

Perception of The Possible Post-Coal Period in Coal-Dependent Cities: Zonguldak Example in Turkey

Alkan ÜSTÜN¹, Bahattin CİZRELİ*

¹ Ankara Yıldırım Beyazıt University, Sociology Department, Ankara

Abstract: Due to the threats caused by fossil fuel consumption, developed European countries are searching for ways to coal phase-out. Although there are examples of strategic plans on the issue, it is necessary to carry out academic studies as well as efforts to increase social awareness. This research is a study conducted to describe and discuss how the relevant public opinion can be affected and prepared for an era without coal in Turkey where energy production is approximately 35% dependent on coal today.

The province of Zonguldak, which is economically and culturally dependent on coal mining in Turkey, has been chosen as an example. The research was conducted between January and August 2020. Adopting the sociological phenomenology research methods and techniques, 21 people from the non-governmental organizations of the city and official institutions were interviewed. The meanings, culture, and identity structures that coal and related sectors formed have been analyzed through the interviews.

Cities are seen as places where experiences turn into meanings and meanings into memory. In this context, discussing mining in Zonguldak is understood as questioning the meaning and memory of the city by Zonguldak residents. The people of Zonguldak still desire to protect the facilities based on the collective production logic and maintain their solidarity habits, despite the neoliberal policies that have been effective significantly after 1990. City residents long for the 20th-century development model based on the concept of the social welfare state. Another consequence of the adoption of this model is the continuing expectation that all initiatives about the future of Zonguldak are planned and implemented by the state. People of Zonguldak consider other economic areas (agriculture, trade, industry, etc.) as alternatives; however, they demand the continuity of a self-sufficient economy approach which coal mining located at the center.

As a result, it is seen that the people of Zonguldak have a meaningful relationship with coal mining. The residents of Zonguldak, without experiencing sustainable employment and development projects which alternative to coal, are skeptical about the future of the city. Despite the environmental damage caused by both mining and coal-based energy production in the city, studies aiming to raise awareness on these issues will be inconclusive. The projects that will be carried out by international organizations or national central government will create new cultural institutionalizations and a meaning system in the city, creating more comprehensive and direct new employment opportunities. Otherwise, activities that raise awareness about the damage caused by fossil fuels will not be supported by the public in coal-dependent cities and the funds spent would be wasted.

Keywords: Zonguldak, coal-dependent, post-coal period, coal phase-out.

1. Introduction

It can be stated that the phenomenon of climate change has emerged as a reality and concrete policies such as coal phase-out plans have begun to be implemented by a wide range of countries. The purpose of the research, which is shaped based on the prediction that coal exit practices will be brought to the agenda of Turkey in the near future, and how the study was carried out is explained in the introduction part. The section after the introduction focuses on how coal mining has built Zonguldak and its importance for the city. In the third section, findings obtained through 21 in-depth interviews are presented. Research findings provide an opportunity to understand the impact of coal mining on the

* Corresponding author: bahattincizreli@gmail.com

city's past, present, and future. The main themes that appeared in the interview texts are stated as *nostalgia*, the *dramatic approach to the present*, and the *coexistence of hope and anxiety for the future*. The analysis carried out in the light of these themes is included in the following section. In the analysis part, a relationship is established between the discourse of local actors and economic and social change. In the fifth and final section of the article, suggestions are proposed for Zonguldak city to be ready for a possible coal phase-out process.

The effects of fossil fuels and greenhouse gases that cause global warming have become increasingly apparent in the last fifty years (Giddens, 2009). Since 1970, the temperature of the earth has increased by 0.13 degrees Celsius in every decade on average. In line with this reality, the phenomenon of climate change is the subject of plenty of scientific research and many books are written on the issue (Giddens, 2009). Moreover, it has been aimed to develop global policies against this problem since the nineties. Examples include the United Nations Framework Convention on Climate Change adopted in 1992 and the Kyoto Protocol signed in 1997. At the United Nations Climate Change Conference held in 2015, the Paris Climate Agreement was accepted as an international agreement by nearly all countries of the world and came into effect in 2016. Today, the transformation of energy production policies based on fossil fuels, especially coal, is presented as the most concrete and realistic solution, and coal exit demands are expressed louder.

The relationship between the impact level of the COVID-19 pandemic and air pollution reveals the importance of non-coal alternatives. The UK has taken the closing date of two thermal power stations earlier, which is normally planned to close in 2025, due to the epidemic, and decided to close these plants in 2022 (BBC, 2021). Austria, Belgium, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Portugal, Slovakia, the Netherlands, and Sweden are continuing their coal phase-out plans. France, Finland, and the Netherlands have enacted these decisions.

