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## The Deep-Sea Discharge Project and the Failure of Environmental Conservation in the Ergene Basin, Turkey

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**ABSTRACT:** The success of environmental conservation programmes depends partly on governance mechanisms. Top-down governance can hinder participation and thus increase the likelihood that programmes will fail. In this paper, we argue that there is a strong link between the failure of environmental conservation in the Ergene Basin and Turkey's centralised, top-down environmental governance. Focusing on environmental planning processes, we discuss the conservation efforts aimed at remedying intense pollution, the reactions to ongoing environmental degradation, and the programmes that were designed to control pollution. To understand the main causes of the environmental conservation failure, we investigated the pollution control efforts of both local professionals and the central authorities. We analysed the environmental planning process, which emphasised regional sustainable development, and we examined the action plan for pollution control that was designed by the central authority and included the partial implementation of a flagship Deep-Sea Discharge project. We found that – in neoliberal Turkey where environmental issues are deprioritised – there had been a deliberate shift in power from local to central authorities. We suggest that this shift had hindered comprehensive participation in planning and thus had played a crucial role in the failure of environmental conservation in the Ergene Basin.

**KEYWORDS:** Water governance, environmental conservation failure, democratic participation, environmental planning, Ergene River, Turkey

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### INTRODUCTION

Environmental degradation often proceeds in parallel with economic development, especially in less-developed countries. In the neoliberal era, where states regulate markets to ensure profits, industrial development has resulted in the exploitation of nature and in environmental degradation in the form of pollution and waste (Bryant and Bailey, 1997: 55-56; McCarthy, 2004; Bakker, 2010; Fan et al., 2019). In the absence of environmental regulations and sanctioning of harmful activities in economically underdeveloped zones, polluting industries move from the centres of cities to their peripheries, where they cause intense pollution and overexploitation of natural resources (Hönke et al., 2008). Suffering this pattern of development, developing countries have experienced tension between a desire for economic growth and the need for environmental conservation (Büscher and Dressler, 2007; Orhan and Scheumann, 2011; Alvarado and Toledo, 2017). This tension is also reflected in the governance of water, which is an essential natural resource that is indispensable for both life and socio-economic growth (Babuna et al., 2023). As neoliberalism transforms all natural resources and services into commodities, the significance of effective water governance is amplified by challenges pertaining to water accessibility and the right to water.

In neoliberalism, solutions to environmental problems are typically sought through mechanisms that are outside direct state intervention. Governance in the neoliberal era envisages widespread and diversified dissemination of methods to encourage participation at local and subregional levels (McCarthy and Prudham, 2004; Himley, 2008). Increasing the role of civil society and markets is expected to promote both democratic decentralisation and environmental conservation; however, "degrading nature for profit" is still inevitable when control over markets is abandoned in favour of capital accumulation (McCarthy, 2004; Castree, 2008). When market profit is prioritised, the conflict between environment and economic growth often leads to a loosening of environmental regulations and lax enforcement (Paavola, 2007; Benson and Jordan, 2015). The result is intense and enduring air and water pollution, deforestation, and natural resource degradation.

