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ARTICLE / ARAŞTIRMA

The Effect of Industrial Landscape on the Urban Identity in Zonguldak

Zonguldak'taki Endüstriyel Peyzajın Kent Kimliğine Etkisi

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ABSTRACT

When the concept of identity that defines/emphasizes the distinctive feature is considered from the urban identity standpoint, the urban identity consists of elements that are particular to the city, and that give value and meaning to the city, distinguishing it from others. Experiencing these identity elements of the city by the people enables the formation of a common identity belonging to that city and the development of a sense of belonging. With globalization, various structures of the same type/style, which are not unique to the place, cause the cities to become disidentification and uniform each other. The industrial revolution brought new building typologies to the cities and new identities and images together with the social life. Zonguldak province, located in the Western Black Sea region of Turkey, is also a city that has gained its identity shaped with the coal industry. The fact that these values, which constitute the urban identity of Zonguldak province, are damaged/destroyed by human and natural factors over time puts the sustainability of the city's image and self-identity at risk. In this study, the industrial heritage values that constitute the urban identity of Zonguldak will be analyzed and discussed in the context of sustainability and industrial landscape concept.

Keywords: Cultural heritage preservation; industrial heritage; industrial landscape; sustainable heritage; urban identity.

ÖZ

Ayırt edici özelliği tanımlayan/ vurgulayan kimlik kavramına kent kimliği açısından bakıldığında kent kimliğinin; kente değer ve anlam kazandıran, kenti diğerlerinden ayıran ve kente özgü unsurlardan oluşan bir olgu olduğu görülmektedir. Kentlerde kimlik unsurlarını insanların deneyimlemesi o kente ait ortak bir kimliğin oluşmasını ve aidiyet duygusunun gelişmesini sağlamaktadır. Küreselleşmeyle birlikte yere özgü olmayan aynı tipte/ üslupta üretilen çeşitli yapılar kentlerin kimliksizleşmesine ve tektipleşmesine neden olmaktadır. Endüstri devrimi kentlere yeni yapı tipolojileri ve sosyal yaşamla birlikte yeni kimlik ve imajlar kazandırmıştır. Türkiye'nin Batı Karadeniz Bölgesi'nde yer alan Zonguldak ili de kömür endüstrisi ile kimlik kazanmış bir kenttir. Zonguldak kentinin kimliğini oluşturan bu değerlerin zaman içerisinde insan ve doğal kaynaklı tehlikelerle zarar görmesi/ yok olması kent imajının ve öz kimliğinin sürdürülebilirliğini riske atmaktadır. Bu çalışmada, Zonguldak'taki kent kimliğini oluşturan endüstri mirası değerleri analiz edilerek sürdürülebilirlik ve endüstriyel peyzaj kavramı bağlamında tartışılacaktır.

Anahtar sözcükler: Kültürel mirasın korunması; endüstriyel miras; endüstriyel peyzaj; sürdürülebilir miras; kent kimliği.

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TMMOB Şehir Plancıları Odası

1. Introduction

The social, cultural and physical effects of industrial works dating back about 3 centuries are still observable today.

The concept of 'industrial heritage' emerged when the values of industrial civilization were jeopardized by extinction. Destruction of industrial heritage sites sustaining the traces of the period it was built, constitute **a threat for urban memory and cultural sustainability**.

Based on the concept of comprehensive industrial heritage defined in the Nizhny Tagil Charter (2003), it is understood that the heritage sites in Zonguldak are an example of an industrial landscape within the cultural context.

Archaeological and historical studies redefine physical and emotional identities acquired through interaction between humanity and the environment. All items specified as **tangible and intangible traces, signs or evidence from the past in the local area** are determined and evaluated. The purpose is to reconstruct the original mosaic from which the pieces formed through **stratification over time**, and utilizing it (Del Lungo, et al., 2015).

The industrialization process has not been experienced the same in every country. Thus, the density and quality of industrial heritage, varying between countries, has been influential on the identity of cities by providing genuineness.

An urban area with an industrial identity can gradually become a symbolic part of a city and qualitatively improve the memorability of the space for citizens/visitors. An expression for the concept of urban identity necessitates a unified perspective of several urban elements of the place (eg street, square, building, public space, urban furniture and sculpture). Therefore, the comprehensive definition of place identity includes the role of each urban element (Ziyaee, 2018).

Industrial heritage sites in the UNESCO World Heritage List are described by different expressions such as 'industrial complex', 'industrial village/city/town', 'mining town/ landscape' (UNESCO, n.d.).

In this article, the identity of industrial heritage sites and the nature of the industrial landscape are analyzed with a conceptual framework and a detailed exemplary study is focused. Analyses considering the interactions between the factors of place identity and the cultural characteristics of the landscape are presented, as well. **In this context, mining industry areas and their surroundings located in Turkey's western Black Sea region, the city of Zonguldak** are explored. Its categorization as an industrial landscape area will be discussed, and the industrial landscape components of the areas will be presented.

As a methodology in the study, **the defining (practical) factors of cultural identity are tried to be listed**. An analytical framework that emphasizes the place identity from the cultural aspects of the settlement is utilized.

The cultural characteristics of the urban areas should be determined and administration should be executed according to these values in future urban transformation processes/ project studies. For this purpose, the symbolic factors of the place identity should be integrated by associating the characteristic elements of the cultural landscape with each other.

2. Development of the Concepts of Industrial History and Industrial Heritage

The industrial revolution is defined as the transfer of hand mining to the machine and the transition to the factories (Quataert, 1999). This revolution first started in England in the second half of the 18th century, it spread to European countries and the USA from the beginning of the 19th century (Köksal, 2005). The industrial revolution is indicated as the most important rosetta stone in history as a result of radical changes in many areas thanks to the development of technology, industrial production and transportation facilities (Touraine, 1995). Along with these, the construction of factories accelerated and new industrial areas were designed.

At the beginning of the 20th century, these industrial structures, which generally remained in the city centers with the growth of cities, were unable to keep up with economic, technological and social developments and lost their functions over time (Köksal, 2012). These industrial buildings, which lost their function, were abandoned without any repair or maintenance until the second half of the 20th century, caused collapsed areas in cities or were destructed after getting sold. In the second half of the 20th century, it was seen that these dysfunctional industrial buildings/areas should have been considered as industrial heritage because they bear the traces of the period they were built (Tanilli, 2006).

After the term industrial archaeology was brought to the agenda in the 1950s, studies on this subject increased and organizations working on the subject directed conferences and published charters (Köksal, 2012). In the 1970s, the concept of industrial heritage was brought forwards beside industrial archaeology and this subject has gained broader contexts as the thought of investigating the history of technology. The idea of destruction gave way to the protection and re-functioning approaches gradually (Nisser, 1987).

Industrial archaeology is defined in the Nizhny Tagil Charter for the Industrial Heritage published in 2003, as follows; "it is an interdisciplinary method that examines all tangible and intangible evidence and documents, all textures, layers and structures created by humans, human settlements and natural and urban landscapes created for or by industrial processes" (The Nizhny Tagil Charter, 2003). Again according to this charter, industrial heritage is "consists of ruins of industrial culture with a historical, cultural, technological, social, architectural or scientific value". "These ruins include buildings and machines, workshops, plants and factories, mines and processing areas, warehouses and storehouses, places where energy is produced, transmitted and used, and its transportation and all infrastructure. In addition, the housing units, places of worship and educational buildings used for social purposes in the industrial areas are also within the scope of the industrial heritage" (TICCIH, n.d.). According to the "Principles for the Conservation of Industrial Heritage Sites, Structures, Areas and Landscapes", also known as the Dublin Principles, adopted with the participation of the International Committee for the Conservation of Industrial Heritage (TICCIH) at the 17th General Assembly of ICOMOS in November 2011, "[t]he industrial heritage consists of sites, structures, complexes, areas and landscapes as well as the related machinery, objects or documents that provide evidence of past or ongoing industrial processes of production, the extraction of raw materials, their transformation into goods, and the related energy and transport infrastructures" (ICOMOS, 2011).

According to Clark (2013), "industrial heritage is a concept that reflects the technology of the period, and includes components of different scales from a single machine to a large industrial area" (Clark, 2013).