It is predicted that the policies of European countries will occupy Turkey's agenda in the coming years. In line with this prediction, the main purpose of the study is to describe and discuss the preparedness of the cities that are economically and culturally dependent on coal mining in Turkey for the coal phase-out process and how they will be affected in the future. In the research, Zonguldak, one of the cities of the Western Black Sea Region of Turkey, was chosen as an example. As stated in the following sections, Zonguldak is a settlement area that coexisted with coal. Zonguldak, which has been shaped with coal economically, socially, and culturally, is in a meaningful relationship with coal mining today.

Due to the COVID-19 pandemic which had become prevalent after the research started, various restrictions were imposed in Turkey as of March 14, 2020 and an intercity travel ban was imposed. In the first months of the epidemic in Turkey, Zonguldak has been declared by the Ministry of Health as one of the cities where COVID-19 cases are most frequently detected. This situation came to the fore as the main factor limiting the research and disrupting it between April and June. Another limitation is that the city's official and civil stakeholders approached our research with suspicion and prejudice, as they have no plans other than coal mining.

2. Relevant Literature about Coal Mining in Turkey and Zonguldak

In terms of reserves and production amounts, Turkey is at a medium level in lignite and at a lower level in anthracite (TKİ, 2019). Turkey has 8,7% of the total world lignite reserves, about 3,6% of lignite and sub-bituminous coal reserves, and about 2,1% of the total world coal reserves including anthracite. On the other hand, while 92 % of coal mine resources in Turkey are lignite, 8% are anthracite reserves (TKİ, 2019). Turkey's largest anthracite reserves are located in Zonguldak Basin. According to the feasibility studies conducted in the Zonguldak region, the estimated anthracite reserve size was determined as 1,5 billion tons, and approximately half of this amount is extractable and processable (TTK, 2019).

The Turkish Hard Coal Institution carries out the coal extraction and processing activities in the Zonguldak basin as an official institution. According to the data of the Turkish Hard Coal Institution

(hereafter TTK) as of the end of 2019, there are a total of 7,947 people, 6,586 of whom work underground and 1,361 aboveground workers within the coal basins affiliated with the institution. Moreover, there are 1,303 civil servants in the Institution.

Hard coal (anthracite) was first discovered in Zonguldak in 1829 in Turkey and started to be extracted as of 1848. The management of the basin, which was previously under the British administration, passed to the Ottoman Empire in 1865. There were companies from different countries in the city between 1884-1903. In 1865, the Ottoman State transformed the mining directorate into a ministry and imposed the obligation to work in some villages of Zonguldak with the law enacted to meet the needed labor force (Güven, 2014). By 1910, the number of people working in coal mines reached 10.000. This employment was mostly undertaken by French companies.

The newly established Republic of Turkey declared Zonguldak as a province on April 1, 1924, when the economic life was vibrant in the region, which was under the rule of Kastamonu throughout the Ottoman rule. Ereğli and Bartın were districts of Zonguldak (Yüksel, 2014). While there was no residential area in the city center before coal mining is known as Zonguldak today. Additionally, businesses and infrastructure were established along with mining, and the city grew rapidly (Yüksel, 2014). The government of the Republic of Turkey, established in 1923, has implemented Turkification policies the economic enterprises in Zonguldak and increased the number of workers and production. In 1924, it was aimed to create an educated class in the field of mining by opening a "Higher Engineering School" in Zonguldak.

With the development of coal mining, the establishment of an iron and steel factory in Zonguldak's Karabük district in 1937 increased interest in the city. The aims of establishing an iron and steel factory in Karabük are to reduce the cost of transportation and to develop the relatively poor regions as well as to lay the foundations of national defense (Engin, 2004). As a result of the policies followed, the population of the city has gradually increased. While the population of the city in Zonguldak was 33.336 in 1927, it soared to 60.648 in 1940 and 123.094 in 1960. While one of the reasons for the increase in the urban population is the bringing of the villagers to the city to work in the mines, the other is the worker migration to the city.

There was a serious increase in employment created by the coal mine over time and from 1942 to 1950, hard coal production increased from 1.813.943 tons to 2.832.243 tons (TMMOB, 1992). In the same period, an increase was observed in the employment-related to the mines, and the number of mining workers reached 27,871 from 22,267 (TMMOB, 1992). Despite increasing employment and production rates, coal mines suffered financially in this period and it was aimed to increase production after 1950 in order to compensate for the loss. In 1960, production increased to 3.652.959 tons and employment to 39.602 (TMMOB, 1992). While the production increased to 4.638.721 tons in 1971, the total employment of workers and civil servants decreased to 37.189 (TMMOB, 1992). However, the financial problems of coal mines could not be prevented. The main reason for the continuing loss between 1961-1971 is that the wages of workers were increased after 1961 (Engin, 2004). Despite the continuous increase in the number of workers between 1972-1980, there was no significant increase in production and the miners often did not participate in production with the successive strike decisions.

