Contamination Causes of Pollution in the Context of Water Pollution Control and Regulations of Surface Water in Trabzon City Boundaries

Surface Water	**Water Quality Class**				**Causes of Pollution**			
	I.	**II.**	**III.**	**IV.**	**Domestic Wastewater**	**Domestic Solid Waste**	**Industrial solid and liquid Waste**	**Agricultural Activity**
Çimenli Streams					X	X	X	X
Karadeniz					X	X	X	X
Uzungöl					X	X	X	X
Sera Gölü/ Lake					X	X	X	X
Ağasar Sterams/Beşikdüzü					X	X	X	X
Fol Streami/Vakfıkebir					X	X	X	X
İskefiye Stream/Çarşıbaşı					X	X	X	X
Söğütlü Stream/Akçaabat					X	X	X	X
Değirmendere Stream/Trabzon Merkez					X	X	X	X
Şana Stream/Yomra					X	X	X	X
Yomra Stream/Yomra					X	X	X	X
Yanbolu Stream /Yeşilyalı Arsin					X	X	X	X
Karadere Stream /Araklı					X	X	X	X
Küçükdere Stream/Araklı					X	X	X	X
Manahos Stream/Sürmene					X	X	X	X
Solaklı Stream Kıyıcık/Of					X	X	X	X
Baltacı Stream/Of					X	X	X	X
Beşirli Stream/Merkez					X	X	X	X
Kisarna Stream/Merkez					X	X	X	X
Ballıca Stream					X	X	X	X
Zağnos Stream					X	X	X	X
Zaferli Stream					X	X	X	X
Ganita Stream					X	X	X	X
Hayali Stream					X	X	X	X
Hamsi Stream					X	X	X	X
Kalkınma Stream					X	X	X	X

It would be appropriate to treat Trabzon city water pollution as river and sea water pollution. When we look at the components of water pollution it is understood that it is followed by air and soil pollution. With the geographical location of Trabzon city and with its population density and houses and the transportation vehicles following it, air pollution, soil and water pollution are experienced (Table 6).
In addition, Trabzon city rivers are being replaced by breeding studies. The most important breeding work has been done in Değirmendere and still continues. With this breeding work the stream bed was mixed very much and some changes were made in the flow rate of the stream by making the most cross-section and base arrangements in places. In this state, too, the stream has become a biological life-span.

4. Beaches and Sea Water Quality in Trabzon

There are 15 beaches in the Trabzon Provincial borders. At these points, sea water quality allows to enter the sea. These beaches are excellent, good, bad, prohibited to enter and new and classified. Only the numbers of those that can be entered are given here (Table 7).

Table 7. Quality Classes and Possible Causes of Pollution on the Regulation of Water Pollution Control Regulation of Swimming Waters in Provincial Boundaries.

	Blue Flag Award.		Swimming Water Quality Class.			Causes of Pollution		
The name of the Beach Area where the Swimming Water is located.	**available**	**absent**	**DI**	**DII**	**DIII**	**Domestic Wastewater**	**Domestic Solid Waste**	**Industrial Waste**
Akyazı Belde Beld. Sahil T(2) (NA)Merkez		X		X		X		
Yalıncak Aile Plajı		X		X				
Söğütlü Plajı		X		X		X		
Darıca		X		X				
Salacık		X		X		X		
Özmersin		X		X		X		
TRT Bölge Md. Batı Kısmı		X		X		X		
Akçakale		X		X		X		
Yaylacık Mahallesi		X		X		X		
Kerem		X		X		X	X	
Belediye		X	X				X	
Kaleköy		X	X					
Yoroz		X		X		X		
Belediye		X		X		X		
Liman Arkası		X	X			X	X	
Belediye		X	X					
Kaşüstü		X		X				
Yeşilyalı		X		X		X		X
Kendirli		X		X		X		X
Kalecik		X		X				
Akasya		X		X				
Çamburnu Mesire		X	X			X	X	
Vaha Mevkii		X		X				
Soğuksu Pınar Mahal.		X		X				
Kıyıcık Devlet Hastanesi		X		X				
Kıyıcık Camii Doğusu		X		X				
Kavak Camii Doğusu				X				

According to Trabzon Provincial Limit Surveys of Fisherman's Shelters; Waste treatment plant, Bilge reception facility, Domestic waste plant, Solid waste reception plant, Wastewater treatment plant, and 25 of them were not found in about 2 of 27 fishermen's barns.

