

Fire Services from a Disaster Governance Perspective

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INTRODUCTION

Local public services are one of the most important public administration service areas that have a strong impact on the daily life of people. In particular, some service areas are of vital importance. Services such as waste collection, cleaning, transportation, sewerage, emergency aid and firefighting in cities are among these main service areas that affect the lives of citizens. Local public services such as waste collection and firefighting, which are of vital importance, are decisively important in ensuring the continuity of cities, in urban design exceeding human life, and urban planning. It is of great importance to discuss the transformation of local services and the direction that this transformation takes in our cities, which are witnessing the self-reproduction processes of globalization and capitalism every day. Especially emergency services such as firefighting are a vital service area due to its potential to prevent loss of life and must achieve a high level of quality to ensure public safety. Studies on the functioning of the fire service, which is an indispensable service area for the residents of the city, remain rather barren. In this study, the fire service will be discussed in terms of personnel, equipment, organizational structure, coordination-cooperation, standardization and scale, and a comparative analysis with international studies will be presented. It is thought that a detailed analysis of the design of the fire services, which is one of the cornerstones of urban design and planning, will pave the way for studies on this service area, where academic out remains very limited.

Service provision standardization in public services ensures the effective execution of business and management processes, the continuity of the service, the sustainability of the work, and service supervision. The observance of certain standards in the provision of fire services, as in all local public services, indicates the quality of service provision. These standards are intended for the fire brigade to reach the scene in the shortest time and the most appropriate way, to intervene in the incident and to ensure safety of life. These standards consist of technical standards such as **i)** fire engines and equipment, **ii)** fire stations, and **iii)** training for firefighters. How these technical standards for

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firefighting services will be provided is determined in each country's own legislation. The general arrangements regarding these standards in Turkey are specified in the Municipal Fire Brigade Regulation of 2006 and no. 26326. To what extent these standards are ensured across the country and to what extent these rules are complied with is the subject of another study and research. However, the main discussion point of this study as regards governance is how the most basic issues such as "voluntary firefighting" are handled in terms of the manpower that takes part in the fulfilment of the fire services within the scope of **i)** legal regulations regarding the firefighting profession and fire services, **ii)** organizational form/institutional structure of fire services, **iii)** coordination and cooperation issues between central and local administrations in the field of fire services, and **iv)** within the scope of the organizational relationship to achieve these standards in firefighting services. In short, this study aims to take a snapshot of the fire services in Turkey in terms of governance.

The study basically consists of three sections. The first section deals with the general definition and importance of the fire service. The second section addresses how the fire services are carried out at the legal level and how forms of organization are handled in Turkey. In the third and last section of the study, the most basic problem areas related to the coordination and cooperation between the central and local governments, volunteer firefighting and the firefighting profession are covered with respect to governance in Turkey. In the conclusion section of the study, solutions are recommended for the identified problem areas. Within the scope of the study, a baseline analysis of the fire services in Turkey and the main problem areas are discussed; examples of the New York, Paris, Tokyo, and London fire brigades, which are defined as the largest and highest quality fire brigades in the world, are given; and an explanation of the international standards of fire services is presented.

1. FIRE SERVICES AND THE IMPORTANCE OF FIRE SERVICES

Fire services are one of the service areas that ensure the continuity of cities and secure the living spaces of people living in the city.

The meaning of the word *itfaiye* in Turkish, a loan word from Arabic, is "fire extinguishment organization". According to this definition, the word *itfaiye* refers to both the fire extinguishment process and the organization that performs it. The first known example of a fire brigade in the world, which has a deep-rooted history, is the

well-organized fire brigade in the Roman Empire in 425. The Roman organization, which divided the whole city to a certain number of fire districts, is similar to the fire services organization of our day (Kenlon, 1913). In the Middle Ages, mass fires occurred in many towns and cities because the buildings were made of wood and there was no firefighting. In this era of history, some neighbourhoods formed simple firefighting structures within themselves without following any legal regulation. After the Great London Fire of 1666, which is believed to have prompted the establishment of today's fire brigades, the first examples of fire brigades and their standardization took place in the process of responding to fires in cities. The first formations like today's fire brigades started with the establishment of fire insurance companies in London. Many insurance companies followed the example of an entrepreneur named Nicholas Barbon, who started the first fire insurance. Companies providing fire services continued to be established until the 1800s, and these organizations merged in 1833 to set up the London Fire Engine Establishment. Initially, the organization, consisting of 80 firefighters and 13 fire stations, was funded by insurance companies. This fire brigade is recognized as the first example in the world to resemble the current fire brigade model (UK Fire Service, 2020).

Fire brigades are the most widespread emergency organizations institutionalized all over the world. These organizations, which had the limited scope of firefighting in the first stages of their establishment, carry out activities in a wide range today. As members of the public firefighting force, fire brigades fight fires, save lives and property, decide when necessary to demolish and evacuate endangered buildings, provide first aid, and at other times maintain and protect firefighting equipment. In addition, it provides life and property rescue services in case of accidents, disasters, and all kinds of other emergencies, and ensures that cities are safe spaces by minimizing risks, including the social and economic costs caused by fire and other hazards.

Considering that, besides the loss of life, the economic losses caused by the fires in the cities correspond to 1% of gross national product, the importance of the fire brigade emerges once again.