While the production was 3.597.628 tons in 1980, the total employment was 43.440 people. The military coup that took place in Turkey on September 12, 1980 and the neoliberal economic policy decisions adopted afterward also affected Zonguldak. Between 1980-2000, the number of employees employed in the Turkish Hard Coal Institution (TTK) was gradually lessened. While 43.440 people were employed in 1980, in 2000 this number dropped to 21.133. In 1989, TTK launched the first private mining tender (Yılmaz, 2019). As a result of the policies pursued by the government, the strike of the miners, which is known as the "Great Miners' Walk" in Turkish history, took place on January 4-5, 1991. As a result of the discourse adopted by the government of the time, the identity of the "producing miner" was replaced by the phrase "the miner is the hump of the state" (Yılmaz, 2019). With the shrinking role of the state in the economic field, the total effect of the private sector on coal production increased

between 2000 and 2013 (Yüksel, 2014). As of 2018, the Turkish Hard Coal Institution has mining operation agreements with 13 different private companies (Yılmaz, 2019).

Policies regarding coal mining directly affected the demographic structure of the city. While the population of Zonguldak was 276.990 in 1927, it increased to 569.059 in 1960 and 1.044.945 in 1985. In 1991 and 1995, the population of the city decreased to 615.599 in 2000 with the decision to separate Bartın and Karabük districts from Zonguldak and transformed them into separate provinces. The population of Zonguldak in 2019 was 599.698. According to the data from the Development Bank of Turkey, Zonguldak was among the ten provinces with the highest population in Turkey in 1970 and 1980, while it was among the top ten provinces with the highest immigration between 1980-1985 and 1995-2000 (Kocaman, 2008).

Due to the shrinkage of employment areas in Zonguldak, the labor force is leaving the city and the number of elderly people in the city is gradually increasing. While the proportion of the population aged 65 and over in Zonguldak was 8,2% in 2013, this rate increased to 11,4% in 2017. This situation causes Zonguldak to be known as a "city of retirees". According to the research conducted by Zonguldak Bülent Ecevit University in 2014, 53,7% of the parents in Zonguldak prefer their children to work in another city, while 52,8% think that Zonguldak cannot adequately meet the needs of their families (Vergil et al, 2014). Only 37,4% of the participants stated that they do not think of leaving Zonguldak. 38,6% of those who intend to migrate say that they can keep living in the city when the unemployment problem is solved, and 15,9% when the air pollution problem is solved. Analyzing the findings, the researchers identified a 62% migration tendency in the city. On the other hand, interestingly, 81,9% of the participants state that they like Zonguldak (Vergil et al. 2014).

Despite their liking for the city, the reason residents tend to leave the city is due to the increasing unemployment because of the decline in coal production. Another important reason is the air pollution created by thermal power stations that continue to produce energy with imported coal. The symbols of coal mines and mining are very strong in the cultural life of Zonguldak despite the inability of coal mining to meet the needs of the city and the environmental damage it causes. The city of Zonguldak has been named as "black gold", "black diamond" and "the capital of labor" in different periods due to the coal mine (Engin, 2004). The most important symbols of the city are the Miners' Statue, the Mining Martyrs Monument, and the Mining Museum. The influence of mining can also be seen intensely in literary works on Zonguldak. The main reason for this is Zonguldak's past. Because whatever was done in the city until the 1990s were built with coal and the city almost existed with coal (Engin, 2004; Yüksel, 2014).

3. Methodology

The prominent measure to reduce the pace of global climate change is to reduce carbon emissions. For this reason, a future where fossil fuels are used less awaits all of us, as targeted by various international agreements. In this direction, as one of the cities that are socially and culturally dependent on coal mining, Zonguldak is the focus of the research. The main problem of the research is how the city of Zonguldak will be affected in case of a possible coal phase-out. In other words, it was aimed to understand what Zonguldak city looks like without coal. In addition, understanding of the relationship between the people of Zonguldak and coal mining is among the aims of the research. On the other hand, it is aimed to understand what coal mining means for Zonguldak's past, present and future. In this regard, the research is the first academic study conducted in Turkey on the subject. The lack of sufficient literature on the subject necessitated qualitatively oriented research focusing on understanding. Since the aim of the study is to describe the meaningful relationship the city has established with coal mining and to understand how the official and civil representatives of the city approach the situation after a possible coal exit, the sociological phenomenology approach was used. In-depth interviews with the participants and the final workshop in the form of focus group discussions are the main data sources of the research. In 2020, 21 people were interviewed face-to-face in February and March, and online and focus group meetings on July. Requests of the interviewees who did not prefer to state their names and

institutions accepted due to the right to privacy were implemented. In the scientific analysis process, the codes that the interviewees repeat were determined first. As a result of the compilation and bundling of these codes, themes were revealed and the themes reached formed the basis for the final analysis.