Evolutional Wastewater and Sea Discharge The Trabzon Province (approximately population density: 164 persons / km2) located in the middle part of the Eastern Black Sea Region consists of a narrow underground plains along the coast, mountains and valleys in the inner part; The construction is spreading as intensively as the villagers because of the fact that the central area is narrow on the coast; Due to the appearance of the settlements in the county and the flow directions towards the province center due to the Topography, the municipalities and villages' household

wastewaters and solid wastes are discharged into the valleys and these wastewaters reach the Black Sea.

There are 5 municipalities and many villages in Söğütlü Valley, 3 Değirmendere Valley, and settlements located along the river valleys extending in north and south direction in Trabzon Province. The solution of the sub-structure (sewer) of an upper municipality in the same valley creates pollution for the lower municipality. Due to the fact that the treatment plant is not built due to cost, it creates pollution. When a solution is sought together, the choice of site for the treatment plant causes problems between municipalities. Since municipalities do not show the same sensitivity to these problems, their priorities are very different in the face of problems. It is not economical and ecological to solve the infrastructure problems of these municipalities individually.

For this reason, the need for a solution together between municipalities has arisen so far. By way of example, Trabzon (Merkez), Kaşüstü, Yalincak, Pelitli, Çukurcayır and the sewer system of the Starred and Söğütlü municipalities are located within the same project. As a whole. The collected wastewater was transported to Deep Sea Discharge (DSD) points in Trabzon (Merkez), Kaşüstü, Değirmendere, Söğütlü. Trabzon Ortahisar Municipality borders the Airport, Değirmendere and Debris DSD. There are 2 DSD systems in Akçaabat District and 1 in each district. The facilities of these facilities are very different and they are all type projects. All have a grill, sand trap unit and ventilation. Maçka, Esiroğlu, Akoluk and Çağlayan districts for the polluting domestic wastewater of Değirmendere could not be concluded due to the reservations of the municipalities on the collective collective line and sea discharge project construction works. It is known that this stream has too much industrial structure in the drainage area.

The wastewater generated from these facilities flows directly and indirectly to Değirmendere and reaches the Black Sea via the creek. Akçaköy, Derecik and Star sewer joint collector line and sea discharge project studies were done. The discharge point was planned in Starred. Domestic waste waters of Akyazı, Gürbulak and Yeşilova regions were projected together. The discharge point was planned in Akyazı. Kozluca, Sevimli, Özbirlik, Sayvan and Pınaraltı Villagers are also evaluated in order to protect the basins providing drinking water to Trabzon from domestic waste water. Sewage sludge formed in wastewater treatment systems of industrial facilities located in Trabzon province is not used in the soil. There is no treatment sludge because the purification systems belonging to Local Administrations (Municipalities) are pre-treatment deep sea discharge systems. Solid wastes collected in the sieve parts of the system are sent to the regular storage facility.

In addition, after the dewatering of 75% of the treatment wastes formed in the treatment plants of the enterprises within the scope of Environmental Permit, the treatment mud is analyzed in accordance with the parameters given in Annex-2b "Regulation on the Regular Storage of Wastes" and the resulting mud class is determined and written. But unfortunately, the operating efficiency of the treatment plants is very low. All formed wastewaters are provided directly to the marine environment. There are many Organize Industrial Zones (OIZs) in the coast of Trabzon. This İOZ is a mixed İOZ region. Wastewaters are formed here with very different physical and chemical characteristic parameters. Arsin İOZ, which has the largest and the highest occupancy rate, has just started to work on wastewater treatment plant installation. This İOZ discharges wastewater directly to the Black Sea. The Black Sea is so polluted this way.