The Ergene River Basin, comprising fertile agricultural lands in northwest Turkey (Ministry of Environment and Forestry, 2010; Kahraman and Özkul, 2018; Eroglu et al., 2019) is a case of environmental conservation failure. Industrial concentration in the region commenced in the 1980s, the decade that marked the advent of neoliberal Turkey (Göçek, 2017: 11-13). Dirty industries were relocated from Istanbul to the Ergene Basin in order to benefit from the abundant land and water resources of the Basin and take advantage of its connections to major consumption hubs in Turkey and abroad. Soon after, in the absence of pollution prevention measures, the Basin started to face high levels of water pollution and decreasing groundwater (Aysu, 2010a: 399; İnci, 2011). Local and national responses emerged in the 1990s, initially organised as symposia and social forums of local professionals and occupational groups (İnci, 2010c). The mass protest in 1997 has been a significant milestone in the movement to face the Ergene's environmental problems, at the same time putting the issue on the national agenda (*Milliyet*, 1998). In the aftermath of the mass demonstration, the protection efforts of the local occupational groups intensified. Trakya University (in Edirne Province in Ergene) initiated regional environmental planning that took a holistic approach towards sustainable development. It began to collaborate with various organisations including trade associations, the bar association, municipalities, NGOs, trade unions and the local citizenry. Their efforts were blocked by the national government, however, because their plan restricted geographical expansion of the manufacturing industry to designated land zones. Starting in the 2010s, in parallel with the modified plans, the Ministry of Forestry and Water Affairs launched new projects that promised a solution to the extensive river pollution. The project dubbed *Operation Dawn* included elements of Reclamation Organised Industrial Zones (ROIzs) and the Deep-Sea Discharge (DSD) project (Ministry of Agriculture and Forestry, 2020), both of which are explained in this paper's case description. *Operation Dawn* – particularly the DSD project – created controversy. Experts and NGOs that were involved in the Ergene issue were concerned about the fragility of the already-polluted Sea of Marmara, which is enclosed by the Thrace and Anatolian peninsulas and drains from north to south through the Bosphorus and Dardanelles Straits (Union of Turkish Bar Associations, 2015; Artüz et al., 2018). According to reports by the Chamber of Environmental Engineers, the unusual mucilage formation in June 2021 (caused by a phytoplankton bloom) was induced by a pollution load that had been created by factories and cities around the Sea of Marmara that were discharging their wastewaters without meeting appropriate treatment standards; the DSD was one of them (TMMOB ÇMO, 2021).

This paper reports on our efforts to understand the role of water governance and environmental planning in the steady rise of pollution in the Ergene Basin, particularly in the first decade of the 2000s. We try, more specifically, to account for the persistence of the polluting activities of a large industrial base despite considerable media attention; mobilisation under local occupational groups such as universities, trade associations, bar associations and NGOs; and the apparent governmental focus on Thrace and Ergene by the 2000s. Pollution of the Ergene Basin has continued unabated in a country that has a sufficient knowledge base and technical capacity, where there is water legislation tied to the National Water Law, where efforts have been made to align with the European Water Framework Directive (WFD), and where there is a tradition of decentralised governance and democratic participation. To account for the persistence of polluting activities, we begin by examining the environmental planning

processes that were undertaken at the local and regional levels to protect the Ergene Basin; we go on to observe how this discourse on sustainable development was hijacked by the central government in Ankara. We identify the conditions that enabled this shift from sustainable development to unconditional economic growth, noting how it yielded only insufficient technical interventions aimed at symptoms rather than addressing the causes of the large-scale environmental protection issue. These conditions are framed within the broad neoliberal economic growth mindset of the central government, which dismisses or undervalues nature as a resource. This mindset is manifested in clientelism favouring rent seeking industrial groups, discouragement of professional advice hence knowledge-based policy making, and creation of a new industrial labour dependent on livelihoods that they can only secure by their wages from polluting industries.

Our field visits to Ergene started as early as 2017, and by 2019 had evolved into a research programme. To help us answer the above questions, we did desk research on Ergene River pollution and public reactions, and on environmental and action plans; we utilised a wide range of grey literature, as well as written and visual media documents. Between 2019 and 2022, we conducted semi-structured in-depth interviews with 29 participants, including engineers, academicians, village headmen, state and municipal officials, activists and NGO representatives in the region. The respondents were first selected through a snowballing technique (Parker et al., 2019). The participant network was later expanded as we specifically targeted respondents who took part in planning processes (see the Appendix for an anonymous list of participants). Rather than prematurely reaching conclusions, we followed the exploratory research method to facilitate an enhanced comprehension of the underlying issues (Mbaka and Isiramen, 2021). The interviews were transcribed and participants were assured of confidentiality. The interview guide focused on the perceptions of pollution, its causes, and the action taken against it. With those who were directly affected or had been part of actions, the interview shifted from perceptions to experiences.