4. Research Findings

In this part of the study, the findings of 21 interviews conducted within the scope of the research are presented. In the interviews carried out through the semi-structured interview form, a rich variety from stakeholders in the city of Zonguldak was tried to be created. These include the mayor of the district, representatives of official institutions related to coal mining, trade union representatives in the mining sector, academics working at the university in the city, administrators of the engineer chambers, members of the press working in the newspapers in the city, members of the city council, members of non-governmental organizations in the city and city historians.

Interviewees were asked about their opinions about the past, present, and future of the city in line with the purposes of the research. The answers received include the opinions and views of the participants on the past, current situation, and near-future of the city. During and after the interviews, in accordance with the data evaluation logic of the qualitative research, the codes that the participants frequently repeat within the opinions expressed were determined. The themes were reached by combining the codes and the themes revealed which formed the basis for the final analysis. Similarities and repetitions within the collected data set enabled them to be reached. Increasing the level of abstraction in the last analysis phase after this stage has been made possible as a result of taking into account the local, regional and global phenomena belonging to the relevant historical periods. In the following pages, the three main themes that emerged as a result of the interview data with the participants were presented in order.

Nostalgia

Almost all the interviewees emphasized that Zonguldak coexisted with coal and that the city could not have been established without hard coal reserves. In the words of an expert working on the developmental institution of the region, "first underground of the city found, then the surface came into existence". Because although lignite is widely mined throughout Turkey, anthracite is only found in this region. TTK General Manager Kazım Eroğlu stated that the basis of the industry is coal and that Zonguldak is the basis for the Turkish industry. This situation led to the emergence of some cultural and social firsts in the city of Zonguldak. For example, as city historian Yüksel Yıldırım has stated, innovations such as the first tennis court in Turkey (1910) was opened in the city.

Contemporary Journalists Association Zonguldak representative Ali Ayaroğlu emphasized that the newly established Republic of Turkey saw mining and energy as the basis of development, and therefore Zonguldak was the first city declared as a province by the Grand National Assembly of Turkey on April 1, 1924. Journalist Ayaroğlu also stated that in the same year (1924), Zonguldak High Engineer School of Mining was established and engineers needed in mining activities began to be trained. According to the claim of Çatalağzı Mayor Adnan Akgün, the first worker registered with the Social Insurance Institution in Turkey is in Zonguldak. As city historian Yüksel Yıldırım emphasized, Çelikel High School, Turkey's first private high school, was opened in the city in 1938.

As stated by Technical Manager Nizamettin Tiryaki from the General Mine Workers Union (hereafter GMIS), the production made by foreign investors in the early stages became public with the nationalization of all production facilities in 1940. Since the geological structure of the mines in Zonguldak is fractured, it is not suitable for mechanization. For this reason, production was labor-intensive in the early periods. During *the Obligation* period, which was implemented between 1940-1947, the required labor force was obtained through the participation of men aged between 18-50 years in forced labor from the villages located in the nearby region. Local journalist Bahaddin Arı stated that the villagers stayed in the city for thirty days and in their villages for thirty days with the *grouped labor system* applied in this period. The villagers stayed in workers' dormitories called *pavilions* during the thirty days they came to the city for mining. In the same period, the city experienced an intense

immigration intake. Those who came to the city from the surrounding villages and migrant workers lived together. Working together in the underground mines (the necessity of developing cooperation to ensure the safety underground) has created an atmosphere of unity on the surface as well. Journalist Arı thinks that this situation contributes to the development of democratic culture in the city. According to Arı, as coal production increases in Zonguldak, democracy and tolerance increase; As production decreases, democratic culture leaves its place to monist opinion.

From the 1950s to the 1970s, mining became attractive with improved working conditions and incentives. As Berran Aydan from the Zonguldak Branch of the Turkish Foundation for Combating Soil Erosion (hereafter TEMA) conveys, social opportunities and facilities have increased in this period and Zonguldak has become a laboratory of the welfare state. Markets and schools were established depending on the coal mining institutions. In addition to these, cinemas and clubs have colored social life. Journalist Ali Ayaroğlu stated that Zonguldak of that period was almost a European city and had a developed and modern socio-cultural structure for its time. Social facilities such as theatres, tennis courts, swimming pools, and low crime rates formed the outer face of the city. Since it was one of the important centers of the country's industry at that time, the city became famous as "Turkey's Germany" in the words of Çağlar Öztürk, Head of the Zonguldak Branch of the Chamber of Mining Engineers.