5. Causes of Pollution

Reasons for Wastewater Pollution in Provinces / Provinces within the Provincial Boundaries:

a. Inadequate or inadequate sewerage network
b. Treatment of domestic wastewater in residential areas
c. Not refining the wastewater of major industrial establishments
d. No collective refinement in small industries
e. Not constructing septic trenches in a healthy manner
f. Emptying septic tank wastes into places randomly after being pulled by screwdrivers
g. Use of agricultural pesticides
h. Use of chemical fertilizers
i. Inadequate capacity and efficiency of treatment plant

j. Inadequate personnel in the treatment plant
k. Other (For example: Inadequacy of Staff in Wastewater Treatment Plant).

An important aquifer area with very high yield and high quality water reserves provided by the old drinking and usage water of Trabzon city in the Değirmendere stream. Industrial site, Municipal Science Directorate, Automobile Sites, Shoe Shop Sites, etc. Purpose use has been opened. In this section, the streaming was narrowed by filling the cross section with the rehabilitation work of Değirmendere Deresi. There are a large number of existing work sites in Değirmendere Stream. The river is under the threat of all kinds of solid and wastewater from these facilities. The larger ones are; A solid waste transfer station belonging to Hekimoğlu Iron Casting, Trabzon and Rize Solid Waste Association (TRAB-Rİ-KAB) is the largest medical waste sterilization facility (8.000-10.000 kg (Medicine Waste) / Day) Coal storage and packaging facilities, Trabzon Metropolitan Municipality Asphalt Plant facilities, Ready-mixed concrete plants and other enterprises. In addition, Degirmendere has an animal shelter for Trabzon 600-700 animals in Esiroğlu area on the sidewalk, but there is no wastewater treatment plant.
In this basin, ATASU Drinking and Drinking Water Treatment Plant, which supplies drinking water to Trabzon and its provinces, is also available. This facility was supplied from raw drinking water and water from Degirmendere, and it is understood that this was abandoned in 2015. Now raw water is taken from the bottom of the ATASU dam with the help of a regulator and is flowed to the ATASU Treatment Plant with the help of a Regulator by flowing about 800 m at the Galyan Derby. This facility is a traditional drinking water treatment plant, with the addition of a new addition and the addition of an ozonation facility at the entrance to the raw water. The liquidation facility produces 130.000-140.000 m3 (Drinking Water) / (Day) and distributes it to the water depots in the province with the help of the distribution line
Sewerage construction on settlement areas in the valley of Galyan stream continues. For this reason, septic tanks have been manufactured as leakproof concrete in the settlement areas and it is desired to be discharged to Kalyan, a sidewall of Değirmendere, by being treated in a wastewater treatment plant to be carried out with the help of a screwdriver.
As such, river basins are threatened by land from agricultural activities and from point sources of pollution coming from houses and industrial facilities. This basin is also located in some institutions and establishments near the aquifer of Degirmendere.
In Trabzon, wastewater sewerage, rain water drainage and systems for their removal are still the most important urban infrastructure. Ultimate purification of these systems and discharging to appropriate receiving environments suddenly or with delay is also very important. There are quite a few shortcomings in the whole of the coastal municipalities. Furthermore, seawater and river pollution comes to the forefront of the Black Sea coast before 2016 due to the solid waste disposal in the form of wild fill, the solid waste disposal in the river valleys and the solid waste disposal in the filling fields, which is still done to gain the field on the Black Sea side.
The city of Trabzon is linearly established on the Black Sea coast, and this area continues to build up. Airports, Trabzon Harbor and many other institutions and establishments in the Black Sea coast are the Regional Directorates, guesthouses and entertainment and recreation centers. In most places there are hotels for tourist purposes. It is very obvious that the wastewater from these facilities is directly and sometimes due to the Black Sea.

6. Trabzon City Hydrology

Trabzon City is a place with an approximate geographical location and an areal precipitation height (h_N = 929,7 mm) above the Turkish average rainfall averages (h_N = 643 mm). There are also shortcomings in the collection of the waters from these rains and the pouring through the sewers. The city has a complex system of sewerage networks (wastewater and rainwater are communicated together) and the city has a high pollution load due to the superstructure of the road upper structure and other lower structures. The structure of the river, the sea and the wastewater has been removed. Deep Sea Discharge Structures). In these structures, wastewater and rainfall waters are discharged from the grids and after the ventilated sand sedimentation is over, they are

discharged to the Black Sea as terrific and charming. It is 20-30 m from sea level and average sea level. With the help of a pre-treated wastewater umbrella with the help of a diffuser at the sea bottom, the sea water is directed towards the surface and the umbrella wastewater is diluted.