The paper is organised as follows: it first presents a theoretical framework that discusses the literature on environmental governance and power relations and then goes on to outline how water governance in Turkey has impacted the Ergene issue. The next section describes the study area. It introduces the Ergene Basin and its socio-economic features, details the evolution of the pollution problems, and describes the efforts to combat them. The results section focuses on the controversies around the planning and carrying out of *Operation Dawn*. We then discuss the degree to which the failure of environmental conservation in the Ergene Basin can be attributed to the role played by clientelist business formation in neoliberal Turkey, occupational groups affiliated with democratic society, and disempowered communities. The paper concludes by highlighting the contributions of this work to the literature on conservation failure and offering suggestions for future research.

## **THEORETICAL FRAMEWORK**

### **Environmental governance and power relations**

The emergence of environmental governance is driven by persistent environmental issues. Environmental governance encompasses the diverse regulatory procedures, decision-making mechanisms, and organisations through which political actors exert influence on environmental actions (Lemos and Agrawal, 2006: 31). The political actors consist of states, private businesses and communities; they include ministries, municipalities, firms, NGOs and individuals (Jänicke and Jörgens, 2006). Decentralisation allowing for broad participation in environmental decision-making is considered a precondition of good environmental governance. Decentralisation is expected to bridge the gaps between local and central actors to allow for higher accountability on the part of decisionmakers (Lemos and Agrawal, 2006; Ribot et al., 2006; Akbulut and Soylu, 2012). Centralised, top-down governance models, on the other hand, often neglect local conditions and concerns, allow for poor accountability and transparency, and generate controversial decisions (Kofinas, 2009; Kiss et al., 2022). In a similar vein,

Smith (2008) notes that top-down approaches may externalise both local people and internal resources and thus can lead to unsustainable outcomes.

Despite the assumption that neoliberalism promotes democratic decentralisation by eliminating direct state intervention in political and social spheres, indeed it does not guarantee dissemination of power and resources for better decisions (Brenner and Theodore, 2002: 352). In neoliberalism, in fact, the institutional framework prioritises ideologies and practices that maintain class privileges and subordinates environmental and historical assets to the free market. State institutions are situated as guarantors of this mechanism (Göçek, 2017: 3). Genuine democratic decentralisation requires both power transfers and accountable representation. In neoliberalism, however, the state can set the rules and conditions of participation through "centralised decentralisation". It can also create a vacuum that can be taken over by private or traditional powers who thus avoid democratic decentralisation and balancing of interests (Kadirbeyoğlu and Kurtiç, 2015). These phenomena are typically observed in surface water governance in irrigation and in the implementation of policies pertaining to Turkey's hydropower plants (HPPs) (Kadirbeyoğlu and Kurtiç, 2015; Hassoy, 2016).

### **Water governance in Turkey**

Ergene River Basin pollution emerged and persisted as a consequence of unplanned industrial development and lax enforcement of environmental standards in neoliberal Turkey. Turkey's neoliberal trajectory emerged after the 1980 military coup and intensified with its engagement with the International Monetary Fund programme in 1988 (Göçek, 2017: 11-13). The neoliberal agenda and the mandated cuts in public expenditure resulted in the dismantling or disabling of several state executive directorates that formerly acted as stewards of the environment, and in the privatisation and commodification of natural resources. Since the 1980s, environmental issues have become a component of public policy (Kibaroglu et al., 2012), and Turkey has begun to develop its legal and legislative institutions of environmental governance. Article 56 in the 1982 Constitution (which was confirmed by a public referendum after the military coup) states that, "Everyone has the right to live in an unpolluted environment, enjoying equally the beauty of nature. The state and the citizens have both responsibility in preventing pollution and in protecting as well as enriching the environment" (translation quoted from Adaman, 1997: 142). Law No. 2872 on the environment was first issued in 1983. It seeks a balance between environmental conservation and economic development, stating in Article 1 that its purpose is to, "[regulate] the measures and precautions to improve and safeguard the health, civil and living conditions of current and future generations in harmony with the economic and social development goals with reference to specific judicial and technical principles". The Water Pollution Control Code was first enacted in 1988. The establishment of a Ministry of Environment in 1991 and the drawing up of an Environmental Impact Assessment Code in 1993 have further emphasised environmental management in politics (Kibaroglu et al., 2012). Moreover, Turkey has become party to a number of critical global environmental agreements to support public stewardship of environmental resources. These include the Convention on Wetlands of International Importance Especially as Waterfowls Habitat (Ramsar Convention), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), the Vienna Convention for the Protection of the Ozone Layer, and the Montreal Protocol on Substances that Deplete the Ozone Layer.