Industrial heritage sites included in the UNESCO World Heritage List are 'mining city', 'mining landscape', 'iron plant', 'water channel', 'railways', 'bridge', 'industrial village', 'industrial complex', are evaluated under different definitions such as 'industrial landscape'. (UNESCO n.d.). Among these definitions, 'industrial landscape' is defined together with the related concepts (Kabukçu, 2018). Institutions such as the Council of Europe on industrial heritage, The International Committee for the Conservation of the Industrial Heritage (TICCIH), the European Route of Industrial Heritage (ERIH), the European Federation of Associations of Industrial and Technical Heritage (E-FAITH), the European Voice of Civil Society committed to Cultural Heritage (Europa Nostra), International organizations such as the Committee for the Documentation and Protection of the Structures, Sites and Environment of the International Modern Movement (DOCOMOMO) conducts distinct projects. As of 2019, there are 1121 heritage sites in the UNESCO World Heritage List, 71 of 869 cultural heritage sites are considered as industrial heritage (UNESCO, n.d.).

3. The Effect of Industrial Landscape on Urban Identity

3.1. Urban Identity

Urban identity is a whole that belongs to the city, adds value to that city by rendering it different from the others, and is formed by the elements particular to that city. The identity of a city, in a way, means the spirit of that city. This spirit makes that city and living in that city meaningful. Urban identity, which is formed and shaped over a long period of time, is not static, but is a dynamic formation that is constantly developing and evolving, that can be renovated or deteriorated (Kaypak, 2010).

Maintaining certain conditions overtime is necessary for the formation of identity. Some of these conditions are cultural heritage or traditions, the nature and character of society's needs, factors dependent on geography, topography, climate, natural conditions, technology produced by the nation, and the ability to adapt to changing conditions (Gürsel, 1993).

According to Relph (1976), identity provides diversity. Relph, argues that place identity comprises physical features, appearance, activities, meanings and symbols including three interrelated components. Physical components include natural (eg. land, mountain, and lakes) or human-made environments (eg. buildings and streets). As the activities include the events occurring in a place, situations and functionality, meaning factors are shaped by the interactions and experiences of the users in it. The characteristics that give the place its identity are the physical structure, its socio-cultural dimension and the activities with user participation. The most distinctive aspect of an urban place's creation of collective memory is the vitality and specific architectural codes of it. In this context, the cases where the place identity of the city can be observed best are the urban common spaces that scale a city and bear the traces of values adopted by the society (Relph, 1976).

Urban places are the places where four main functions related to human life as accommodation, working, entertainment/recreation and transportation activities take place. In these urban places, place identity is formed with the different identities that the users attach to it (Giddens 1998). Symbolic aspects of interaction with a place affect the development of emotional bonds (Hay, 1998). The concept of identity is closely related to the attachment (Kyle, et al. 2004; Pretty, et al., 2003).

The concept of urban identity is related to how a city is structured, but also to how this structure is perceived and interpreted by people (Türkoğlu Dülger, H., 2002; Güremen, 2011). Massey (1994) states that the identity of a place is a special case that occurs as a result of the communication

between the user and the place. Identity is formed by being aware of the unique and distinctive characteristic qualities of the environment as a result of the individual's interaction with it (Massey, 1994).

Industrial heritage elements are also values that provide authenticity to the city identities. Industrial heritage buildings and areas have an important role in the city identity and social memory (Clark, 2013). Industrial landscapes, which are defined as a whole with the production structure and environment, are spaces that define the city they are located in, and give it an identity (Tülek and Atik, 2013, p.120). One of the most concrete examples of this is the city of Zonguldak, which has existed, developed, and gained identity along with its industrial heritage values. In terms of cultural sustainability, it is necessary to preserve and maintain industrial heritage sites.

In the process of change, cities often lose their identities, evolve, and become similar (Oğurlu, 2014, p.276). At this point, the important thing is that the changes are articulated to the existing identity and conform to the self-identity without damaging the spine. In order to ensure development by preserving the urban identity, the ecological, social, cultural, and aesthetic dimensions of development should be considered together with the urban identity while fulfilling the requirements of the economy in the development plans; in other words, holistic planning is required (Oğurlu, 2014, p.277).

3.2. Industrial Heritage in the Framework of Cultural Sustainability

Industrial heritage values are a part of the industrial culture and cultural heritage concept. For this reason, its values are important in terms of reflecting the characteristics of the culture it belongs to and witnessing a period. These values include industrial culture and past technological and social information that they transfer to future generations (Clark, 2013).

An industrial heritage remain is defined as what has remained of an extraordinary combination of geological and human histories. Extensive mineralization associated with this geological and geographic area and respective hard-rock mining has formed a significant aspect of the social and physical identity of the landscape and its communities (Barker, 2006).

Factors that jeopardize industrial structures are, loss of their functional values, sales due to economic concerns, abandonment after not adapting to technological developments, leaving the buildings neglected after being abandoned, dismantling of machinery equipment and structural damage to buildings (Acar B., 2015). These situations create negative effects in terms of cultural sustainability. The main reasons for neglecting cultural sustainability are lack of numerical monitoring as in economic or environmental sustainability and short duration of this activity (Clark, 2013). A sustainable urban and social fabric is formed after understanding local resources, associating them to each other and adapting them (Williams 2007, p.69-70).

To achieve social and cultural sustainability, a holistic planning process is needed. Thanks to long-term planning strategies, the future effects of sustainability dimensions can be predicted (Landorf, 2011). The touristic attraction created by cultural heritage sites also provides an important economic income for the region where it is located (Aksoy and Enlil, 2012). The substantial role of sustainable tourism and its contribution in the management of heritage sites is detailed in the International Cultural Tourism Charter prepared by ICOMOS in 1999. "Placing a long-term protection status on the physical and cultural integrity of the buildings and areas that have heritage values" should form the basis of sustainable tourism development policies. Since the interaction between heritage resources and tourism has a dynamic structure, attention should be on the conservation of local values while meeting the needs and demands of visitors" (International Cultural Tourism Charter 1999).

The Budapest Declaration, published by the World Heritage Committee in 2002 to raise awareness and support for world heritage, emphasized the need for a balance between conservation, sustainability and development while stating that local people and communities should be encouraged to participate actively in the process. In addition, it was emphasized that suitable activities such as sustainable tourism that benefit economic and social development should be included (Budapest Declaration, 2002). Through the Amsterdam Conference titled 'Linking Universal and Local Values: Managing a Sustainable Future for World Heritage', UNESCO emphasized the approach of integration into new systems to ensure consistency between the past and the future, thus preserving the value of a place (UNESCO, 2003).

One of the themes under the 40th anniversary of UNESCO's 2012 World Heritage Convention in Kyoto was 'World Heritage and Sustainable Development: **The Role of Local Communities**' (UNESCOa, 2012, p.1). Accordingly, 17th article of the Ouro Preto (Brazil) Board meeting emphasized that cultural heritage is **a dynamic interaction including the tangible and intangible dimensions**. Therefore, a more inclusive definition of heritage in the World Heritage context has been called, **the well-being and inherent relevance of local communities** has been emphasized as it will be related to the concept and goals of sustainable development (UNESCOb, 2012).

The 11th article of the Sustainable Development Goals (SDG), established by the UN in 2015, covers the subject of 'Sustainable Cities and Communities' (Sustainable Development, 2015). As the sub-article 11.4 focuses on 'increasing efforts to protect and monitor the world's cultural and natural heritage'. With the concept defined in this article, the sustainability of the intangible cultural heritage values of the communities besides the tangible/physical cultural heritage values of the cities with the concept of 'sustainable communities' is emphasized.

United Nations, stated that despite increasing environmental problems an effective and sustainable development will be achieved by establishing links between humanity and ecology, industry, urban growth and development, economic development, and a safe and peaceful social environment (UN, 1987).

There are different practices regarding conserving and reproducing industrial heritage. Many similar approaches are observed through the applied examples. These are approaches such as the using the industrial heritage with its original function by adapting it to the present day, the repurposing of the industrial heritage as a museum or with different functions.

Most of the industrial heritage sites and structures are used as museums today and they are an important source of income for tourism regarding the region where they are located. In particular, mining basins and facilities that have been repurposed as open-air museums attract great attention from tourists (UNESCO, 1993).

Industrial buildings that are considered as architectural heritage and re-functionalized are places where people can easily maintain and adapt. These have large volumes and surfaces to meet needs such as cultural functions as they are also suitable for developing a public project thanks to their size (Landry, 2006).