In the past Zonguldak is a city that social welfare practices are prominently implemented. In the words of TTK's occupational safety expert engineer Kâmil Şenol, with its name before 1983 was Ereğli Coal Enterprises (hereafter EKİ), with its new name TTK (Turkish Hard Coal Institution); until the 1990s met the infrastructure needs of the city such as road construction, road maintenance, construction equipment needs, electricity, water, etc. In addition to these, lodgings for the workers were built. TTK provided basic needs such as shelter, food, clothing, and transportation to the people of Zonguldak. As an expert on the development of the city emphasized, EKİ and TTK were everything of Zonguldak at that time, and these institutions were extremely valuable economically, socially, and culturally for Zonguldak residents. More than 150.000 people, including families, made a living from mining at that time. There are many families that have been mining for three generations. In the words of Kâmil Şenol, TTK was meant Zonguldak. Thanks to the mining, the city lived its golden ages in that period.

Starting from the mid-1980s, things were starting to change in Zonguldak and both the number of workers and the anthracite production capacities of the TTK began to diminish. As the trade unionist Nizamettin Tiryaki from GMIS emphasized, the number of mineworkers, which reached its peak with 45.000 workers in the eighties, started to decrease rapidly in the nineties. Mandatory and early retirement implementations also played role in this decrease. The decline in the global price of coal and the rise of electricity and electronics also adversely affected mining activities. Therefore, the city could not sustain its former vividness. Bartın and Karabük which were previously districts of Zonguldak, became separate provinces in 1991 in 1995, and the city weakened in terms of both population and economy. The city has evolved from a place that receives immigrants to a situation that gives immigration. According to Kâmil Şenol from TTK, mining privatizations in the 1990s brought along illegal quarries and a precarious working environment.

The Dramatic Approach to Today

Çatalağzı Mayor Adnan Akgün states that anthracite mining is the locomotive sector of the city and the decline in this has negatively affected the entire city. Despite the high number of workers since the nineties, the inability of state-owned mines to make a profit has led to the belief that TTK is a "hump" on the back of the state. This belief also paved the way for the privatization of anthracite mines. Today, coal production has decreased significantly and TTK is like "a wingless bird and cannot fly" without a coke coal plant and lavatory (coal washing facility), as journalist Bahaddin Arı underlined. Hard coal cannot be processed without a coking plant and a lavatory. This situation affects not only the economy but also the environment and air quality negatively. According to Arı, with the decrease in anthracite production, the sense of unity and solidarity in the city was damaged and the democratic culture weakened. The low level of production also negatively affected democracy. Occupational structures

have changed; insecure and flexible jobs such as cashier, security staff, cleaner have started to become widespread in the city.

Despite the decrease in coal production, approximately one-fifth of the amount of anthracite needed by the iron and steel industry in Turkey is domestic supply, and all of this is obtained from the Zonguldak Basin. Claiming that the only type of coal that can be used in the iron and steel industry is anthracite due to its coking feature, TTK General Manager Kazım Eroğlu says that the need for anthracite will not decrease. For this reason, Eroğlu states that anthracite is a strategic resource.

In the words of Erdoğan Kaymakçı, an academician from the Mining Engineering Department of Zonguldak Bülent Ecevit University (hereafter BEUN), anthracite is indispensable for both Zonguldak and Turkey, and in this context, coal production should be increased. According to Kaymakçı, although the city seems to be abandoned when compared to its former glorious days, Zonguldak may return to its former prosperous days with the increase in coal production. Kaymakçı claims that in the past Zonguldak was a city that produces more than it consumes, and its industry was in a prominent position in the country. However, the city is currently disconnected from production and is in a position of consumerism Kaymakçı stated.

Erdoğan Kaymakçı, who was also a participant in the workshop held after face-to-face interviews, tried to strengthen his basic theses with new arguments. According to Kaymakçı, the reason why Turkey imports coal for energy today is the emptying of near-surface coal reserves in Zonguldak and the increase in coal extraction costs. However, according to him, a similar situation will occur in countries where coal is imported over time, and when the cost of imported coal and the costs of coal extraction in Zonguldak are equalized, imports will be abandoned. Levent Yağcıoğlu, a board member of the Association of Mining Engineers, who conveyed his views at the workshop, also asserted that coal mining is indispensable for Zonguldak. Yağcıoğlu stated that the policies of privatization of mines and the adaptation of mining to the international market negatively affected mining to a great extent. However, he stated that with the new laws enacted, the mines will be completely privatized. Yağcıoğlu argues that anthracite is needed in the steelmaking process and that Turkey should not give up its Zonguldak anthracite mines in accordance with national policies.

Nizamettin Tiryaki from GMIS emphasizes the decline of mining activities in the city and claims that today there are occupational and worker safety problems in Zonguldak with increasing privatizations, leasing system, and illegal mining. For this reason, he stated that fatal accidents occurred not in state-owned mines, but in private mining enterprises. Additionally, he stated that because of the increasing unemployment rate in the city, people prefer to work in mines of private companies, even though it is risky. He emphasized that the idea of “death in the underground is a possibility, but hunger is absolute above ground” is prevalent among the locals. He states that one mineworker provides employment for thirteen more people above ground, Tiryaki stated that the city's economy has shrunk significantly as the number of workers in the mining sector has decreased. For this reason, he argues that the number of workers, employment rate, and coal production should be increased for the development of the city. According to him, the weakening of the coal economy in the city affects social life adversely.