7. Wastewater Treatment and Trabzon Example in terms of Community Health

Trabzon There are settlements in discrete parcels that are not connected to the sewerage in Büyükşehir Municipality. There is an estimated 25% use of septic tanks in the city of Trabzon. - Mixed sewage is used in the province of Trabzon. In the new sewage system, discrete system sewage is used. There is no definite information about discrete and combined system sewage lengths in Trabzon city. The data are estimates and there is no complete inventory run. The advanced biological wastewater treatment plant, location, size, rate of connection, parameters to be treated, and treatment efficiency percentages are considered important in Trabzon. - It is not clear what characteristics of wastewater are not yet known in Trabzon and what to do if the amount and characteristic parameters of the future wastewater to the advanced biological treatment plant are unknown. It is also a separate question whether it will be a coastal syringe or a deep sea discharge which will give rise to a new pollution by giving the treated wastewater to the marine environment of $Q_{Dry\ Air}$ = 200.000 m^3 of treated wastewater.

If foreign water enters the sewer system approximately 2-5% of the normal sewer (channel leaks from the ground)

-Quality should be determined by calculating according to the rational method.

- As of now, Trabzon Public Health Directorate is not allowed to use any water source within the boundaries of Trabzon city Ortahisar Municipality for entertainment and recreation purposes.

- Most aquifers and other sources of raw drinking and potable water are under the threat of wastes and wastewaters and are abandoned. Raw water sources have been transported farther away.

-The situation of the wastewater treatment plants of the institutions and institutions is not in good condition.

-Wastewater treatment facilities have not been constructed in the places where general housing has been built, and increases in spot pollution sources have come to the fore.

The aquifers in Trabzon Province in general and the characteristics of these aquifers are given in the table. The aquifers of all the rivers are used for water and sanitation. These aquifers must be protected. Structures are always built on the aquifers. Especially the Değirmendere basin is very dense. The aquifers of the Trabzon Stream have no characteristics and uses. The waters in these parts have been forsaken.

8. Drinking Water

Treatment In the water reservoirs in the regions solar energy and electrically operated chlorination devices are installed. Within the scope of the work carried out up to now, the installation of 92 chlorine appliances including 43 solar powered fully automatic, 49 manual solar powered and electric power in the whole of Trabzon province has been completed. While automatic chlorination device is planned to be installed in 250 water till the end of the year, it is planned to install automatic chlorination device in all water tanks in the province with works to be carried out in the coming periods. Chlorination is forgotten in missing establishments or the system does not work after freezing. According to the temperature of the water is also tablet corr, liquid chlorine freezing. Often, attention is not paid to the amount of threading. In the premises, the quenching systems appear dysfunctional and are very contaminated.

9. Water Pollution in Newspaper News in Trabzon News in Trabzon

News in the newspapers; "In the inspections carried out until November of 2013 in Trabzon, 1 million noise pollution violation 6 thousand 769 TL, irregular disposal of wastes 112 thousand 375 TL penalty applied to water pollution, a total of 1 million 645 thousand 860 TL administrative penalty is applied. It was reported that a total of 563 audits were planned and complained on until November. "Trabzon is a metropolis, and in Karlik, Ortahisar's neighborhood, muddy water flows

from the fountain of citizens. Trabzon Provincial Health Directorate's 'no smoking' report reported that the watery Karlık'a close to 20 with the kite reached, the people of the neighborhood aspirate the water to Asman Iron, they even drink, he said. Iron said, "They came here wearing a water watch. I will also tear him away, "he said. Mustafa Alkan, "Citizens are collecting money. But they send us muddy water. "

The marsh water flows from the fountains in the Karlik Quarter, which is located in the province of Ortahisar in Trabzon. Residents of the neighborhood where 600 dignitaries and close to 2,000 citizens live have complaints that they can not find a solution even though they report the victimization to the authorities. In Trabzon, administrative penalties amounting to 1. 645,860 TL have been applied in the inspections until November 2013, while a water pollution violation of 1 million, a noise pollution violation of 6,769 TL and a waste disposal of 112,375 TL have been applied.