Fire brigades and the way they provide services are very important due to the nature of the service they provide, and their importance is more evident in emergencies. At the forefront of these emergencies is fire, which is the main response area of the fire service.

With population concentration in cities, fires, when they result in loss of life, leave a great destruction in the memories. Fires also pose great threats in living and workspaces. The damage caused by the fires has an immense impact on the gross national product. A large part of the country's resources is lost due to fires. The economic costs of fires also impose a great burden on both cities and their inhabitants. According to the data of the "World Fire Statistics", the annual cost of fires on a country's budget is much higher than the annual damage caused by crime and traffic accidents. The estimate that the cost of fire disasters corresponds to approximately one percent of the gross national product of developed countries was found out as a result of the studies carried out by the World Fire Statistic Centre (WFSC) in the 1980s². The World Fire Statistics 2020 Report, published by the International Association of Fire and Rescue Services³, presents data from 39 countries⁴ corresponding to a population of 2.4 billion people between 1993 and 2013. The results of this study are highly important. According to this report, although it varies from year to year, an average of 4.5 million fires are reported in the world within a year, and 30 thousand people lose their lives because of these fires. In the three countries with the highest number of fire notifications, the US, France, and Japan, more than 60 percent of these notifications consist of medical aid requests. The countries with the highest number of fires are India, the US, France, Italy, and the UK. The highest fire death toll is experienced in India, Russia, and the US (World Fire Statistics, 2020).

According to the World Fire Statistics 2020 Report, 4.5 million fire cases occurred in 2018, because of which 30,812 people lost their lives. The report estimates that factors such as global warming and climate change will increase the risk of fire. Fire projections indicate that there will be a serious increase. According to a study conducted by Harvard University in 2014 (modelling the situations that may occur as a result of global warming and greenhouse gas absorption), by 2050, wildfires will occur more

² *World Fire Statistics* 2010, United Kingdom "Comparison of European Fire Statistics Final Report for the Department for Communities and Local Government 2012/1" published by the *Department for Communities and Local Government* (DCLG), the EU Fire Safety Network, another important organization; the Federation of the European Union Fire Officer Associations.

³ The International Association of Fire and Rescue Services (CTIF) is an international association dating back to 1900. The association, which was founded under the name "Comité Technique International de prévention et d'extinction du Feu", continues to use the acronym of its French name. Headquartered in Paris, the association has 36 member countries. It has 50 candidate members. <http://www.ctif.org>

⁴ The total population of these countries represents 15% of the world population.

frequently (every three weeks or more frequently), and an area twice as large as the Western US will be burned down during this time (World Fire Statistics, 2020).

Table-1: Number of Fires and Death Toll (2018)

COUNTRIES	Number of Fires	Death Toll
India	1,600,000	12,747
United States	1,318,000	3,665
France	305,500	262
Italy	213,116	-
United Kingdom	204,525	400

Source: World Fire Statistics 2020 Report

Although fire death tolls differ according to the industrialization and fire risk groups of countries, a comparison of fire service expenditures and direct fire death tolls can give a good idea about the importance of the fire brigade and fire service areas. In this context, in Table-1 below, the death toll in fire cases according to the World Fire Statistics 2020 Report is expressed by countries, and in Table-2, the reflections of the two data groups showing the costs of fire losses and fire brigades in various countries are provided. In addition, as can be seen in Figure 1, fire losses are high in countries with low firefighting expenditures, and low in countries with high firefighting expenditures.

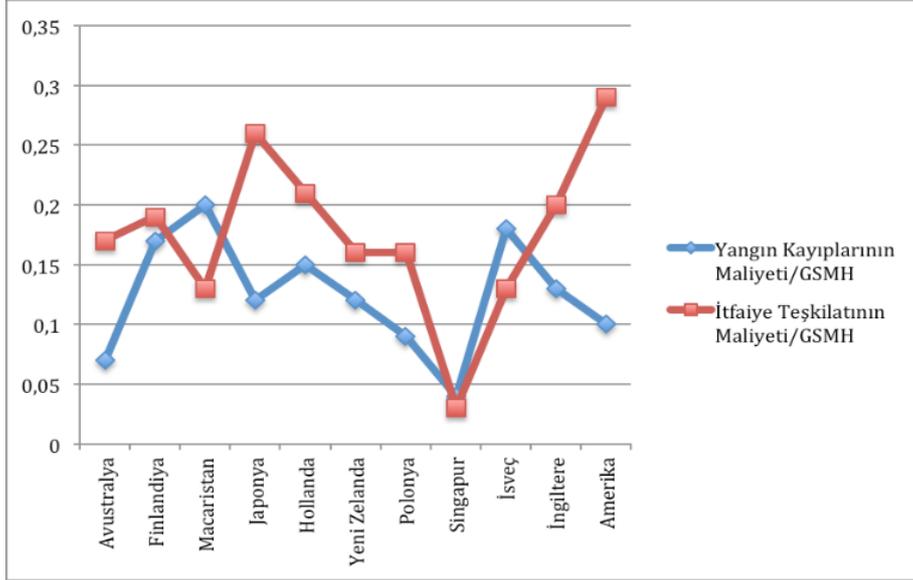
Table-2: Costs of fire losses and fire brigades