Kâmil Şenol from TTK emphasizes that there are only two cinemas in the city today and they are in two shopping malls of the city where there used to be eight cinemas in the past. According to him, with the decrease in production, the transition from collective life to individual life occurred and social solidarity diminished. As an example of this situation, Şenol claimed that while collective production was carried out in the villages of Zonguldak in the past, now casual workers are hired. City historian Yüksel Yıldırım reminds that Zonguldak, which was a city that used to receive immigration, has been giving immigration since the 2000s. Zonguldak has become a city where the number of retirees is higher than the number of employees.

Journalist Ali Ayaroğlu stated that Zonguldak used to be like a racehorse, but now it has turned into a milkman's horse; he stated that the number of workers has decreased, industrial facilities have been closed one by one and unemployment has soared. Stating that day-to-day policies, useless projects,

and lack of planning have exacerbated the city life of Zonguldak, Ayaroğlu underlines that new business areas have not been created in the city. Berran Aydan from TEMA describes today's Zonguldak as a neglected, shrinking, polluted city compared to the past, and she asserts that the thermal power stations in the region pollute the air and nature. In addition to the air, the power stations also pollute the sea with the water they use in the production process and discharge back into the sea. In Aydan's words, cancer and respiratory diseases are relatively salient in the city. According to Aydan's claim, considering that the people of Zonguldak are already accustomed to environmental pollution due to the anthracite mines, the city has been declared as an energy base, and new units have been installed in the thermal power stations and their capacities have been increased considerably. Thus, these situations have adversely affected the city in terms of environment.

The Coexistence of Hope and Anxiety for the Future

In the words of Çatalağzı Mayor Adnan Akgün, air pollution rates are high in the city, and this is because thermal power stations do not perform proper filtration. According to Akgün, "The state cannot think commercially, it has to consider social welfare". According to him, coal is a strategic resource for the country, even if it causes financial harm, the state should support mining. "Under Zonguldak there is another Zonguldak that perhaps twice the size of the above-ground." What Akgün wants to express here is that there is considerable potential for mining tourism. He thinks that mining tourism would attract great attention in Zonguldak, as is the case in Manchester. Akgün claims that nature tourism can only be an option if thermal power stations are closed and argues that "tourists do not come to the place where the chimney is".

City historian Yüksel Yıldırım thinks that due to the rugged geography of the city, there is not enough physical space for industry and factories, and therefore mining is indispensable. Similarly, the president of Zonguldak Journalists Association Derya Akbıyık stated that coal mining should never end in Zonguldak and a coal-free Zonguldak cannot be imagined. Nizamettin Tiryaki from GMIS also predicts that the city cannot be without coal and that the possible coal exit process will turn the city into a "ghost town". According to him, without coal, the city will be empty because people have no real option other than mining. Tiryaki is also not hopeful about "the Filyos Project", which could turn the city into a significant commercial port.

Journalist Bahaddin Arı stated that there have been continuous projects in the city for the last two decades, but they have not been implemented realistically. According to him, hope is produced and sold by these projects. Even if a plan and a program are made, there is no development towards concrete production. According to Arı's claim, the projects have been used to earn money. Although Bahaddin Arı thinks that fishing, marine tourism, and forestry activities can be improved, he believes that these options remain on a project-by-project basis. Kâmil Şenol, an engineer who specializes in occupational safety from TTK, emphasized that without coal, the city will become a retirement city. Şenol thinks that the following areas may come to the forefront in the possible coal exit period: lumbering, wood industry, papermaking, furniture manufacturing industry, and hard-shell forest fruit growing. Şenol thinks that the shipbuilding industry should also be supported.

According to TTK General Manager Kazım Eroğlu, tourism will not be able to make a great economic contribution to Zonguldak, even if it brings aesthetics to the city. Eroğlu states that the sea vacation season is only two months due to the climate of the region. According to Eroğlu, hard coal (due to its coking feature) is indispensable for the iron and steel industry and a developed country cannot be imagined without steel. The General Manager of TTK stated that developed countries keep their knowledge of mining engineering and shift production to other countries. Eroğlu argues that mining and its related sectors should continue to grow stronger in Zonguldak. Academic Erdoğan Kaymakçı similarly underlines that there is no serious alternative for the city other than coal. Although agriculture and livestock are proposed, he states that they are not capable of replacing hard coal. According to Kaymakçı, developing countries are trying to increase their coal production. On the other hand, he asserted that it is calculated there are approximately two hundred years of coal reserves globally (with today's production and consumption rates). According to him, energy-dependent and consumption-

oriented policies should be abandoned, and thus the Zonguldak can get back to its glorious era thanks to its power from production.