10. Trabzon Industrial Wastewater Treatment Plant Status

There are not many in Trabzon-Ilı wastewater treatment plant with its number and gender. In Trabzon, all municipalities supply some of the wastewater to the marine environment only with Deep Sea Discharge (DSD) Systems. The wastewater parameters discharged to the urban sewer system are sometimes very high and not suitable for Deep Sea Discharge system. In some municipal and district Organize industrial zones (OİZ) some of the enterprises have a package wastewater treatment plant. However, the wastewater is very complex and there is no central treatment for its quantity. Only Arsin Organize Sabnayi District (OİZ) has a physical and biological wastewater treatment plant to be built and operated. The remaining OİZs do not have facilities.

Only some of the institutions and institutions that produce a lot of wastewater have wastewater treatment plants but they work very uncontrollably. Some wastewater treatments have not yet been established for some facilities with a small but concentrated wastewater.

10.1 Wastewater Treatment Plant at the Construction Stage in the Trabzon Province of Atasu Dam

ATASU Dam Wastewater Treatment Plant It is aimed to prevent the Atasu Dam Reservoir, which is the drinking water source of Trabzon province, from being contaminated by the settlements located in the area. In this case, Atasu Dam Wastewater Treatment Plant started to work at 500 m^3 / Day, but it has not been completed yet.

10.2. Trabzon City Organized Industrial Zone (OSB) Wastewater Treatment Plant

The Arsin wastewater treatment plant is sized for a flow rate of 900 m3 / day. The facility will conduct physical and biological wastewater treatment. The construction of the plant was completed in December 2016 but has not yet started.

11. Trabzon City Sea Water Pollution on the Beach

Eastern Black Sea Basin in Trabzon; There are 11 General Purpose Monitoring Points and water quality is continuously measured at these points.

Table 8. Eastern Black Sea Basin Trabzon Water for General Purposes

	Watch Point Code	Location	Water Mass Name	Coordinates	
				X	Y
1	DKGİG001_1	Maçka Trabzon	Atasu Dam	559226,7616	4522963,048
2	DKGİG001_2	Maçka Trabzon	Atasu Dam	559266,4492	4522427,266
3	DKGİG004_1	Çaykara Trabzon	Uzungöl	609418,4537	4497473,073
4	DKGİG004_2	Çaykara Trabzon	Uzungöl	609658,1666	4497452,436
5	DKGİKS003	Değirmendere Offset	Coastal Water	562658,5733	4541435,799
6	DKGİN004	The road bridge of Bayburt's Edge. Besides the Faculty of Technology of the University of Technology.Of Trabzon	Solaklı stream	607605,0519	4531723,218
7	DKGİN005	After Çınarlık Village Road Bridge Tobacco Processing Factory. Akçaabat Trabzon	Kale creek	544932,2125	4535968,893
8	DKGİN007	Hacı Ziya Habiboğlu Street Side Vakfıkebir Trabzon	Foldere	523582,3143	4542174,72
9	DKGİN009	Trabzon-Gümüşhane Road State Water Works(DSİ) Değirmendere (Öğütlü) SKİ Maçka Trabzon	Maçka Streams (Değirmendere)	553243,9281	4520695,946
10	DKGİN012	Of Karaçay Plant Bridge On The Road İyidere Rize	İyidere	616004,3602	4536122,05
11	DKGİN015	Yassı Kaya Village Road Bridge-Araklı Trabzon	Kara Stream	587482,2595	4528310,108