3.3. Cultural Landscapes

Cultural landscapes are defined as 'integrated works of human and nature' specified in the definition of cultural heritage determined by UNESCO. This definition has been commonly used since 1992. "Cultural landscapes show the evolution of human society and its settlements and the natural environment under internal and external threats and opportunities of social, economic and cultural forces" (World Heritage Committee, 2012). Cultural landscapes form a specific category of heritage, distinguished by an integral combination of natural and cultural values. This type of place encompasses an area that includes more than the built heritage and is the result of the collaborative work of humans with nature. A cultural landscape is "especially includes elements such as topography, geomorphology, hydrology and natural features of the area, both historical and contemporary built environment, infrastructure and superstructure, open areas and gardens, land-use models and spatial organization, perceptions and visual relations and all other components of urban structure" (UNESCO, 2011). Forests are complex ecosystems that play a multifunctional role contributing to the conservation of local biodiversity in cultural landscapes (Mitchell et. al, 2009; Roloff, 2016).

The basis of the definition of cultural landscape refers to the interactions between human, society and environment. An adequate understanding of the cultural landscape components should develop a strategy for maintaining the cultural aspects of urban landscapes in the planning/design project processes (Ziyaee, 2018).

Brown (2001) divides the classification of cultural landscape elements into two as tangible (e.g. transport corridors and intersections, utilities, land cover, areas of cultural significance, key commercial/industrial concerns) and intangible elements (such as political and census boundaries, property and land-use). O'Donnell (2008), on the other hand, describes the main elements of the cultural landscape as tangible heritage values addressing physical aspects and intangible heritage values indicating the meaning of the landscape. Vogeler (2010), divided cultural landscape features into three main groups that can be recognized from cultural meaning and its message, human behavior and activities, and physical forms.

3.4. Industrial Landscapes

When the cultural landscape is defined as an expression of the interaction between human activities and land, the industrial landscape can be addressed as the outcome of the impact of industrial establishments, industrial machines and processes on the area (Osborne, 1976). In other words, the industrial landscape consists of considerate and systematic activities of human beings to develop industrial activities in the natural or agricultural area (Borsi, 1975; Palmer and Neaverson, 1994). For this reason, when intervening these heritage areas, holistic plans focusing on the whole area rather than individual buildings should be designed (Loures, 2008).

In 2013, a study was carried out by TICCIH Germany to discuss the industrial landscape and mining landscape concepts and ICOMOS Germany how the industrial landscapes should be conserved within the framework of UNESCO World Heritage. In the context of this workshop, it was accepted to the UNESCO World Heritage List in 2001 with the name of Germany's 'Zollverein Coal Mine Industrial Complex' (ICOMOS and TICCIH, 2013). It has been stated that the rivers, canals and railways in the Ruhr region, besides the monuments and industrial buildings, are an important part of the industrial landscape character of the region and this area was described as an industrial cultural landscape area (SIG, 2017). Prior to this study, the only example included in the UNESCO World Heritage List as an 'industrial landscape' is the Blaenavon In-

Figure 1. Location of Zonguldak, Turkey and the Western Black Sea Region, the location and boundaries of the area's industrial landscape Zonguldak (Map General Directorate, n.d.; Zonguldak Municipality, n.d.)

dustrial Landscape, England and Northern Ireland, 18th century. In 2015, the 2nd collaboration meeting between the ICOMOS Germany and TICCIH Germany in Dortmund, the idea that these areas do not have to belong to a single history but that they consist of layers that emerged with historical and economic developments were considered, as well (TICCIH, 2015).

Industrial landscape areas do not only include the factory building but also the workshops and warehouses, shelter places created for workers, schools, public spaces, commercial units and transportation systems around it (Edelblutte, 2006). Besides the tangible heritage, industrial landscape areas also include the intangible heritage value through the lifestyles of the inhabitants, the production techniques they have used and the industrial culture (Loures, 2008).

We observe in different examples and studies in the world that the landscape described in the Conventions possesses broader characteristics and concepts. Today, the focus is provided within a broader 'landscape' term, beyond familiar terms such as 'street landscapes' and 'urban landscapes'. Likewise, terms like "seascapes", "disappearing landscapes" and **"hidden landscapes"**[1] are employed to describe landscapes that are **beyond our view** in one way or another. **Hiddenscapes** are often used to refer to the subterranean 'hidden' landscape and a deeper time dimension of archaeological sediments (Phimester and Tait, 2014). However, landscape can extend to 'scapes' that are hidden from view, whether as a result of their nature and purpose, **for example, through the extraction of natural resources**, or because the landscape is deliberately hidden from view (Phimester and Tait, 2014).

The **common point** of the most world heritage sites with industrial landscape content is the 4th article of the 10 selection criteria specified in the UNESCO Functional Guide. "4th article: To be an example of a superior building that demonstrates important architectural, technological community or landscape stages in human history" (World Heritage Committee, 2017).

It is stated in the European Council's Report of Industrial Heritage in Europe, 2013, that industrial areas formed a **a social landscape** besides the financial heritage value (Council of Europe, 2013).

4. The Values that Created Zonguldak's Identity and Cultural Landscape

4.1 The Impact of Industrialization on Urbanization in Zonguldak

After the 1840s, Zonguldak began to rapidly urbanize with the start of the processing of anthracite in Zonguldak Turkey (Fig. 1) and the gradual increase in production. In a relatively short time, Zonguldak gained an urban appearance in the last quarter of the 19th century.

[1] The biggest difference between hidden and disappearing landscapes is scale. Hidden components are indistinct and more difficult to recognize than other more distinct objects (Bintliff 2000; Bintliff, Howard, and Snodgrass 1999), but ultimately they can still be identified.

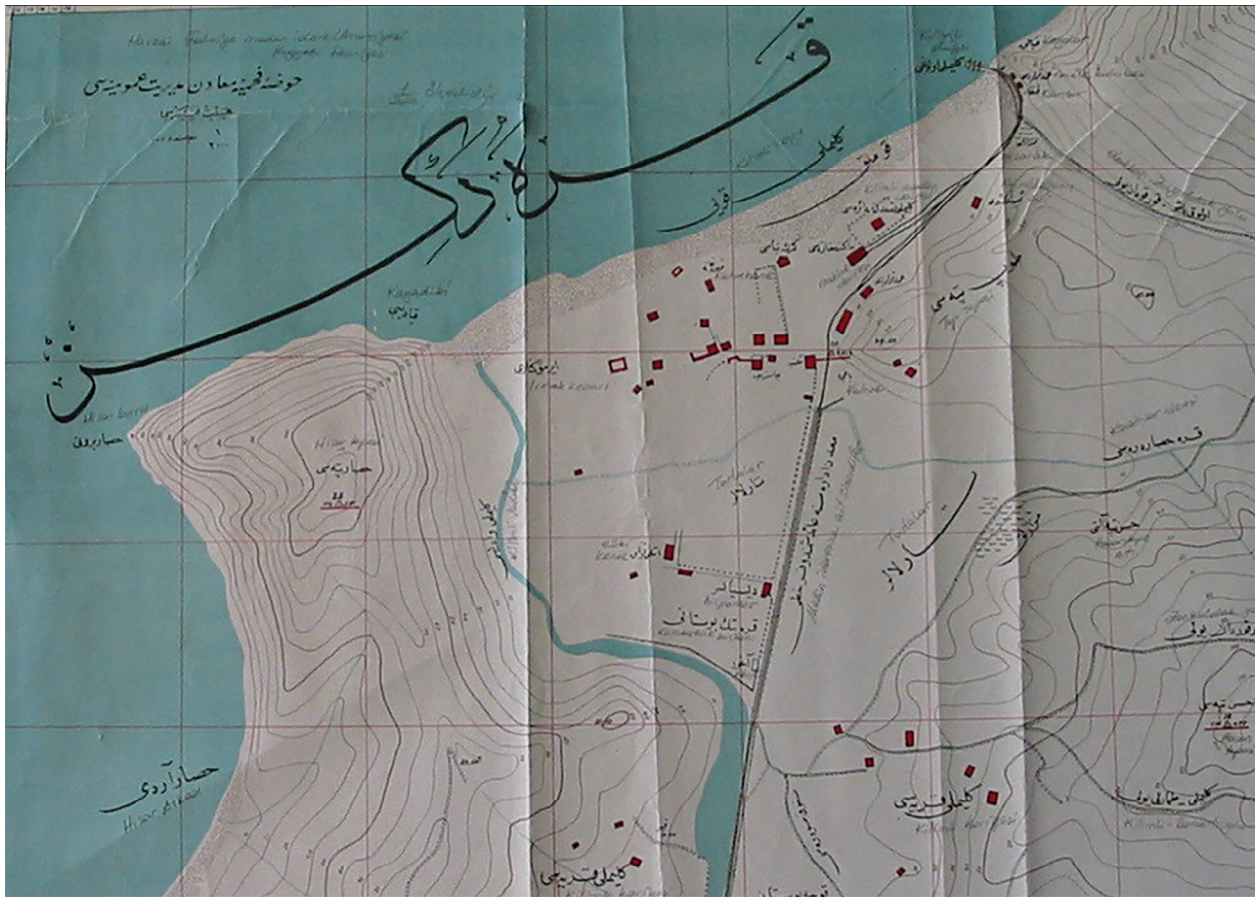

Figure 2. Kilimli shimendifer line in Havza-i Fahmiye (coal basin) maps (Ottoman Archives n.d.).