According to Adaman and Arsel (2010), Turkey has a substantial institutional and legislative capacity to implement democratic decentralisation. Election of municipal governments by popular vote dates to 1963. In the 1980s, the establishment of metropolitan city municipalities was a further step in the devolution of power to local authorities. The autonomy of elected mayors, however, is constrained by their subjection to centrally appointed governors responsible for critical public services such as security, education and health. This, plus the limited financial resources that mayors have at their disposal is a matter of conflict between local and central authorities when local policy issues are being addressed (Kalaycioğlu and Kastoryano, 2014).

By the 2000s, Turkey's EU harmonisation process had begun to impact environmental governance. Since 2008, Turkey's environmental regulations have been amended as part of ongoing efforts to align environmental laws with EU guidelines during the accession process (OECD, 2019). In line with the EU's environmental acquis, its Urban Wastewater Treatment Directive, its Dangerous Substances Directive, and the Water Framework Directive (WFD) entered into force (Tigrek and Kibaroglu, 2011; Orhan and Scheumann, 2011; Sümer and Muluk, 2011). The WFD focuses on the protection of surface, ground and coastal water resources, and has an integrated approach to watershed management (Olgun and Çobanoğlu, 2012). Member states are expected to develop River Basin Management Plans (RBMPs) and Programmes of Measures that involve interested parties and/or stakeholders in decision-making (Rimmert et al., 2020). The WFD's emphasis on "good water quality" has not been sufficiently addressed during Turkey's partial transition towards a decentralised water policy paradigm that is characterised by considerable engagement from the private sector (Kibaroglu et al., 2012).

In line with the WFD, participation in water governance is facilitated through basin management committees and Environmental Impact Assessment (EIA) meetings. Basin management committees, however, are silent on critical protection issues (Uygur, 2023) and EIAs – if they are conducted with accountability – have a limited scope of influence and are not applicable to comprehensive RBMPs (Kibaroglu et al., 2012). In many cases, EIAs are executed in a formulaic manner, thus excluding social actors from decision-making processes and depriving them of access to governmental bodies (Paker et al., 2013). Turkey's Seventh Five-Year Development Plan (1996-2000) scoped the preparation of a draft framework water law; the process towards its accession to the EU, however, has been suspended and there has been a parallel failure of efforts to transform water management to be in line with the EU environmental acquis. The World Bank's 2016 Worldwide Governance Indicators state that, since 2011, Turkey has regressed in accountability, political stability, governmental efficacy, regulatory processes and anti-corruption policies; this has also had an impact on issues regarding environmental governance (OECD, 2019).

Grassroots environmentalism has seen growing popularity since the 1990s. It began with the Bergama movement. This was a local peasant response to a transnational gold-mining company, its name referring to the district in Turkey's Izmir Province where the ecological resistance movement was based (Paker, 2020). Overall, however, activism aimed at protecting nature did not elicit a corresponding willingness from the state to protect natural areas (Paker et al., 2013). The exploitation of rivers by hydropower companies, for example, has become increasingly prevalent in the Black Sea region since the 2010s, despite the resistance of villagers (Islar, 2012; Yaka, 2020) and, also despite local resistance, since 2019 the olive groves in the Muğla Akbelen forest have been subjected to intrusion by mining companies (*Yeşil Gazete*, 2024). The destruction of natural areas has accelerated due to top-down governmental policies that are designed to favour business interests for the sake of economic growth and disregard local interests and the conservation agenda of environmental groups (Adaman and Arsel, 2010).