COUNTRIES	Cost of Fire Losses /GNP	Cost of Fire Organization/GNP
Australia	0.07	0.17
Finland	0.17	0.19
Hungary	0.20	0.13
Japan	0.12	0.26
Netherlands	0.15	0.21
New Zealand	0.12	0.16
Poland	0.09	0.16
Singapore	0.04	0.03
Sweden	0.18	0.13
UK	0.13	0.20

US	0.10	0.29
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Source: World Fire Statistics 2020 Report

Figure-1: Fire brigades and costs of fire losses



Source: World Fire Statistics 2020 Report

According to the World Fire Statistics 2020 Report, although there is no clear statistics for Turkey, the average annual number of fires in the last year varies between 2,000 and 5,000, and the fire death toll varies between 200 and 1000 annually. It is stated that the cost of this for the country's economy corresponds to 1% of the gross national product (World Fire Statistics, 2020).

The importance of the fire brigade, which has a strong history, is on the rise with the innovations brought by technology, the proliferation of fire types and the diversity of combustible materials. Considering, that besides the loss of life, the economic losses caused by the fires in the cities correspond to 1% of the gross national product, the importance of the fire brigade, which covers emergency services such as firefighting and responding to disaster situations, becomes clear. When we look at the fires in the world and especially in Turkey, it is clear that the expenditure on fire brigades and fire measures and the number of fires and the damage they cause are inversely proportional. This means that the more importance is placed in the fire brigade and fire measures, the less loss of life and property. In other words, the importance and support attached to every process of firefighting and fire services helps to extinguish a possible fire as soon

as possible and with the least damage, thus both preventing major disasters and making great contributions to the national economy.

2. FIRE SERVICE IN TURKEY

The history of the fire brigade in Turkey began with the establishment of the *Tulumbacılar* Brigade⁵ (1720/1721). The *Tulumba* Brigade served for more than a century until 1826, when the Janissary Corps was abolished. With the closure of the *Tulumbacı* Brigade, firefighting was not undertaken by a regular organization until 1874. Only the district *tulumbacıs* responded to the fires that took place between 1826 and 1828, but these firefighters, who did not have a regular structure, were insufficient in responding to the fires⁶. Firefighting services, operating as a military unit, started to be carried out by municipalities with the *Der-saadet* Municipality Regulation issued in 1868. However, during the fires that occurred in this period, the fire brigade was not successful enough and many buildings were damaged. This necessitated the formation of a modern fire authority. Afterwards, the structures and legal regulations in European countries were examined for the modernization of the fire brigade, and the fire services in Hungary were determined to be superior. Therefore, the Budapest Fire Brigade Regiment Commander Szechenyi was appointed as the head of the new organization to be established. As a result of Szechenyi's efforts, the Fire Brigade of the Istanbul Hassa Army was established. In other words, the fire brigade was reactivated as a military unit (Azaklı and Özgür, 2001: 158).

Firefighting services in Turkey are one of the first services to come under the responsibility of the public as part of municipal services.

In the first years of the Republic, the fire brigade was discontinued as a military unit through legal amendments and was completely transferred to local governments. With the Municipal Law no. 1580 adopted in 1930, the establishment of a fire brigade for each municipality was legally sanctioned and the fire service was organized as a local service under the municipalities. Another important regulation in terms of fire services offered by the municipalities is the Metropolitan Municipality Law no. 3030 of 1984.

⁵ The origin of the word *tulumbacı* is the Italian word “trompa” (pipe, trumpet). While *Tulumba* (waterpump) was a kind of simple fire extinguisher, it turned into a title given to those who use it over time.

⁶ *Islamic Encyclopedia*, *Tulumbacı* entry, 2013, p.370.

With this law, fire services came under the jurisdiction of metropolitan municipalities and fire brigades serving as directorates in metropolitan cities and provincial centres were transformed into fire brigades in metropolitan municipalities in 1997. In addition, the detailed and basic provisions specifying the working procedures and principles of the fire brigade, stating that the fire services fall within the scope of duty and responsibility of municipalities and that the fire brigade is among the units suitable for permanent staffing through municipality council decisions were also codified into the Municipal Law no. 5393 of 2005 and the Metropolitan Municipality Law no. 5216 of 2004. Around the same years, after the municipal boundaries of Istanbul and Kocaeli were determined to be provincial borders, all fire brigades across the province were transferred to the Metropolitan Municipalities Fire Brigades. However, the most important development in this regard was made through the Law no. 6360 of 2012. With the new Law, which combines the municipal borders with the provincial administrative borders and expands the service areas of the metropolitan municipalities, the fire services in urban and rural areas were included in the jurisdiction of 30 metropolitan municipalities (Yavuz and Bozatay, 2015:789).

There are many legal regulations regarding fire services in Turkey, as the fire brigade does not solely focus on firefighting but also search and rescue operations which include many actors and where multiple services are provided.

With the Civil Defence Law enacted in 1958, new responsibilities were brought on for fire brigades (itfaiye), which literally means "fire extinguishment organization" and whose sole duty had been to fight fires since their establishment. According to this Law, fire brigades are obliged to take the necessary measures to ensure the safety of life and property of the people in disasters other than fires as well (Yavuz and Bozatay, 2015: 790). Thus, search and rescue services have also become one of the duties of fire brigades, whose main service area is firefighting. Following the Civil Defence Law, the most basic regulation in Turkey regarding fire services and service areas is the Municipal Fire Brigade Regulation no. 26326 of 2006. This regulation was issued by the Ministry of the Interior, based on Article 52 of the Municipal Law no. 5393, titled "Fire Brigades". Through the regulation, the fire brigade service areas regulated by the Civil Defence Law were reconsidered and expanded by considering the search and rescue and firefighting activities, as well as the duties and responsibilities of the fire

brigade, emergency, and response methods, just like other fire brigades around the world⁷.