At first, the coal production center was in Kozlu, a district of Zonguldak. Zonguldak city center gained importance with the construction of rails carrying coal to the port in the early 1890s (Fig. 2). In the following period, this place became the center of coal production. The municipal organization was also established in Zonguldak in 1899 (Apaydın, 2020).

The Ottoman State official documents in 1898 specify the types of buildings built here as (in the Kastamonu Annual dated 8 August 1898): "The constructions built by the Ereğli Ottoman Company for the Mining Ministry were adequately built for the needs of the company's harbor, quarries, chemindefer officer and worker. Two or three families for each were settled in the majority of the houses in the barrack type located around the quarries" (Çatma, 2006).

Transporting coal is the most important issue for the sustainability of the mining industry. With the increase in production, the region required a port. Zonguldak city center, which has a wide delta and valley plain and an advantageous topography was found suitable for the construction of the port. (Çatma, 2006; Apaydın, 2020). The construction of a harbor in Zonguldak Center, which is located in the middle of Karadon, Armutçuk, Kozlu and Kilimli openings in the city's expansion and settlement decisions, the establishment of transportation connections with these places, started the urbanization in the city and other settlements (Kozlu, Kilimli, Çatalağzı) adjacent to it (Fig. 3) (Çatma, 2006).

Companies with foreign capital (Fig. 4), the French in particular (Ereğli Societe d'Heraclee), came to the region for coal production, enriched the development of the city with the production facilities, social and cultural spaces (administrative buildings, lodgement, recreation-entertainment-sports facilities) and led to the establishment of new neighborhoods.

Also, accommodation of 'permanent workers' from outside the basin and those who come for trade has played a role in the urbanization of Zonguldak. These people affected the social, cultural and political issues and have taken part in local governments and formed the city (Koca, 2005).

Places such as residential areas/housing-social-cultural-sports areas have been built in the business areas where coal mines are established beside the city center of Zonguldak, thus new settlements (Kozlu, Kandilli, Kilimli, Karadon, Gelik) were es-

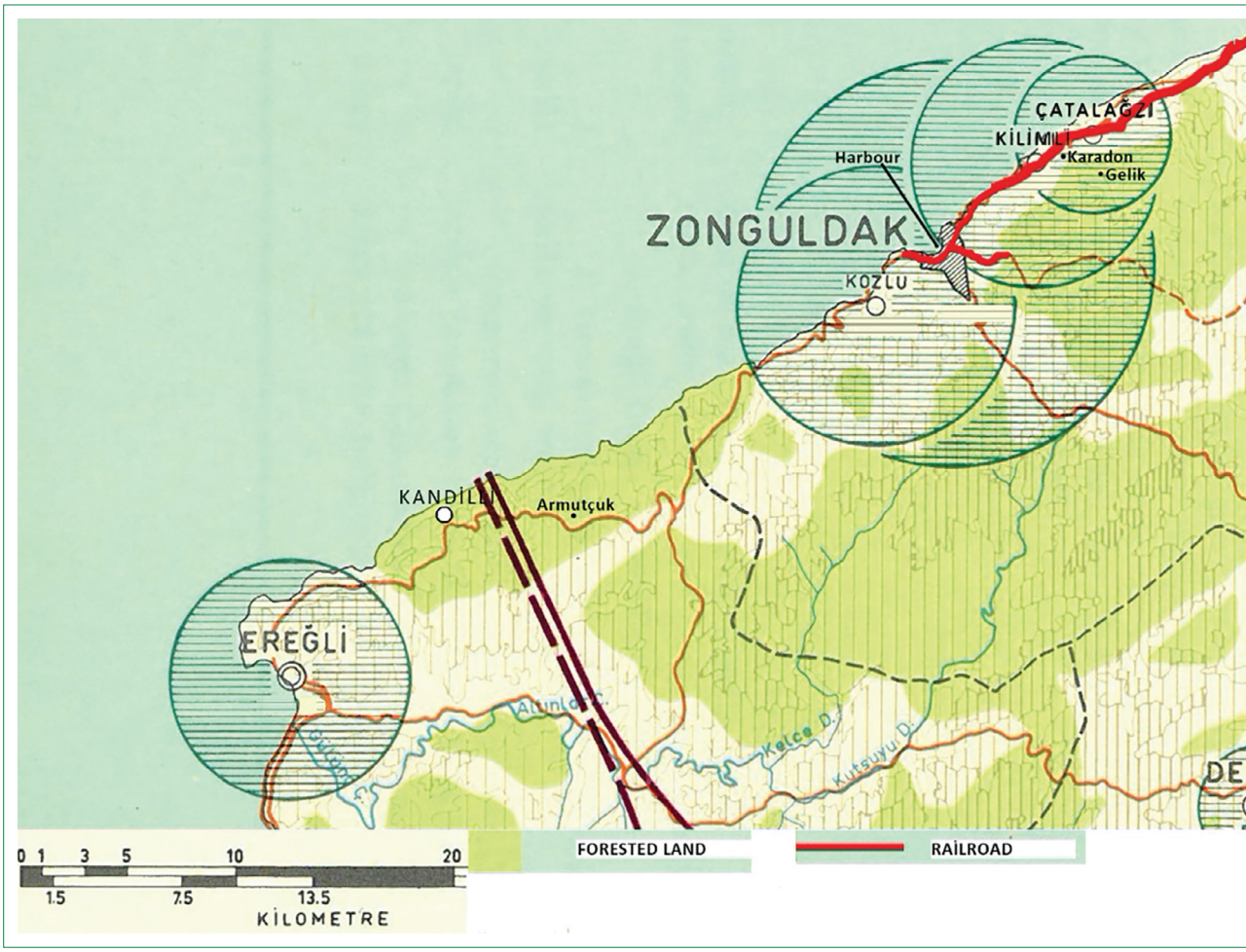

Figure 3. Location map of coal production centers in Zonguldak (Prepared by the authors based on the İller Bankası's map, 1971).

tablished (Fig. 3, 5). The construction of the thermal power plant contributed to the establishment of the Çatalağzı settlement in the east of Kilimli.

Small settlements have been linked with Zonguldak by both road and rail except for Kandilli. Another important factor that improves urbanization in the coal basin (Fig. 6, 7) is the increased worker recruitment since the 1940s, the heavy migration to the city and its immediate surroundings. These factors expanded the cities to rural areas until the end of the 1970s. This situation increased the production of slums (Apaydın, 2020).

The decrease in coal production after 1980 brought a decrease in the worker number. This situation negatively affected urbanization and urban population. In addition, the increasing privatization in the 2000s and the government's reduction of investment (BAKKA, 2013; Apaydın, 2020) disrupted the integrated functioning of the coal basin and had negative effects on the city. Due to the decrease in production and the number of workers, the production areas were abandoned and they became dysfunctional (Fig. 8). These negative situations continue to lead to the loss of the integrity of the tangible/intangible values and the identity of the city, which are important places of memory for the city and the residents (Fidan and Önür, 2021).

After 1920, production areas/quarries belonging to foreigners in the coal basin started to be transferred to the state gradually (Zaman 2012). As a result of the changing policies after the proclamation of the Republic, a planned settlement scheme was adopted in the city and new industrial facilities were built (Fig. 9) (Özgönül, 2007). The entire coal basin was nationalized in 1940 (TTK, n.d.). The management of coal mining in the basin from this date until 1957 was assumed by Ereğli Coal Mines (OCT), Turkey Coal Enterprises (TKI) until 1983, and Turkey Hard Coal Enterprises (TCC) after 1983 (Zaman, 2012).