CONCLUSIONS AND RECOMMENDATIONS

-A good physical treatment is required for Marine Marine Outfall (DSD) systems. In this respect, protection of the Black Sea from pollution is ensured.
-Waters coming from the floods have been made to flow very quickly by the grooving system made to the edges of the streets, but the sand deposits formed in this stage did not participate. 5-10 L. sand / (person.year) account is made in some country standards.
- The city of Trabzon is approximately 500 km long in Ortahisar town and it is made of very different diameter and pipe type. There are too many shortcomings in this system. There are a lot of leaks in the system, and the decomposition of gas from the windshields leads to serious illnesses.
-Deal Deep Sea Discharge (DSD) systems collect about 20-30% of the city's wastewater, about 55 km long collectors. The rest flow to the Black Sea with the help of the branches and their help.
In Turkey, the average daily wastewater discharged per person in the reality of Turkey is accepted as 190 (liters per person-day) in 2012. For example, However, according to a graduate study in Gümüşhane city center, drinking water requirement of 85 L / (person.Day) has been put forward.
Trabzon province water pollution point source Industrial and Industrial Facilities, OIZs (Fatih Industrial Site, Büyük Fatih Industrial Site, Trabzon Industrial Site, Demirkirlar Industrial Site, Cement Factory, Deliklitas-Değirmendere TRAB-Rİ-KAB Solid Waste Transfer Station TRAB-Rİ-KAB Solid Waste Transfer Station, Çarşıbaşı-Gülyalı Mevkii TRAB-Rİ-KAB Solid Waste Transfer Station, Coal Packing Facility, Akar Water Treatment Plant, Ikeda Municipality, Iyidere aquifer and Akarsuyun Left Bank, Waste Sterilization Plant 10 Ton Medical Waste / Day Capacity) -Fuel Stations, Marble Workshops, Asphalt Plant Plants, Hekimoglu Iron Casting Plants, Gas Filling Plant, Drinking and Drinking Water Treatment Plant Sewage sludge discharge, Regulator Facilities (Solid and Liquid Wastes), Kendirli Mahallesi 600 Animal Shelters, Shoemakers Industrial Site, Automobile Industry Industrial Site, Trabzon Municipality Science Directorate, etc.) Lir.
Increased environmental awareness etc. The supply of wastewater from a single point to the receiving place from the sewerage service finalizations made by reasons is also a source of point pollution. A sewage treatment plant must be constructed for this sewerage.
With the inauguration of the places where the aquifers of the Trabzon River are located, both soil and water pollution occur. In this case, it is a matter of going farther for drinking and usage water resources.
Eastern Black Sea Region, Trabzon Province and surrounding areas are very rich in water resources and the river is not very high but there are many sources and streams that are dry in summer and winter. Trabzon ili rivers are located in the east and west of Iyidere, Baltacı Stream, Solakli Stream, Ivyon, Kemerli, Sargana, Kestil and Civa Derivations, Sürmene (Manahoz) Stream, Koha Stream, Karadere, Yanbolu Stream, Bodemish, Falkoz, Arsin, Varvara, , Degirmendere, Hamsi Deresi, Kuzgun (Tabakhane) and Zağnos Dereleri (passes through closed channels in the city and carries household waste), Kisarna and Hacıbeşir Dereleri, Yildiz Deresi, Söğütlü Deresi, Üstürkiye, Haldanoz, İspandan, Akçakale, Vartan, İskefiye, Glida and Kirazlik Dereleri, Fol Deresi, Çamlık and Akhisar Deresi. The main streams of the province of Trabzon; Değirmendere, Karadere, Solaklı Stream and Baltacı Stream.
Sewerage is not working well. Often there is gas outflow from the sewer system. This is due to sedimentation of the wastewater not passing through the sewer system and the collapse of the sediment as aero and anaerobes and decaying caries. The city must decide before the construction of the Wastewater Treatment Plant (WTP) that the old sewerage system will be a totally renewed, discrete system. The percentage of binding to the sewer should be increased and the first stage wastewater should be treated. Selection of location, number and type of wastewater treatment plant should be decided as a good analysis of city wastewater.
If wastewater treatment plants are built and operated well, river and sea pollution can be avoided and they can be entered into sea water on the beaches.
The city should be decided before the construction of the WTP so that the old sewerage will be a totally renewed, discrete unified system. The selection of location, number and type of treatment plant should be decided as a result of a good analysis of city wastewater. WTP sizing should be done according to the discrete system sewer. Rainwater reservoirs should be constructed and