The level of pollution in Ergene sounds paradoxical considering local awareness and mobilisation, media attention, Turkey's membership in the OECD – with its tradition of environmental governance – and the at least partial harmonisation of Turkish environmental law with EU frameworks. This seeming contradiction can be explained by mismanagement by polluting industries, lack of treatment capacity, loose monitoring of pollutant discharges and lax enforcement. The persistence of this problem over the last three decades has led us to analyse it through the neoliberal economic growth mindset and its practices on the ground. We chose to focus on local and central planning and on the narratives of the experts and individuals involved in these processes.

## **STUDY AREA: THE ERGENE BASIN**

The Ergene Basin is bounded by the Meriç River (or Maritza, a transboundary river), the North Marmara Basin and the Bulgarian border. It is in Thrace, which stretches from the Bosphorus in the east to the Greek

and Bulgarian borders on the west, in northwest Turkey. It includes the provinces of Tekirdağ, Edirne and Kırklareli (Figure 1). The main water resource of the basin is the Ergene River, which arises from the Yıldız (Strandzha) Mountains and flows 283 kilometres east to the Meriç River, passing through the townships of Çorlu, Çerkezköy, Lüleburgaz, Babaeski, Pehlivan köy and Uzunköprü. Ergene's water is used for irrigation in first-, second- and third-grade agricultural lands (Ministry of Agriculture and Forestry) over a surface area of 30,000 hectares (ha) (Ministry of Environment and Forestry, 2009; Kahraman and Özkul, 2018). Of the total water potential of the Basin, 78% is surface water and 22% is groundwater (Kahraman and Özkul, 2018). Of the Basin's total land area, 95% (1,223,263 ha) is suitable for agriculture; of this, 328,039 ha is technically suitable for irrigation. Its main products are rice, sunflowers, corn, sugar beets, fruits and vegetables (Tokatlı, 2020).

Figure 1. Map of the Ergene Basin.



Source: Adapted from Kahraman and Özkul (2018).

## Industrial development and population in the Basin

Industry in the Ergene Basin began to develop in the mid-1980s, starting with the shifting of manufacturing plants from Istanbul to mainly the Çerkezköy, Çorlu and Muratlı Districts of Tekirdağ Province (Akça et al., 2022). The region was attractive to industrial companies mainly because of abundant surface and groundwater resources, proximity to Istanbul, connectivity with highways, and state subsidies. The establishment of Organised Industrial Zones (OIZs) plays an important role in moving industrial facilities from city centres to the hinterland. In Ergene, OIZs date back to the 1970s (Kocaman et al., 2011), and by 2021 there were 15 OIZs and one European Free Zone in the Basin (Citizens Assembly, 2021). The state provided incentives to OIZs; these included: the ability to acquire land without paying value-added tax; lower costs for natural gas, telecommunications and water; exemption from real estate duties for five years; and exemption from municipal taxes if the OIZs were not receiving municipal services (Olçay and Erku, 2006; Güler and Turan, 2013).

Industrialisation started with small-scale agricultural companies. It has expanded in a variety of directions, including textiles, leather, food, sunflower oil, paper, machinery, mining, chemistry and automotive-related industries. According to the TR21 Thrace Regional Plan of 2010, there were 1809 industrial facilities; 1277 of these were in Tekirdağ, 265 were in Edirne, and 267 were in Kırklareli (Thrace Development Agency, 2010). In 2013, the Ministry of Forestry and Water Affairs identified 2037 industrial facilities. More recent data shows that there are now over 3000 industrial facilities in the Basin; of these, approximately 80% are located in Tekirdağ Province (Akça et al., 2022). Textile manufacturing still dominates in the region; it is an industry whose dyeing processes generate highly polluted water.