4.2 Studying the Cultural Landscape of the City Through Identity

Zonguldak where cultural and natural heritage values that form the identity of the cities people settled has a cultural

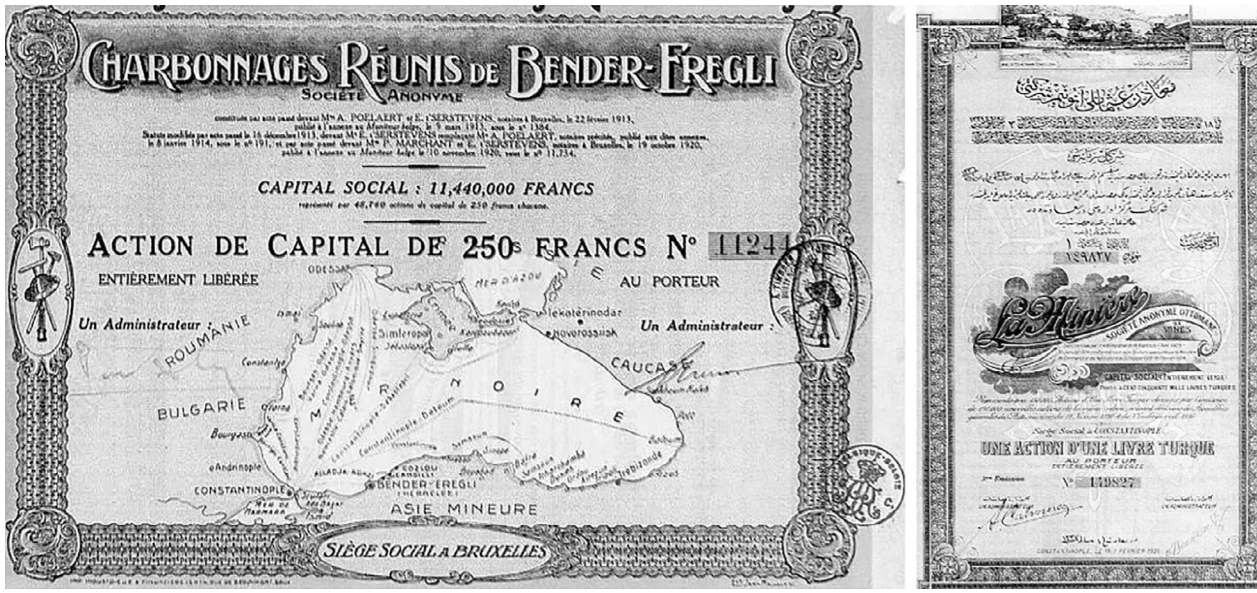

Figure 4. Archives stocks of mining companies owned by Ottoman and foreign companies (Ottoman Archives n.d.).

Figure 5. Çatalağzı coal processing facilities, thermal power plant and its location in the city, 2016. Source: by the authors.

landscape constituted by industrial buildings/areas, settlements established for production, forested areas, the sea, the social-cultural-economic structure produced in this region, the history of the city and the memories of the people.

Zonguldak was described in one of the modern written sources, Mining Engineer Hüsrev Güleman describes the city he saw in 1911 after he arrived in Zonguldak by ferry: "… Zonguldak was really eye-catching and pictorial from a distance with its small settlements spread on lush mountain slopes that seem separated from each other by a set of narrow and wide valleys. Behind a filthy sand place used as a pole blend on the beach, the launders of the Ereğli Company working with old coke ovens were visible. The Üzülmez railway route, ending at the port, seemed like the town's only main street. There were no interesting buildings on the seaside other than the headquarters of the Ereğli Company. On the land side of the street, there were five or ten lodges with a calm view from the harbor, and some small wooden or masonry structures between them, sometimes looked like as ruins were standing out" (Güleman, 1938).

The combination of the facilities and structures that make up the city and the harbor, located on both sides of the railway passing through the middle of the city, portrays an industrial city and resembles the image of a mining city (Fig. 10). In addition to the natural and constructed texture, the subterranean landscape provides evocative information about the various uses of the coal mines on this matter.

The bazaar in the center of Zonguldak was established on the plain at the Üzülmez stream mouth. The topography of the city is rugged, steeply sloped and partially mountainous. It is observed that neighborhoods are scattered on the slopes of the hills. The decrease in production impeded the development of urbanization due to a city area is on the coal beds and the topographical difficulties, as well as the increasing privatization after the 2000s and the neglect of the state (Fig. 11).

Zonguldak coal basin, which is important in the context of industrialization in Turkey, provided the platform to the establishment of the first trade union in Turkey, the first workers' hospital and foundation of the 'Workers Law'. In this respect, it pioneered a social structure. Additionally, the Higher School of Mining Engineers was established in 1924, to train engineers and technical staff to provide a qualified workforce.

The industrial identity of the Western Black Sea Region is characterized by coal, iron steel and forestry industries.

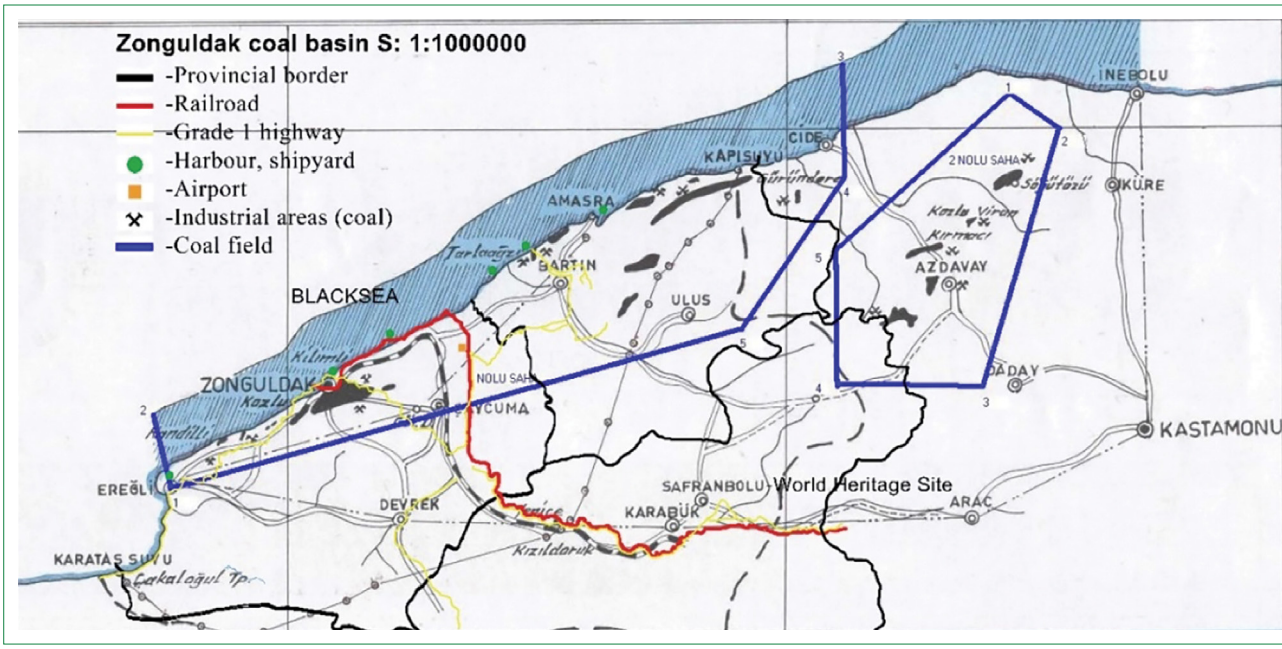

Figure 6. Zonguldak coal basin S. 1:1.000.000 (Prepared by the authors based on the TTK's map).