Çağlar Öztürk, Chairman of the Zonguldak Chamber of Mining Engineers, states that there is at least a hundred-year-old hard coal reserve in the city, and if necessary, it is possible to go deeper than the current level in the mines. According to Öztürk, although almost every village has livestock, these are productions made for the villagers' own needs and the marketing purpose is not prominent. He stated that fishing and livestock can be supported in the out-of-center districts of Zonguldak. Journalist Ali Ayaroğlu claims that if the coal exit process becomes a reality in the city, the city will almost turn into Chernobyl and even in the current situation; Zonguldak has the appearance of "a large village". Although it is considered as an alternative, he also underlines that livestock cannot be enough to run the economy of the city.

Only environmentalists in the city put forward the idea that coal mining should not continue in the city. TEMA manager Berran Aydan places tourism first among the alternatives that may emerge in the post-coal era for Zonguldak. Aydan states that she is against considering Zonguldak only with sectors that create pollution such as thermal energy, heavy industry, and cement. Apart from these sectors, tourism, agriculture, higher education, and forestry activities can be developed. According to her, the missing point in Zonguldak is searching for alternatives. Thinking that coal is the only way drives authorities and residents to a kind of laziness, and stagnancy. Gülden Işık, who participated in the workshop on behalf of TEMA, suggests that thermal power stations should be taken out of the city to create a tourism alternative. According to Işık, although they live in a seaside city, they can no longer swim in the sea due to increased pollution. She states that thermal power stations harm agriculture as well as tourism. Işık argues that the power plants are built on agricultural lands and thinks that migration can be prevented if agricultural opportunities are offered to the villagers. Nuray Gencalp, president of Zonguldak City Council Women's Assembly, underlines the cancer cases in Zonguldak to draw attention to the destruction caused by mining and thermal power stations. Gencalp stated that there are seven cases of cancer in the apartment where she lives. Gencalp reminds us that one of the few pediatric oncology departments in Turkey is in Zonguldak.

Sociologist Evrim Yılmaz, who conducted her Ph.D. thesis on miners in Zonguldak, claims that mining is not indispensable for the people of Zonguldak. According to Yılmaz, who has addressed the issue from a sociological point of view, Zonguldak people would adapt coal exit when alternative economic resources are produced. Yılmaz, a sociologist who interviewed workers from three different mining areas (illegal, subcontracted, and state-owned) in her research, says that dependence on mining cannot be considered cultural.

The development expert we interviewed, who preferred not to state his name, is in favor of considering the issue both economically and culturally. According to him, since the mine is not an inexhaustible resource, the city must produce alternatives. He emphasizes the need to develop an entrepreneurship culture and increase sectoral diversity in the city. He mentions areas such as hydroponic modern greenhouses, buffalo farming, and sea snail production as alternatives that can be supported to increase sectoral diversity. Apart from these options, the development expert claimed that with the launch of the Filyos Project, about 70% of which has been completed, a logistics base is planned to be established in Çaycuma district and a cluster of mining machinery industry in Zonguldak. Stating that there are three alternatives in the city for younger generations, the expert lists these as being unemployed, emigrating, or searching for alternatives for the future. Urban residents aged 40 and over, state that even if they cannot see a future without mining, young people demand options other than mining. According to the development expert, although the locals earned everything with coal in the past, if alternatives are not created, there is a possibility that the city could become a "big village" in the future.

5. Discussion

Zonguldak is a city with an identity, and it was state-run coal mining that established the basis for the formation of this identity. Born before 1990, Zonguldak residents experienced the practice of modernization based on the concept of the social welfare state of the 1960s and the economic and cultural institutionalization inherited from this practice. For this reason, Zonguldak people born before 1990 call the city they live in the "capital of labor" about heavy industry-based development approach. However, after 1990, a new modernization paradigm began to prevail in the city, where flexible production relations and consumer culture were the main sights. The city's older inhabitants did not adopt this new paradigm, also called globalization. Due to the city's long history, today's Zonguldak residents have a meaningful cultural relationship with coal mining. Coal is not just a source of livelihood for Zonguldak; it has given meaning and identity to the city.

In the past, the planning of economic and cultural life by the state led to the city having a political discourse that demands from the state. When asked about their visions for the future, the interviewees assert that the state authority is the main actor that will stimulate economic and cultural life. This dominant discourse causes skepticism towards proposals based on individual entrepreneurship and free-market understanding. Additionally, residents expect the General Union of Mineworkers (GMIS), the biggest trade union in the city, to be more active. The expectations from official institutions and mass organizations that formed in the 20th century show that Zonguldak people have adopted a planned development approach based on collective organization instead of the market approach based on individual entrepreneurship.