With industrialisation came unauthorised settlements, land grabbing, and misuse of fertile agricultural lands. Over the years, these unplanned settlements have expanded towards Tekirdağ Province and Muratlı District along the Ergene River, into which companies have been discharging untreated wastewater (İnci, 2011: 51). A former Minister of the Environment (1999-2002) admitted that, "textile factories have discharged their wastewater into groundwater-wells without any treatment (...) [and] although they should be punished, they are still operating" (Demirci, 2013). Pollution has reached its highest level in industrial areas, specifically in Lüleburgaz, Çerkezköy and Çorlu Districts, which suffer from pollution-related health problems (Gönül, 2021).

The shift of medium-sized and large-scale factories to Thrace has brought accelerated urbanisation and population growth. Tekirdağ District, for example, experienced a 9.68% increase in population between 1995 and 2000 (Thrace Development Agency, 2010).

## The Ergene Basin and the rise of pollution

As textile, leather, food and chemical plants withdrew increasing volumes of groundwater for industrial use and discharged their wastewater into the Ergene river, both pollution and river flow rose (Kahraman and Özkul, 2018). For many years, groundwater use was unlicensed (Ministry of Environment and Forestry, 2010; Eroglu et al., 2019). According to the Yenicegörece flow observation station, during the summer months the average flow of the Ergene increases to six times its natural flow rate by the time it reaches the Meriç River on the Greek border (Akça et al., 2022). Excessive pollution inhibits the self-cleaning capacity of the river (Kocaman et al., 2015) and the contamination of soil, surface and groundwater by river water also jeopardises biodiversity, wildlife, human life and agricultural production (Acara, 2015). The Ergene River recently showed Class IV water quality in terms of physical, chemical, organic and inorganic parameters (Ministry of Environment and Forestry; Candeğer, 2010; Kocaman et al., 2011; Kahraman and Özkul, 2018; Tokatlı et al., 2020). A study by Yorulmaz et al. (2012) points to river pollution as the cause of increasing cancer rates. Yolal (2014) detects significant concentrations of heavy metals including lead, mercury, cadmium, cobalt and copper, and chemicals such as arsenic, compounds of phosphorus-nitrogen, solvents, acids, alkalis and dyes. Photos taken on different dates in two different branches of the Ergene reveal the extent of pollution in the river (Figure 2).

Figure 2. Pehlivanköy (Kırklareli) and Evrensekiz (Kırklareli) rivers.



Source: Photos taken by respondent#26 (2020) and by the corresponding author (2017).

Domestic wastewater is another significant source of pollution. The absence of proper treatment plants and inadequate sewerage infrastructure contributes to the river's pollution load (Ministry of Environment and Forestry, 2010). The total volume of domestic and industrial wastewater is estimated to be 560,000 m<sup>3</sup>/day; of this, approximately 240,000 m<sup>3</sup>/day of untreated domestic wastewater is discharged into the river (Ministry of Forestry and Water Affairs, 2013). On the other hand, the operational efficiency of wastewater treatment plants in industrial zones is generally compromised due to weak monitoring and enforcement.

Excessive groundwater use and discharge has also led to groundwater pollution, as the industrial plants discharge their wastewater into aquifers (Candeğer, 2010; Varol et al., 2010). According to an interviewee, "textile factories in the region use groundwater absolutely more than necessary, more than 3 times during the textile washing-finishing process whereas it is used only once in similar factories in Istanbul". Groundwater levels have declined by approximately 100 metres (Ministry of Forestry and Water Affairs, 2013; Tirol Kırçiçek et al., 2024). In the Çorlu aquifer, a decrease of up to 150 metres in the static water level was observed (Akça et al., 2022). A comprehensive study investigating changes in groundwater level between 1970 and 2019 shows that their decline has been continuing due to agricultural production, population growth, and changes in climatic conditions (Tirol Kırçiçek et al., 2024).