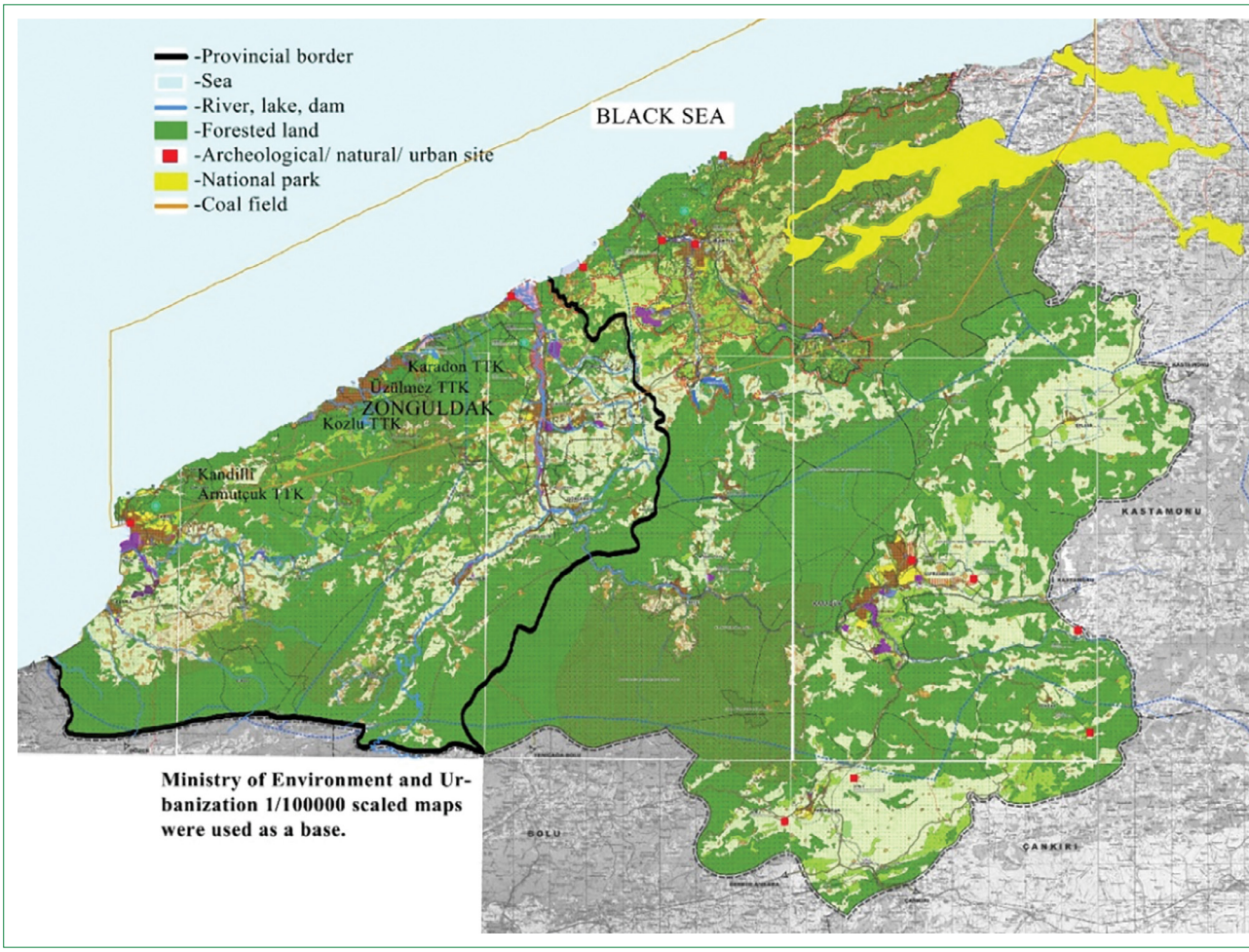

Figure 7. Ministry of Environment and Urbanization's map Zonguldak coal basin S: 1:100.000 (Prepared by the authors based on the Environmental Plan).

Figure 8. Inactive industrial structures, Kozlu İncirmanı, 2017. Source: by the authors.

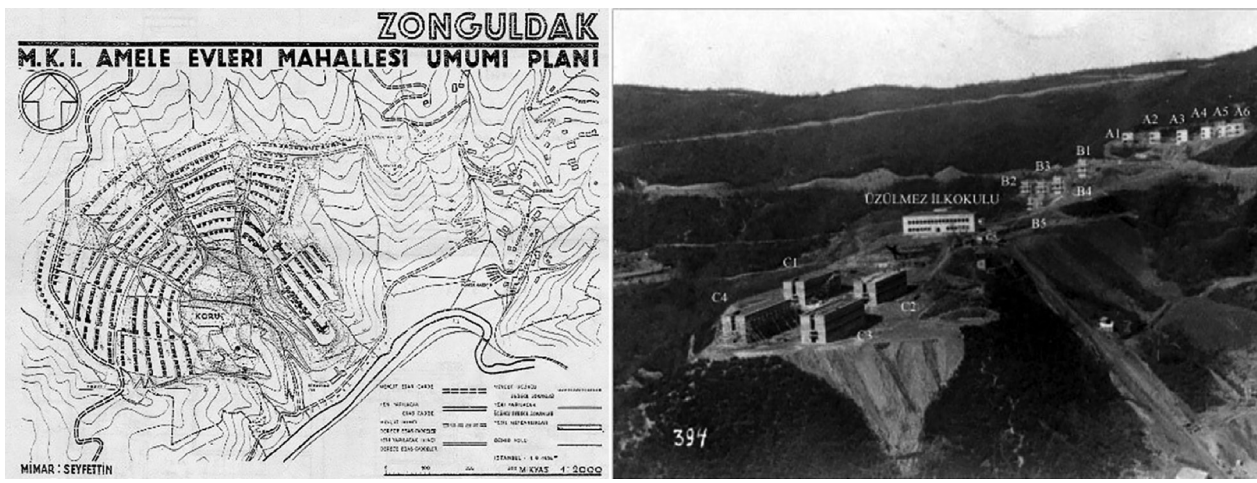

Figure 9. Zonguldak Worker Houses Neighborhood, an example of planned urbanization, Üzülmez, Architect Seyfi Arıkan (TBMMO, 2010).

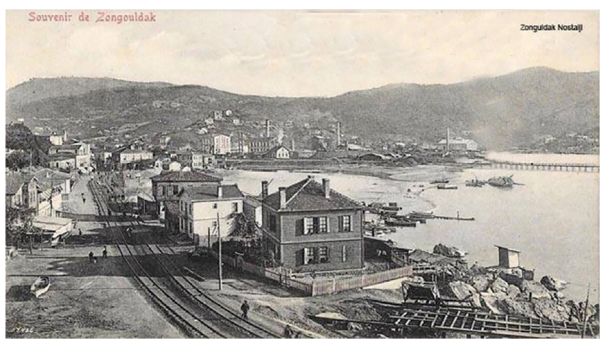

Figure 10. Zonguldak city view in the early 1900's (Zonguldak Nostalgia n.d.).

Figure 11. Zonguldak Center, view of the city from the wooden pier (Zonguldak Nostalgia n.d.).

Thanks to coal extracted in Zonguldak, iron and steel factories were established in Ereğli and Karabük which were the pioneers of the industry in the Ottoman Empire. In addition, it has also enabled the establishment of other sectors and industries (thermal power plant, brick, side sectors, etc.) (Fidan and Önür, 2021).

The existence of large forest areas in the region has also pioneered the development of the forest industry. Since the beginning of coal mine processing in the Zonguldak coal ba-

Figure 12. Çatalağzı Lavuar facilities are close to the sea and some units continue production in the forest area. Source: by the authors.

sin, timber mines obtained from the region, primarily Devrek, were also used (Quataert, 2009).

Most of the coal producing areas in the city have been built in areas close to where the forest and sea coexist. This is the case that portrays the cultural landscape in the best possible way (Fig. 12, 13).

Nowadays, although the contribution of the industry based on coal production to the city economy has decreased, it continues to exist as a source of income. Daily life in Zonguldak is still nested with coal. Even the undergrounds of the settlements are coal deposits. As in the underground there lies a bigger city with hundreds of streets, roads and stairs. Furthermore, there are subsidence areas with coal reserves in Zonguldak. Construction is not allowed in these areas. This limits the housing in the city center, which decreases the intracity settlement area.

Since the first coal extraction in Zonguldak, different administrative methods have been experienced regarding the management of the coal basin production. During these processes, investments were made by both domestic and foreign capital companies, and this enabled the city to grow in every aspect.