precipitation waters should be given to the buyer after sea water (stream and sea).By doing this, pollution of rivers can be prevented and beaches can become active.
When the water pollution is terminated, the water quality will increase for the areas that receive drinking water from the rivers and surface water from the aquifers (municipality etc.). The existing fauna and flora in these rivers will also improve. All this positive situation will be positive for public and environmental health.
Due to the fact that the precipitation height in Trabzon (h_N = 925 mm) is higher than the Turkey average (h_N = 643 mm) and because the agricultural land has no possibility to use wastewater and wastewater from the wastewater sludge according to the agricultural sector, Methane gaseous effluent or final storage resulting in good dewatering.
Trabzon will be economical and ecological in terms of renewal of the sewerage system and sewage system of the combined system.
In case of discrete system sewage, it is necessary to make tanks for the settlement of the precipitation waters which have turned into wastewater before discharge to the Black Sea and sedimentation. The municipal wastewater treatment plants are operated in some way, but there is no official information as to the conditions under which the wastewater qualities and facilities are operated. If there are some shortcomings in facility design, the plant operation may not work efficiently no matter how good it is. If all the work to be done is coordinated and well planned and implemented, the system can operate in an integrity. The measurements obtained from the plant operation will be an important source of information for plant improvement.
In Germany and other countries there are committees and organizations concerned with the harmonization of treatment plants with the requirements of the country. In Turkey, the public, private sector and universities should work together and the data in the country should be collected and evaluated to form the most appropriate treatment technique and technology and design criteria.
Something that is not measured can never be controlled. Biological treatment plants resemble living creatures. If we think of biological treatment in Turkey as a child right now, the eating habits of the child can be inadequate in terms of nutrition from abroad if it is unknown that under which conditions the child can grow. We must comply with the appropriate conditions for healthy growth. We have to base the numerical data produced according to the Turkish conditions on engineering principles. This principle applies equally to urban and industrial wastewater treatment technologies. Proper determination of the existing wastewater sources and determination of the wastewater pollution parameters should be started and the dimensioning of the wastewater treatment plant to be done should be started. Drug residues etc. of wastewater content parameters. It is necessary to select the new generation wastewater treatment systems according to their waste loads by analyzing the wastewater well.
Inadequate sewerage network, inadequate treatment of domestic wastewater in residential areas, no treatment of wastewater by large industrial establishments, no collective treatment in small industrial areas, no healthy construction of phoseptic pits, drainage of phoseptic wastes after being pulled by screwdrivers, besides deep sea discharge, sometimes random places, , The use of chemical fertilizers, inadequate capacity and efficiency of the treatment plant, insufficient personnel in the treatment plant and facilities,
Increasing number of treatment plants in Trabzon proves that environmental awareness has improved. Unfortunately, there is no country-specific planning, treatment facility design criteria, and construction. There is a misunderstanding that treatment plants can treat wastewaters with all characteristic parameters. The receiving environment has selected types of treatment plants and discharge systems irrespective of water quality. It is essential to determine the wastewater treatment plants according to their needs. When it is necessary to reduce the pollutant load in a basin, it is necessary to establish the best wastewater treatment plant and to provide the best technology.
We should prepare our own regulations instead of the regulations prepared by taking the standards of European Union countries. From 2022 onwards, all municipalities are obliged to provide the provisions of regulation on wastewater treatment. It will be better to work with national standards.

There is a risk that wastewater treatment plants produced according to other national standards do not work in our country.
Water consumption and wastewater production of the Trabzon Provincial Slaughterhouses and milk processing plants should be better controlled. These plants are well below what you need when you look at the consumption of drinking and running water. Furthermore, all of the fishermen's shelters in the province have very dense build-up and occupancy rates, and none of these shelters have wastewater treatment facilities. Wastewater treatment plant conditions must be introduced and controlled in these facilities. The works of the facilities which are required to be established on the rivers constitute a pollution which is formed in the resultant stream.
Looking at biological parameters as well as chemical parameters in aquatic environments will be very useful for identifying pollution. Until now, biological parameters have not been looked at in river pollution.

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