Data gathered after the implementation of the Deep-Sea Discharge project (DSD) shows a gradual – if insufficient – improvement in water quality. In July 2024, for instance, the colour parameter at the Taşköprü Anagöz (Uzunköprü-Edirne) outlet was measured at 20 Pt-Co (Platinum-Cobalt scale), indicating Class II water quality, while in February 2020 it was 278.2 Pt-Co, indicating Class III water quality. The chemical oxygen demand (COD) was measured at 47 mg/L while in December 2020 at the same outlet it was 208 mg/L, indicating Class IV water quality (Uzunköprü Municipality, 2024).

## Environmental planning

The Ergene Basin Environmental Plan was developed, amended and approved between 1999 and 2011. For our investigation of this plan-making process, we identify its first version as the 'First Plan' and the final version as the 'Second Plan'. The plans possess very distinct characteristics both in their governance of plan-making and in their goals and outcomes (Table 1). During plan-making there was involvement by what we call as local democratic social organisations, including the Ergene and Thrace Platforms (networks of NGOs, occupational groups and individuals working for environmental protection), bar associations, the Union of Chambers of Turkish Engineers and Architects and its branches, trade unions, universities, academics and municipal officers. Their participation in this First Plan lasted until plan-making was taken over by the national authority, who then created the Second Plan in response to concerns over restrictions on industrial development.

The initial planning activities were built on local mobilisation. In the mid-1990s, visioning was enabled through meetings and social forums that were organised by NGOs, professional chambers and universities, which helped draw public attention to the Ergene problem (İnci, 2010a: 19). In 1999, a protocol for plan-making was signed between Turkey's Ministry of Environment (the central government department that steers and approves environmental plans) and Trakya University (the largest public university in Thrace). In symposia and other meetings, meanwhile, the importance of regional planning and stakeholder involvement was emphasised in order to encourage participation in plan-making and ensure the representation of multiple views.

The 1/100,000-scale Ergene Basin Environmental Plan was finalised in 2002 and approved by the Ministry of Environment in 2004 (Aysu, 2010b: 196). The main goal of the First Plan was to confine industrialisation to a specific area along the Çorlu-Çerkezköy/Tekirdağ front, while at the same time promoting less-polluting economic sectors such as eco-tourism and agriculture instead of highly polluting ones like textiles and leather. The central government, pressured by the economic interests of the industrial groups, amended the First Plan 43 times in favour of industrial expansion in Ergene. In 2006, meanwhile, it initiated the drawing up of an alternative plan by signing a protocol with the Istanbul Metropolitan Planning Centre (IMP) of Istanbul Metropolitan Municipality (İnci, 2010b: 286). The Second Plan was assigned to Istanbul Metropolitan Municipality's Metropolitan Planning Centre (IBB IMP), with the Thrace Development Agency (TRAKAB) being approved in 2009 and put into effect (with amendments) in 2010. The main attributes of both plans are presented in Table 1.

Governance of the two plans involved essential differences. The First Plan allowed for democratic participation and the Second Plan delegated planning to an authority from outside the region, the IBB IMP. The First Plan was developed in a decentralised process that allowed for democratic participation by local occupational groups and citizenry; it adopted multi-sectoral sustainable development goals for Thrace and restricted industrial expansion to designated zones. The Second Plan, in contrast, excluded local partners and dismissed the main elements of the First Plan that were related to its sustainable development objectives. Both plans emphasised water pollution control. While the First Plan (2004) focused on the entire basin and took a holistic approach with the aim of constraining the spatial expansion of the manufacturing industry, the Second Plan (2009) was prepared in line with Istanbul's environmental plan, whose goal was to relocate Istanbul's manufacturing industries to the Thrace region (Aysu, 2010a: 422; İnci, 2010b: 312; Union of Turkish Bar Associations, 2015; Acara, 2019).

Table 1. Environmental plans for the Ergene Basin.