In underground coal mining, underground structures are established and niches are formed layer by layer. Previously,

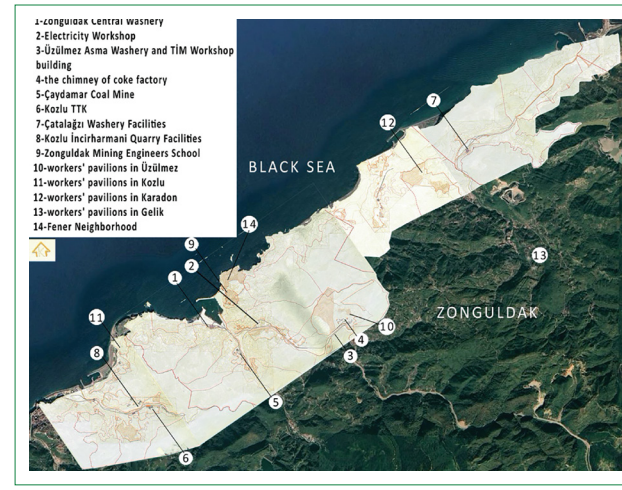

Figure 14. Location map of industrial heritage values in Zonguldak (Prepared by the authors based on the İller Bankası's map, 1971).

wooden poles were used in Zonguldak, which are replaced by steel nowadays. The excavated coals inside are brought to the entrance level by the rail system and open wagons.

The things that make the space meaningful in the coal mines of Zonguldak; tools scattered on the floor, niches carved on the walls, wheelbarrows carrying coal, handmade tools, oil lamps, lanterns… In addition to these, hearing the "sound of production" in the vicinity of the factories while walking around the city (production continues all over the city in different business lines), feeling the smell of the coal mined and processed in the city at all times makes every individual experience the active charcoal production ongoing in the city, either directly or indirectly. It is also known that there are tunnels under the city, which are connected to each other under the mines and used for coal conveyance.

Zonguldak is a multi-layered aboveground and underground region that includes historical components related to coal.

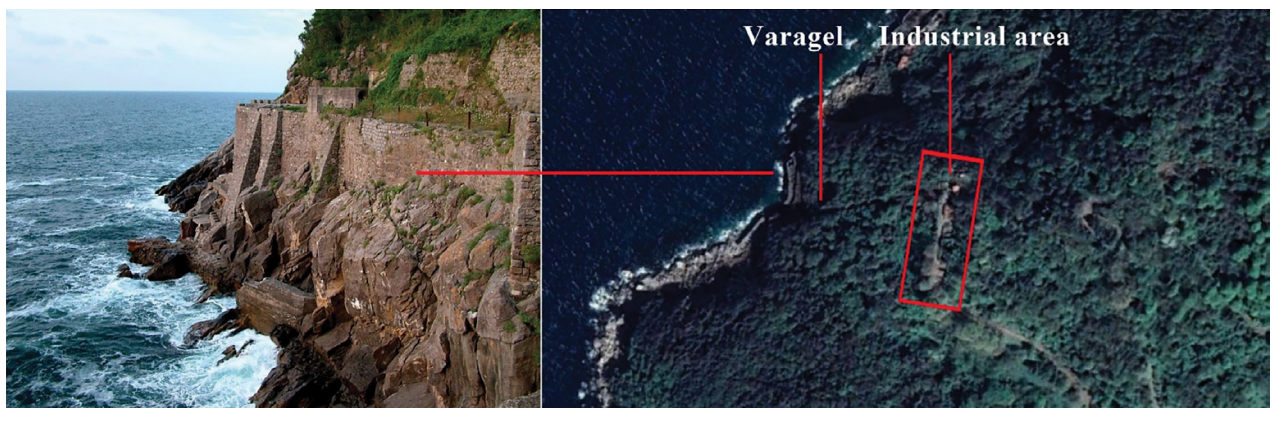

Figure 13. Kandilli production facility, established where the forest and the sea coexist, is currently inactive (The first cableway- (varagel) application from the sea to the business in the forest) (sources: googlearth and photos).

The impact of coal production in Zonguldak on social life and urban identity is exemplary, as the philosophy of the cultural landscape convention focuses on the nexus between people and place and the idea of "heritage everywhere".

The mines are located underground and people shape nature subterraneously by broaching these mines. Intervention in nature or design in nature starts underground and continues above ground. Wells are built above ground, and rail systems are constructed to convey the coal to another system. Minerals extracted are sorted (categorized), processed, washed (in the lavatory), and distributed at the facilities built, while ports are constructed for maritime transport. Mining landscapes, a subset of industrial heritage, constitute an important group in the world heritage list. The cultural landscape developed by mining creates a cultural landscape that exists both underground and above ground.

Mines, being at the intersection of geological and human, are mapped in an ever-changing pattern that is constantly erased and redrawn. No matter how extensive the human drawing is, humankind has touched only a part of the hidden world of mining they entered, but as long as some of the ancient works remain accessible, the human story continues… (Barker, 2006). Zonguldak represents a geomorphic landscape that has been greatly altered by industrial activity.

The coal production process, which has been going on for centuries in Zonguldak, serves to remind us of other aspects of the landscape and the various ways people perceive it. A place and a landscape are defined by the interaction of people with it. Although coal mines and underground tunnels as "hiddenscapes" remain inaccessible or partially inaccessible places for many, people continue to identify with them for many various reasons.

The predominance of the green texture designed artifactually in the settlements created within the city for the shelter of those working in the coal industry in the Zonguldak Fener District today appears as breathing points for the city of Zonguldak. The design of these areas/settlements that emerged with coal production are examples of cultural landscape in the context of human-nature relationship.

Workers' settlements, lodgements and social facilities are important architectural values in the city as well as the coal production facilities that created the city of Zonguldak and created its identity. It has developed not only in economic terms through production, but also urban, cultural and social development.

The coal industry areas in Zonguldak, enabled the development of the social landscape as well as the cultural landscape in the city. The fact that locals lived together with Europeans regarding production activities in the city for many years and the persistence of life in the industrial areas and settlements ensured the early modernization of the city and daily life and pioneered cultural fusion. In addition, names driven from the industrial identity of the physical places/neighborhoods/streets in the city were given and they left a mark in the memory of the residents. The integration of the contents belong to cultural landscape and urban memory together indicates sustainability.

4.3 Risks and threats to cultural values of Zonguldak

The coal imports into Turkey and the widespread use of natural gas has begun to decrease the need for coal. Industrial sectors that need coal to ensure the regularity of a certain hard coal production quantity. However, the decrease in coal production causes abandonment of places. Some production sites were demolished, as in the Zonguldak Central Washery plant example. The ruins of this facility, 3 towers and infrastructure silos, were certified and given protection by Turkey Cultural and Natural Heritage Conservation District Board. The dysfunctional Electricity Workshop located at the entrance of Zonguldak city has been registered and taken under protection thanks to the struggle of non-governmental organizations. The concept project for the re-functionalization of the inactive Zonguldak Üzülmez Asma Washery and TİM Workshop building has been completed but yet to be implemented. Other parts of the coke factory located at the city entrance are demolished, except for the chimney. The coke factory chimney has been registered and taken under protection without any use. Parts of Çaydamar Coal Mine located in the center are inactive, some buildings are rented to the private sector and used with functions outside their identity. The structures in this facility have not been registered by the board. In Kozlu district of Zonguldak, inoperative cranes, propellers, etc. belong to TTK, some production building is currently inactive, as no structures are not registered by the board. The Çatalağzı washery facility, which has been inoperative for a long time in the Kilimli District of Zonguldak, is currently used for industrial purposes, but this building has not been registered by the board. Some buildings in Kozlu İncirharmani Quarry Facilities were re-functionalized and opened to the use of the university. Some buildings (compressor, administration, additional service) in this facility are inactive. Besides there are also some examples of re-functioning in the city as Zonguldak Mining Engineers School is used as a high school and the conversion of the building used as a hospital building into a public building (Fig. 14).

It is observed that the settlements established for coal industry workers' housing needs are also faced with the threat of extinction. Most of the housing structures were demolished in the Üzülmez campus and ordinary residences were built by the state. A small number of buildings on the campus have been registered by the board, and others are inactive. The houses on the campus established in Kozlu were not registered by the board, but a school building was registered.