With these regulations, as the duty area of the fire brigade, which is a local service, has turned into a service area that concerns many actors and provides multi-faceted services, the areas of services related to the fire brigade are not limited to local government legislation. In this context, the Law on the Organization and Duties of the Disaster and Emergency Management Authority, the Provincial Administration Law no. 5442 of 1949, the Forestry Law no. 6831 of 1956 and the Law on the Organization and Duties of the Directorate-General of Forestry, Ministry of Transport, Maritime Affairs and Communications, Coastal Safety Establishment Laws of the Directorate-General of the Coast Guard Command are among the main regulations other than the local government legislation, which covers areas related to firefighting services. These administrations have some duties and powers such as applying protective measures within the framework of emergency response plans, preventing and extinguishing fires in places where industry, port facilities and maritime traffic are concentrated in such a way as to cause fire hazards and spread.

Although fire services in Turkey are organized as a local service and are subordinate to the municipalities, there are many institutions at the central and

⁷ According to the Municipal Fire Brigade Regulation of 2006 and no. 26326, the main duties of the fire brigade are as follows: For detailed information, see: **i)** To intervene in incidents that require technical rescue and to carry out first aid services in all kinds of accidents, collapses, explosions, being stranded and similar situations; to carry out all kinds of search and rescue activities on the ground, above water and under water, **ii)** to intervene in floods, **iii)** To inform the public, institutions and organizations about fire services, to train them on the precautions to be taken and to carry out exercises, **iv)** to assist in the training of fire brigades and volunteer firefighters of private organizations; Inspecting the conformity of their buildings and equipment to firefighter standards, issuing fire proficiency certificates for these units and cooperating with these units when necessary, **v)** to intervene in incidents outside the municipality borders, **vi)** to clean the chimneys or have the chimneys cleaned within the borders of the municipality for a fee to be determined by the municipal council and inspect the chimneys in terms of precautions against fire, **vii)** to participate in actions to put out forest fires upon request, **viii)** to inspect workplaces, entertainment venues, factories and industrial establishments in terms of precautions against fire, to issue permits and licenses stipulated by the legislation in these matters, **ix)** to identify flammable, explosive and combustible material storage areas in accordance with zoning plans, **x)** to perform the other duties assigned by the mayor.

Apart from this Law, the 2015 Regulation on the Protection of Buildings from Fire, which is the service area of the fire brigade, was issued. This Regulation basically covers provisions that regarding the procedures and principles of organization, training and supervision as regards the measures to be taken before and during the fire in order to minimize the fires that may occur during the design, construction, operation, maintenance and use of all kinds of structures, buildings, facilities and businesses, and to prevent the loss of life and property during the fire, and to extinguish fires.

local level within the Turkish administrative structure responsible for the delivery of fire services, with such authority being provided by the legislation.

In terms of service delivery methods, there are examples among the world's developed fire brigades that perform fire services through both central and local governments. However, in all examples from around the world, it is witnessed that organization of fire services is regarded as highly important because the mandate of fire brigades is not limited to firefighting. Therefore, special management/organization models have been developed in fire services, especially for large metropolises. For example, the Paris Fire Brigade has been serving as a unit of the French army since 1811. The Paris Fire Brigade, a unit of the French Army, provides services in certain areas of national importance, including fire and rescue cases in Paris. In the rest of France, there is a centralized organization that is trained, supervised, and regulated by the Ministry of the Interior. The Paris Fire Brigade is not only a firefighting organization but also provides assistance as regards traffic accidents, natural disasters, marine accidents, wreck removal, helping trapped people and animals, and removal of corpses (Kılıç, 2010).

The fire services in England were transferred to local governments in 1947. However, a special management model was also developed for the London Fire Brigade. The London fire brigade has been serving as a municipal agency since 1865. A special fire brigade for the London region was established in 1948, and with the establishment of the Greater London municipality in 1965, the surrounding fire brigades were also incorporated into the London Fire Brigade. The London Fire and Civil Defence Authority was established in 1986. On 3 July 2000, this agency relinquished its responsibility to the London Fire and Emergency Planning Authority. In addition to firefighting, the London Fire Brigade responds to serious traffic accidents, floods, lift rescues, conducts various rescue operations, and intervenes in incidents involving dangerous goods within the framework of the decisions of this organization which is affiliated to the municipality (UK Fire Service, 2020).

The Tokyo Fire Department is the largest fire department in the world. Due to the area it covers, the population it serves and the fact that it serves in the capital city, the Tokyo Fire Department is administratively organized differently from other fire departments in Japan. In Tokyo, fire stations under mayors provides firefighting services such as responding to fire and natural disasters, search and rescue, fighting against incidents

with chemical, biological, radiological, nuclear, and high explosive/hazardous materials, setting up firefighting systems and firefighting standards, organizing fire statistics and service information, and providing ambulance and first aid services as required by search and rescue services. Other fire brigades in Japan work under the Directorate-General of Fire Services under the Ministry of the Interior. The task of this Directorate-General is to ensure the standardization and coordination of fire services across the country.