Zonguldak residents evaluate employment created by coal mining and thermal power stations positively. On the other hand, air pollution caused by thermal power stations affects public health negatively. Moreover, air and sea pollution ecologically threaten the habitats of other creatures. City residents are also aware of this pollution and the damage it causes. In this context, a contradiction emerges between the city's demand for economic development and the desire for a cleaner environment. For example, one of the city's district municipalities advocates thermal power stations that do not have proper filtration to close, while another district municipality thinks that this closure will affect the economy adversely. It seems that the way for Zonguldak people to overcome this contradiction is by adopting the sustainable development model. At the root of this contradiction lies in the dominance of the development approach based on heavy industry among the residents of the city.

Today's coal mining is not capable of responding to the needs of the Zonguldak population. Moreover, mining production costs are increasing and competition with global markets is getting more difficult. However, for Zonguldak, coal mining appears as a strategic economic activity due to both its reserves and the needs of the iron and steel industry. In addition, Zonguldak residents demand that mining continued state-supported due to the social welfare it creates, even though coal production costs increase. Investment in agriculture and livestock, as well as tourism and other industrial areas, is accepted by Zonguldak people in an environment where mining is still the locomotive sector. Considering both the needs of the iron and steel industry and the meaningful cultural relationship that the residents have with coal mining, it may be a good decision to maintain coal mining at a low level. Moreover, as some participants have stated, it is strategic to plan in this direction to protect the practical conditions and technical knowledge of coal mining, due to national interests in times of possible global crisis.

The available transportation facilities allow Zonguldak to interact commercially with a population of more than 20 million, especially in Turkey's two largest cities, Istanbul, and Ankara. Therefore, the city has a wide market for agricultural and industrial products and a potential for tourism. An outward-looking economic and cultural perspective integrated with the interaction area of these two major cities needs to be adopted. Nevertheless, the older residents who are loyal to the city's memory support a self-sufficient and introverted economic perspective in which Zonguldak is in the center. Considering that the inhabitants of the city are far from the market economy approach where individual entrepreneurship is essential and closer to the collective working approach in which the public is

involved, it is foreseeable that the cooperative model can be organized quickly, especially in the field of agriculture. Moreover, there are already good examples in this sector in Zonguldak. With a large-budget project involving vocational educational programs, micro-loans, and pilot implementations, or organizing cooperatives by civil society, Zonguldak residents can adopt alternative sectors other than coal mining. The products that will be produced in the city by the cooperatives might be transferred to the markets of the big cities by using the existing transportation facilities.

In all the interviews, it was shared with the participants that coal-free energy and economic policies are being implemented in European countries. In line with the answers received, it can be clearly stated that Zonguldak people are unprepared for a future without coal. However, the annual United Nations Climate Summits, the Paris Climate Agreement which was approved by almost all countries of the world, and the reports of many financial institutions include plans for coal phase-out. In this context, it is seen that a radical change is taking place in the new development approach. For all these reasons, it is necessary to produce plans for the changing situation for the future of the Zonguldak people and to be prepared for a possible coal exit process.

6. Conclusion

The official authorities about energy production aim to increase coal-related energy production in Turkey. First, utilization of all national mineral resources is considered among the objectives of recent governments. However, coal imports are ascending because coal production cannot meet the current need. It is not difficult to foresee that this situation will exacerbate Turkey's import dependency to meet its energy demand and environmental pollution. Although some non-governmental organizations and local authorities try to raise awareness about the issue, they do not have an alternative future projection about increasing fossil fuel consumption, especially for energy production.

This research, in which the province of Zonguldak is taken as an example, is aimed to describe the current perceptions of the city's non-governmental organizations and official institution representatives about a possible future without coal. It is seen that Zonguldak people have established a meaningful cultural and mental relationship with coal mining, which is the dynamo sector of the city, for over a hundred years. For this reason, they cannot imagine a Zonguldak without coal mining. In this context, awareness studies carried out on the destruction of coal mining on nature and human life do not show the expected effect on residents of Zonguldak. Because coal mining is not only a livelihood for the people of Zonguldak; it is the phenomenon that brought this city into existence and gives it its meaning. The possibility and realization of a coal-free Zonguldak must first be shown to the residents through pilot studies.

Unless there are alternative economic and cultural institutionalizations to the main sector in a city, fundamental changes in the current socio-cultural structure should not be expected. In the Zonguldak example, the transformation of a mining city is only possible with comprehensive projects that can change the present perception. In this context, what is needed in the city is a cultural and mental transformation. Policy-based approaches that neglected the cultural structure will not be able to fully understand the present reality of the city. Large-budget and long-term projects that can be carried out by international organizations, government, or civil society and involving experts from different disciplines and fields can turn Zonguldak into an exemplary coal phase-out city.

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