Some of the buildings have perished over time. The campus, lodgement and workers' pavilions established in the Kilimli Karadon region have become a depression area today and the buildings have not been registered by the board. 8-9 units of approximately 200 lodgments remain on the campus located in the Kilimli Gelik region. These structures are also neglected, the barn building and dispensary are inactive as the buildings are not registered. Fener Neighborhood, located in Zonguldak Center, preserves the integrity of its lodgements, social and cultural spaces to a large extent. It is observed that some buildings such as houses and churches in the neighborhood are sustained with a different function (Fig. 14).

The negative impact of coal on the environment and human health in the journey that had begun with the mining of coal is associated with the mixing of substances formed during the combustion of coal in thermal power plants and its use in other areas, into the water, air and soil environments. In addition, mining is an activity that causes deterioration of surface waters such as rivers, lakes, etc., and also affects groundwater hydrology and quality (Çeçen, 2014). Furthermore, coal mine workers have a higher risk of contracting various types of cancer and respiratory diseases in comparison to the general public (Haas, 2015).

Coal fires can occur in abandoned mines or areas where coal waste is stored in heaps. In addition, fly ash is mixed into the atmosphere during these fires. Another effect of coal fires is that they increase the surface temperature and cause groundwater, soil, and air pollution. Fly ash is also usually formed by burning coal in thermal power plants. Fly ash formed by coal-burning is converted in various ways (Global E. M., 2021).

All operations related to coal mining (extraction, transport, and storage) account for approximately 8% of global methane emissions (World C. A, 2021). The coal industry makes several efforts to minimize the detrimental environmental consequences of coal mining. Methods have been developed to extract methane from coal and prevent its release into the environment. Capturing methane before it is released both reduces greenhouse gas emissions and increases the safety of underground coal mines (Haas, 2015, p.301). The novel technology in the power plants helps to keep the air clean while cleaning and processing the coal. In addition, there are certain legal regulations abroad (the Resource Conservation and Recovery Act of 1976 - RCRA) to ensure that hazardous wastes from mining are handled, stored, and then disposed of in a way that protects the environment and the individuals in it (Haas, 2015).

It is mentioned in the texts that the beautiful coves that used to exist in Zonguldak are filled with waste, the green areas along the coast turned into black stony and earthy fields, the swimming areas and the coves disappeared over time, and the blue color of the sea is now gray and sometimes black. Moreover, since coal is transported in open-top wagons, a significant amount of dust is mixed into the atmosphere with the effect of the wind (Uzun, ..).

Uzun (Uzun, ..) reveals the current situation by saying "the pollution of the environment in the basin has a history of approximately 100 years. Environmental pollution was not attached importance, policy was made only on production, washing, and sales. No policy has been produced to protect, develop and recover the environment". Saying "Perhaps, Zonguldak is the only basin in the world where coal production, washing, storage, and sales processes are carried out in the same place and intertwined with residential areas", Uzun also draws attention to the unique coal adventure in Zonguldak as well as the environmental problem in the city.

Some of the transportation networks established to transport the products in industrial areas both between facilities and to other places have gradually become dysfunctional due to abandonment of industrial areas/buildings and the technological advancements. Various projects are currently being designed on restoring the functionality of the railways network both in the city and the surrounding provinces.

The fact that most of the industrial areas are not officially documented (registered by the ministry), the inaccurate usage of the registered ones, their inactive state or demolition has caused the loss of urban identity and the collective memory. Moreover, the rent pressures of local governments/politicians especially on the places close to the city center threaten the cultural heritage values. The building figurations/forms of industrial production areas pose an efficient city silhouette/ **visual landscape** and the loss of these places causes the industrial city image of Zonguldak to disappear. In this context, it is not possible to protect the cultural and social landscape in the city simultaneously or in separate ways.

In addition to the damage on the buildings, the inadequate production of coal in accordance with the procedures (with an accelerating impact with privatization) threatens the health of the workers and the public. Coal mines and facilities producing coal (thermal power plant, iron and steel, etc.) cause an increased air pollution in environmental terms. In addition, deaths and injuries due to explosions, collapses, occupational accidents in coal mines are among the negative effects.

Recommendations and Conclusion

The findings from this study can be used as indicators for the creation of integrated management plans in urban contexts especially with cultural landscape. Preserving industrial heri-

tage is an important aspect of future development as a **driving force for the study area**.

It is necessary to reveal the heritage values of the region with a detailed inventory study and to identify the dysfunctional buildings /areas with an integrated urban protection approach. To achieve sustainable development in the city, it is necessary to realize the right conservation strategy and area management.

A company must be established in partnership with public and private assets in Zonguldak to restore, maintain and promote industrial structures. In addition to buildings, forest areas should be protected in a holistic manner. These steps will also increase the tourism value of the region.

In order for countries to continue to utilize coal and its by-products, a systematic approach including solutions for certain disadvantageous situations is required. Risk reduction efforts and a policy used to protect the environment, the general public, and coal mine workers as much as possible should be discussed at an organizational and individual level, and laws should be developed. The coal industry in Zonguldak includes an important social dimension in addition to its economic dimension. To ensure the preservation of the cultural landscape that represents Zonguldak's urban identity, it is necessary to identify resources and risks, develop management plans, engage with local authorities through policy in order to promote sustainable development, and continue to improve and develop an understanding of the heritage.

It is stated that the possible environmental impacts arising from mining activities in our country and the measures and precautions to be taken are assessed within the framework of the "Environmental Impact Assessment" (EIA) process (Çeçen, 2014). In addition, "Regulation for Reclamation of Lands Degraded by Mining Activities" dated January 23, 2010, and numbered 27471, "Regulation on Implementation of Mining Activities" dated 6 November 2010, and numbered 27751, "Regulation on Control of Hazardous Wastes", dated 14.03.2005, and "Waste Management Regulation", dated April 2, 2015, numbered 29314 were introduced. In the last 20 years, although a legislatorial effort has been put on the ecological effects of coal mining and the damage it causes to nature and humans, it is apparent that they are insufficient as yet.

Within the scope of the study, environmental effects in the mining process are considered. The continuation of the operation of coal mines and lavatories indirectly increases the operation of coal power plants. However, in the verbal interviews we had with the officials working in Çatalağzı Lavatory in Zonguldak, we learned that only less than half of the coal of the recently established thermal power plants located nearby was supplied by Turkish Hard Coal Enterprises (TTK), and the remaining coal was supplied from abroad.

Some coal mines and coal-burning power plants are being shut down in the EU as burning coal does not comply with future objectives of low carbon emission (Şahin et al., 2016). What should be noted here is that instead of establishing new power plants, old power plants can be continued to use by reorganizing their wastes in a recyclable way that will reduce the damage to air and water, as seen in the examples abroad. Thus, a meaningful waste reduction policy would be pursued in the fight against climate change.

The primary goals should be to transfer the production technology, methods, architecture, functional unity of the past, the life styles of individuals and communities affected by these areas to future generations and to enable environmental-urban revitalization (Clark, 2013).

In re-functioning approaches, priority should be given to functions that may serve the common good. The cultural and social landscape data of the city should be modeled within the framework of a matrix, and the suitable volumetric spaces and open/semi-open spatial features of the places should be considered in these studies. Thus, the spatial needs in the city will be satisfied. The demographic characteristics of the city in recent years indicates that the number of university students has reached a significant level thanks to Zonguldak Bülent Ecevit University. This situation changes the user profile of the places and should be considered in specifying new functions. In the functionalization phase, the physical accessibility to the buildings is not sufficient alone. It is necessary to experience and understand these areas or production methods, even visually.

Visual landscape values should also be managed and landscape aesthetics should be conserved owned by industrial production areas.

Tourism is a potentially important catalyst for conserving historic fabric and initiating urban-scale conservation. The city is rich in variety and number of industrial facilities. This provides advantages to develop industrial tourism. In addition, tourism can be enriched by integrating potentials such as nature, sea and cultural tourism in the city with industrial tourism. Also, the coal basin here should be included in international industrial heritage routes.
The newly designed Mining Museum in Zonguldak contains models presenting the mining and its history. However, one of the inactive industrial areas should be arranged as **a living mining museum**. A safe environment should be provided in this area, and people should be given the opportunity to dis-

cover the coal mine units. This may enable **mass tourism and increase the number of tourists**.

It is important for Zonguldak to be included in the UNESCO World Heritage Candidate List as a cultural landscape/industrial landscape area in the future, in terms of receiving international recognition and protection support.

The reintroduction of industrial heritage areas, which have an important place in the social memory, to the city will revive the sense of belonging of the locals and will enable them to embrace the city.

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