In the US, the fire service is the responsibility of local governments. The New York Fire Department, the largest fire department in the US, is the second largest fire department in the world after Tokyo. It also ranks first among the organizations working under local governments. Responsible for five different regions of the New York metropolitan area, it is responsible for protecting the life and property of residents from fires and fire-related dangers, providing emergency and ambulance services, providing technical rescue services, investigating arson, controlling measures to prevent fires, and first response against biological, chemical, and radioactive hazards (FDNY Vital Statistics, 2013).

As in the leading countries of the world, the service area of the fire brigade is not limited to only firefighting in Turkey. In many places around the world, special management models have been developed for fire brigades in big metropolises in order for the fire brigade, which has a wide service area, to intervene in the event as soon as possible and with the most appropriate method. In Turkey, a special management model for fire services has not been developed for large metropolises such as Istanbul, which has a large population and has historical, cultural and natural heritage values, and therefore in this respect, Turkey's practice differs from other countries.

Within the Turkish administrative structure, the fire service is mainly within the jurisdiction of the municipalities in urban areas and is provided by the municipalities. However, the problems experienced in the 17 August 1999 Marmara earthquake brought forth some changes in approaching disasters and disaster management in Turkey, and the number of actors responsible for the fire service, whose main task area is search and rescue and fire response, has been increased. Actors in the field of fire service in Turkey can be considered to fall under three main actor groups: local governments (municipalities), central institutions and non-governmental organizations

working on fire services. At the local level, fire services are predominantly provided by municipalities. As stated in the section on the Legislation on Fire Services in Turkey, the Municipal Fire Brigade Regulation is the basic legal regulation governing the establishment, duties, powers, and responsibilities of fire brigades under municipalities. Fire brigades provide services under 30 metropolitan cities, 51 provincial municipalities, 403 districts, and 387 town municipalities across Turkey. non-governmental organizations are another actor in the field of fire services. These non-governmental organizations work to protect the employment rights of firefighters and to ensure more effective provision of fire services. Istanbul Firefighters Association (IMED), All Firefighters Union (TİBDER), Firefighter Rights Association (İHAKDER), Air Search and Rescue Association (Turkey ARFF) are some of these NGOs. At the central level, fire services are also provided by central institutions such as the Disaster and Emergency Authority (AFAD), the Directorate-General of Forestry, the Ministry of Transport and Infrastructure, the Directorate-General of Coastal Safety, and the Coast Guard Command. In addition, Organized Industrial Zones have the authority to establish fire brigades in their own areas.

3. FUNDAMENTAL PROBLEMS RELATED TO FIRE BRIGADES IN TURKEY FROM A GOVERNANCE PERSPECTIVE

So far, we have presented fundamental information related to the importance of fire brigade, which is a vital service field; history of fire services; service provision, form of organization and legal background of fire brigades in Turkey. However, an entire section should be dedicated to discussing important problem areas of **i)** organization, cooperation, and coordination of fire services, **ii)** volunteer firefighting, **iii)** firefighting profession, which arise from the legal infrastructure and regulatory shortcomings in fire services and fire department organization in Turkey. These problems have a negative impact on the development of fire department service standardisation, effective operation of business and management processes, service continuity, business sustainability and service supervision. This section of the study will address and discuss the problem areas related to fire services and organization in this light and from a governance viewpoint.

Overlapping emergency roles and responsibilities of central and local fire department service structures in Turkey (due to a lack of legislation in this field,

shortcomings in cooperation and coordination) may lead to delays in incidents requiring urgent intervention.

As we touched upon in the previous section, some of the services delivered by fire department in urban sector are also undertaken by the central administration and its affiliated provincial organizations based on the mandate from the legislation. Administrations get together in the same incident and there may be some cooperation and coordination problems among units from time to time. To expand this with a few examples; AFAD, who are in charge of operating integrated disaster management system and ensuring national and international high-level coordination in this context before, during and after the disaster event, also have mandate and various responsibilities in search & rescue activities as well as in firefighting, which is a fundamental field of service for the fire department. Additionally, AFAD have the role and responsibility to **i)** set the standards for fire department, search and rescue services, **ii)** cooperate with institutions and organizations delivering fire department, search and rescue services, **iii)** regulate and promote volunteer fire department and search & rescue services. They are also the organization in charge of fire incidents that may arise from chemical, biological, and radioactive substances. Consequently, fire department units of both AFAD and locally organised municipalities have mandate to intervene at the time of and after a disaster. In other words, many of the duties of fire department that fall outside of firefighting have parallels with the duties of the Disaster and Emergency Management Presidency. Both organizations have similar duties especially in terms of search and rescue activities. Different institutions performing the same duties may lead to inefficient use of resources and potential cooperation and coordination problems on the disaster scene, which may cause confusion of authority in emergency intervention and delays in incidents requiring swift action.

Another example to overlapping fields of service and coordination problem that may lead to potential delays in emergency action is related to the Directorate General of Forestry which delivers forest fire intervention services at national level. Directorate General of Forestry fights fires, which has parallels with the service field of the fire department. However, the fire department has mandate to extinguish fires if the fire breaks out in a residential zone if there is a residential area within the forested area and the Directorate General of Forestry has mandate to extinguish fires only in forested areas. In other words, due to the fact that the fire department does not have the authority

to extinguish forest fires, the Directorate-General of Forestry does not have the authority and experience regarding indoor fires, and due to the problems experienced in joint work and coordination between the two units, it may lead to delay in responding to a possible rural fire.

Roles and responsibilities of fire departments operating under municipalities and those of some central government units overlap due to a lack of legislation in Turkey. This also becomes evident in two separate organizations delivering the same type of service within the same province. While fire departments operate under municipalities, other institutions and organizations serve under the central government. Problems experienced in coordination and cooperation among institutions result in failure to use personnel, vehicles, and equipment efficiently as well as in irreversible consequences in emergency intervention.

volunteer firefighting has yet to find a solid ground of implementation and to become widespread since it is not well-known or well-understood in Turkey.

Another important problem area in Turkey in terms of the labour force to be deployed for the delivery of fire services is “volunteer firefighting”. volunteer firefighting refers to those who are not professional fire fighters, in other words who do not get paid for fighting fires; and the concept was basically developed for places with a high incidence of fires. volunteer firefighting is a newly developing method in Turkey whereas it is a widely popular one in the rest of the world. Even though there are some differences in how volunteer firefighting operates around the world, volunteer firefighting is evidently based on a number of common principles. Although volunteer fire fighters are not paid salaries, all of their expenses are met by the municipalities or administrations under which they are operating. The total amount of time they spend intervening in a fire incident is reimbursed to their businesses or workplaces in the form of actual wages in a way to compensate for the loss of workforce. In some countries, reimbursement takes the form of general fee or fee per call, accident compensation, and retirement bonuses. Additionally, their training and treatment expenses are met, and some taxation facilities and exemptions are granted in an effort to promote volunteer firefighting. Volunteer fire stations are also set up for volunteers in the event of emergencies. Volunteer delivery of fire services is especially prominent in rural areas in some European countries. While 44,574 people professionally deliver fire services, 1,023,345 people

work as volunteer fire fighters. There are 24,000 local volunteer fire fighters in Germany. In France, volunteer fire fighters are considered a part of civil defence and 195,200 out of 248,300 fire department personnel are volunteer fire fighters. With 5,519 full-time and 12,230 volunteer fire fighters, there are a total of 17,749 fire fighters in Belgium. Out of the 60,500 fire department personnel in the United Kingdom, 1,400 are volunteers, 40,100 are full-time and 19,000 are part-time workers. In Hungary and in Finland, both professional and volunteer fire fighters provide this service. In Finland, public institutions are generally responsible for the fire department; however, volunteer firefighters may additionally be used by local governments and fire department associations (Lethbridge, 2009). 16,833 people out of the 21,494 fire department personnel in Finland serve on a voluntary basis (World Fire Statistics, 2020). In Tokyo, volunteer firefighting is a very important organization. There are currently around 25 thousand volunteer fire fighters in Tokyo. As a matter of fact, there volunteer fire fighters founded the Union of Volunteer Fire Fighters in 1948. This Union was established in the framework of the Law on Fire Department Organization. Volunteer fire fighters lend vital support to Tokyo Fire Department. Their support extends from controlling the crowds at the scene of the fire to supervising the location of the fire (Tokyo Fire Department, 2014).

We wanted to present below the number of volunteer fire fighters within the total number of fire fighters in individual countries as compiled from the World Fire Statistics 2020 Report. As shown in Table-3, the number of volunteer fire fighters providing fire services is undeniably significant.

Table-3: Number of Volunteer Fire Fighters Worldwide

Country	Population (million)	Number of personnel (except the volunteers)	Personnel per 1 million people	Number of Volunteer Fire Fighters	Personnel per 1 million people (including volunteers)
Austria	8.426	2,597	308.21	297,957	35,669.83
Poland	38.533	30.189	783.46	687,223	18.618,12
Slovakia	5.412	3.740	691.06	69.700	13.569,84

Germany	82.218	44.574	542.14	1.023.318	12.988,54
Switzerland	7.786	1.294	166.2	93.867	12.222,07
Russia	143	280,000	1958.04	900,000	8.251,75
Japan	127.297	160,392	1259.98	868,872	8.085,53
Czech Republic	10.505	12.161	1157.64	71.053	7.921,37
Portugal	11	4.100	372.73	45.000	4.463,64
Finland	5.398	4.661	863.47	16.833	3.981,85
France	66.03	52.700	798.12	195,600	3.760,41
USA	317	345,950	1091.32	783,300	3.562,30
South Korea	49	30.000	612.24	87.000	2.387,76
Norway	5.051	11.646	2305.68	0	2.305,68
New Zealand	4.271	1.789	418.87	7.500	2.174,90
Hungary	9.909	9.341	942.68	9.600	1.911,49
Sweden	9.556	15.616	1634.16	2.400	1.885,31
Belgium	10.667	5.519	517.39	12.230	1.663,92
The Netherlands	16.358	26.851	1641.46	0	1.641,46
Greece	10.788	14.153	1311.92	1.507	1.451,61
Denmark	5.603	6.160	1099.41	1.760	1.413,53
United Kingdom	61.37	59.100	963.01	1.400	985.82
Italy	61	28.870	473.28	20.060	802.13
Ireland	4.581	3.547	774.29	0	774.29
Israel	6.5	1,500	230.77	400	292.31
Turkey	84.34	19,445	262.65	665	262.65
Iran	64	9.285	145.08	0	145.08

Source: World Fire Statistics 2020 Report

volunteer firefighting has failed to find a solid ground of implementation and could not become widespread since it is not well-known or well-understood in Turkey. However, the 1999 Marmara earthquake may be considered a milestone in terms of understanding the importance of volunteer firefighting. In the aftermath of the earthquake, an awareness started to develop about the importance of and need for volunteer firefighting primarily in rural areas. Thanks to the outstanding efforts and achievements of volunteer institutions and civilians following the 1999 earthquake, the Directorate General for Civil Defence issued the “Directive on the Principles of Volunteer Engagement with Civil Defence Services” for the first time in 2000, which recognised volunteer firefighting as a stakeholder in disaster management and consequently, Special Provincial Administrations and Municipalities at local level were granted the

mandate to provide volunteer fire fighters with the necessary tools, equipment, venues (Yavuz and Bozaday, 2015:791). Then, the Regulation dated 2006 on Municipal Fire Department addressed the notion of volunteer firefighting under the title line “volunteer firefighting” in article 45. This article introduced the provision that, "Wherever there is a need to support fire services, volunteer fire departments may be established in compliance with the Regulation on Voluntary Engagement with Special Provincial Administration and Municipal Services, published in the Official Gazette dated 2005 and numbered 25981." Primarily the Metropolitan Municipalities of Istanbul, Ankara, Izmir, Kocaeli, and Tekirdağ issued their “volunteer firefighting Regulations” within this scope. These Municipalities launched training activities for those citizens who wanted to become volunteer fire fighters. In particular, Fire Department of Bursa Metropolitan Municipality is a well-known pioneer on this subject (TODAİE, 2016). However, there is no volunteer firefighting practice in Turkey that could be comparable to the international practices. In Turkey, training activities rely heavily upon the principle of volunteer fire services by the local communities. Even though a total of 5,000 people have been trained to date on volunteer fire services, no piece of legislation has been issued related to the rights or life insurance of citizens under the volunteer firefighting (TODAİE, 2016).

Another long-standing problem of the fire department in Turkey is that firefighting could not evolve into a profession. The fact that firefighting is not classified as a type of profession injures fire fighters in both social and economic terms.

Trained, professional fire fighters in first-world fire departments, who are on call 24/7 to protect against disasters and fight fires, have come a long way in terms of roles-authorities and responsibilities. In these countries, which are highly sensitive to international fire department standards, the profession of fire fighters has earned a lot of esteem and achieved the right to occupational classification. Although fire department organization is considered to be a profession in all developed countries, unlike teachers or police officers, fire fighters have yet to evolve into and be recognised as a profession in Turkey, due to a lack of legislation.

The fact that fire fighters, who are involved in life-saving activities such as fires, search & rescue operations, traffic accidents of all kinds that require specific qualifications

and experience, are not classified as a fully-fledged profession bring about multidimensional and extensive problems in fire departments ranging from applicant profiles to work processes. The first of these problems is that fire department personnel are not recognised or valued; and secondly, fire services primarily by the central government and the services delivered by its personnel are not recognised or valued. Fire department service, which is an important pillar of urban services delivered by local governments, is defined as an “invisible” field of service (TODAİE, 2016). Besides the negative attitude and approach towards fire services and personnel, failure to provide adequate technical and financial support to this field is among other problem areas arising out of the fact that firefighting is not classified as a profession. Additionally, the failure to transform fire services into an occupational category led to a multitude of personnel employment statuses within fire department organizations today. These statuses comprise civil servants, contracted civil servants, (recent legislation transitioned contracted civil servants to permanent staff) workers, temporary workers, engineers, and technicians. Salaries and social benefits of the personnel doing the same job but having different employment status do also vary. This leads to distress among the personnel doing the same job and occupying the same work post.

Consequently, lack of definition for fire services as an occupational category in Turkey under legal, administrative regulations constitutes a significant impediment to proper performance of the profession. There is an urgent need to issue legislation on the subject. In addition to legal regulations, the opening and dissemination of firefighting departments in official education institutions would be an important step in increasing the effectiveness of firefighting services and turning firefighting into a profession.

CONCLUSIONS AND RECOMMENDATIONS

With a long history, fire services are one of the service areas that ensure the continuity of cities and secure the living spaces of people living in the city. However, city dwellers are generally not very interested in the fire service. The value of this service as different from waste collection and water services, is not well understood. The importance of the fire brigade is often not readily apparent. It generally becomes apparent in emergencies.

The scope of work of the fire brigade has been expanded in line with the needs and demands that have arisen over time, and it has ceased to be only a firefighting service. Fire services have turned into a type of service that covers fire prevention and

extinguishment, as well as emergency and disaster response (large transportation accidents, industrial accidents, natural disasters, terrorist attacks, etc.). There is a great deal of legislation in Turkey regarding fire services, which have a wide service area and authority. However, legal regulations create problems that need urgent intervention rather than producing solutions for the fire brigades in Turkey. If it is necessary to briefly talk about these problems and the recommended solutions:

There is a problem of cooperation and coordination between the central and local governments in the fire services in Turkey, and there is no unit in Turkey that can ensure the integrity of all fire departments and carry out supervisory tasks as regards the legal basis, national organization, coordination, standardization, training, research and development.

There is an effective coordination problem between fire departments and central institutions in Turkey. The following pose important problems in responses to incidents: the absence of an integrated approach in disaster response in the legislation and coordination; the high number of organizations involved in fire and disaster response, which falls under the authority of fire brigades; the absence of a unit that would ensure coordination and communication between the different organizations as regards legislation, national organization, coordination, standardization, training, research and development, sports, certification, data banks, and supervision. In addition, many duties are assigned to fire brigade which can go under "carrying out other duties assigned by the mayor" (in accordance with article 6(k) of the Municipal Fire Brigade Regulation of 2006 and no. 26326) and are not actually among the main duties of fire brigades. The fact that the fire department can be shaped depending on the interest, experience, and knowledge of the mayor is one of the issues that may prevent specialization in fire services. It is also crucial to investigate the measures and supervisory actions that the central administration can take and to establish the necessary conditions for coordination.

In addition, many of the duties of fire department that fall outside of firefighting have parallels with the duties of the Disaster and Emergency Management Presidency and the Directorate-General of Forestry. These institutions have similar tasks especially in terms of fire prevention and search and rescue activities. Performance of the same tasks by different institutions leads to inefficient use of resources. Hence, "emergency

response agencies" in Turkey should be restructured, and the legislation should specify which agency is responsible for the fire service areas (for example, urban fire brigades; forest firefighters; sea, airports, private and voluntary organizations; etc.). In addition, it is necessary to establish a higher unit that can ensure the integrity of all fire brigades around the country and is responsible for basic fire services. In this regard, a firefighting and emergency management design that encompasses local specificities (in some areas, expertise on forest fires might be necessary while in others personnel-based or station-based development, or district-based⁸ qualities might be important), ensures effective coordination and sustainable financial management, and guarantees a clear information-task flow between the local and the centre while the nature of fire incidents are taken into consideration. In this respect, the Emergency Response Department, which operates under the Disaster and Emergency Authority under the Presidency, can be transformed into a Fire Services Department and undertake coordination tasks.

Volunteer fire departments are not established in Turkey and there is a lack of legal legislation on this subject.

Volunteer firefighting, used widely in many countries around the world, has failed to find a solid ground of implementation and could not become widespread since it is not well-known or well-understood in Turkey and are not covered in the legislation. A comprehensive legislative work is needed for the effective implementation of volunteer firefighting in Turkey and for the rights of volunteer fire fighters to have a legal basis. Until the necessary legislation is enacted on volunteer firefighting, fire stations equipped with the relevant search and rescue equipment and staff, and the relevant central authorities should raise fire and disaster awareness in all segments of urban society, especially students, industrial workers, and housewives. Also, volunteer firefighter projects should be developed, especially for rural dwellers and neighbourhood organizations should be formed so that loss of life and property is minimized in disasters and accidents.

⁸ District management, a tradition that has been maintained for centuries within the Istanbul Metropolitan Municipality Fire Brigade, has operated as a combination of the urban and human memory. Firefighters, who experience the daily practices of an section of the urban area virtually as a resident of that neighborhood, know such features as traffic density, building structures, road routes, and water resources in that neighborhood even better than a resident, after rigorous training. As a result of these trainings and the mental exercise, firefighters respond to incidents almost like a "live navigation tool" with a promptness and efficacy that any GIS system cannot achieve and garner very positive and striking results (TODAİE, 2016).

Another long-standing problem of the fire department in Turkey is that firefighting could not evolve into a profession. This causes firefighters to suffer both socially and economically.

Although firefighters in Turkey are involved in activities that require special skills and life-saving experience, in all kinds of fires, search and rescue missions, and traffic accidents, their work does not have a professional status. This needs to be resolved as soon as possible in order to protect the employment rights of firefighters and to provide fire services more effectively. In order to solve the problem, relevant legal arrangements should be made, and firefighting should be made into an occupational group such as police officers or teachers. In addition to legal regulations, the opening and dissemination of firefighting departments in official education institutions would be an important step in increasing the effectiveness of firefighting services and turning firefighting into a profession. It is known that progress has been made in this direction in Turkey. For example, there has been an increase in the number of institutions providing training at various levels on firefighting in recent years. The "Fire Fighting and Fire Safety" departments that provide training in vocational high schools, "Civil Defence and Firefighting" programs that provide education in two-year vocational colleges, and "Emergency Aid and Disaster Management" departments that provide education in four-year colleges train qualified personnel and managers that the fire department needs. However, although some priority is given to those who have received firefighting training in recruitment, the necessary legal amendments have not yet been realized for this issue in Turkey. Therefore, in firefighter recruitment, there must be a definite condition stating that the candidates must have "graduated from relevant departments".

In conclusion, legal arrangements are needed to fill in the gaps in fire services, ensure competent and effective response methods, and improve manoeuvring and coordination capabilities. There should be an agreed division of tasks amongst all actors about which organization/institution will be responsible for what incident responses and there should be standardized information whereby each organization/institution is aware of their and the others' duties and responsibilities. Making these changes would alleviate many of the problems in Turkey.

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