Dates	Plan	Owner	Commissioned to	Participants and the process	Focus	Targets for pollution control	Enforcement and elements implemented
1999 (started)	<b>(First Plan)</b>	Ministry of Environment	Trakya University	Diverse actors participated in the plan-making process: universities, bar associations, city planners, academics, public institutions, municipalities, locals, NGOs, professional chambers, trade unions	Developing a holistic approach to planning for the whole basin Goals: Sustainable economic development, planned industrialisation, protection of agriculture, historical identity, and development of tourism	Auditing polluting industries in cooperation with related institutions; establishing integrated wastewater treatment plants (WWTP)	Enforceable if approved, but the plan was cancelled; a new (revised) plan was approved in 2009*
2002 (finished)	The Ergene Basin Environmental Plan						
2004 (approved)							
2006 (started)	<b>(Second Plan)</b>			Shift of authority from local actors to IBB and exclusion of local actors: Ministry of Environment and Forestry, TRAKAB, Istanbul Metropolitan Municipality/ Directorate of Zoning and Urbanisation Affairs, Istanbul Metropolitan Municipality Metropolitan Planning Centre (IBB IMP), TRAKAB	Focusing on the region as a "transition and development area" • Supporting agriculture-based development in Edirne and Kırklareli and industry-based development in Tekirdağ • Establishment of functional links supported by integrated transport systems	<ul style="list-style-type: none"> <li>• Establishing integrated WWTPs</li> <li>• Implementing Regulation on Water Pollution Control discharge standards</li> <li>• Extracting groundwater from wells under the supervision of State Hydraulic Works (DSI) and delivering it to industrial enterprises in amounts determined by the DSI</li> <li>• Maintenance and repair work on the sewage system</li> </ul>	Continuation of construction of integrated WWTPs  Other targets have not been implemented
2009 (approved)	1/100000-scale. Thrace Sub-Region Ergene Basin Environmental Revision Plan***	Ministry of Environment and Forestry	Istanbul Metropolitan Municipality's Metropolitan Planning Centre (IBB IMP), TRAKAB				
2010 (amended and approved)** (The plan is currently in force)							

Notes: \* The first plan was finished in 2002 and approved in 2004 by the Ministry. After being modified several times, a new plan (1/100000-scale Thrace Sub-Region Ergene Basin Environmental Revision Plan) was prepared by the Istanbul Metropolitan Planning and Centre of City Design (IMP) and then approved in 2009. The cancellation of the First Plan was mentioned in the new plan in the General Provisions section as, "2.10.2. From the date of approval of this plan, the Ergene Basin Environment Plan approved in 2004 is abrogated".

\*\* The Second Plan was revised several times, removing the fundamental perspective of the First Plan, which was based on sustainability and a balance between conservation and industrial use. The new plan was finally approved in 2010.

\*\*\* It is referred to as the revised plan. In this paper, it is referred to as the Second Plan.

## The Action Plan and the Deep-Sea Discharge project

While the Second Plan had been approved, in 2011 the Ministry of Forestry and Water Affairs announced the *Ergene Basin Protection Action Plan*, which was dubbed *Operation Dawn*. A summary of the Action Plan is provided in Table 2.

Table 2. The action plan.

Date implemented	Project title	Owner	Targets for pollution control	Enforcement and elements implemented
2011	Ergene Basin Protection Action Plan (also known as the Action Plan or Operation Dawn)	Ministry of Forestry and Water Affairs	Establishment of new integrated wastewater treatment plants (WWTPs) for advanced treatment systems, Reclamation Organised Industrial Zones (ROIZs) and municipal wastewater treatment plants; improvement of existing treatment plants; reduction of pollution load; restrained use of groundwater	ROIZs were established; a communiqué* was published that was entitled "Integrated Pollution Prevention and Control in the Textile Sector"; the Deep-Sea Discharge Co. was established to implement the Deep-Sea Discharge project (DSD); Wastewater discharge continued

Notes: The Turkish Ministry of Environment and Urbanisation published the communiqué. Such communiqués are part of the regulatory process in the hierarchy of norms in Turkish law.

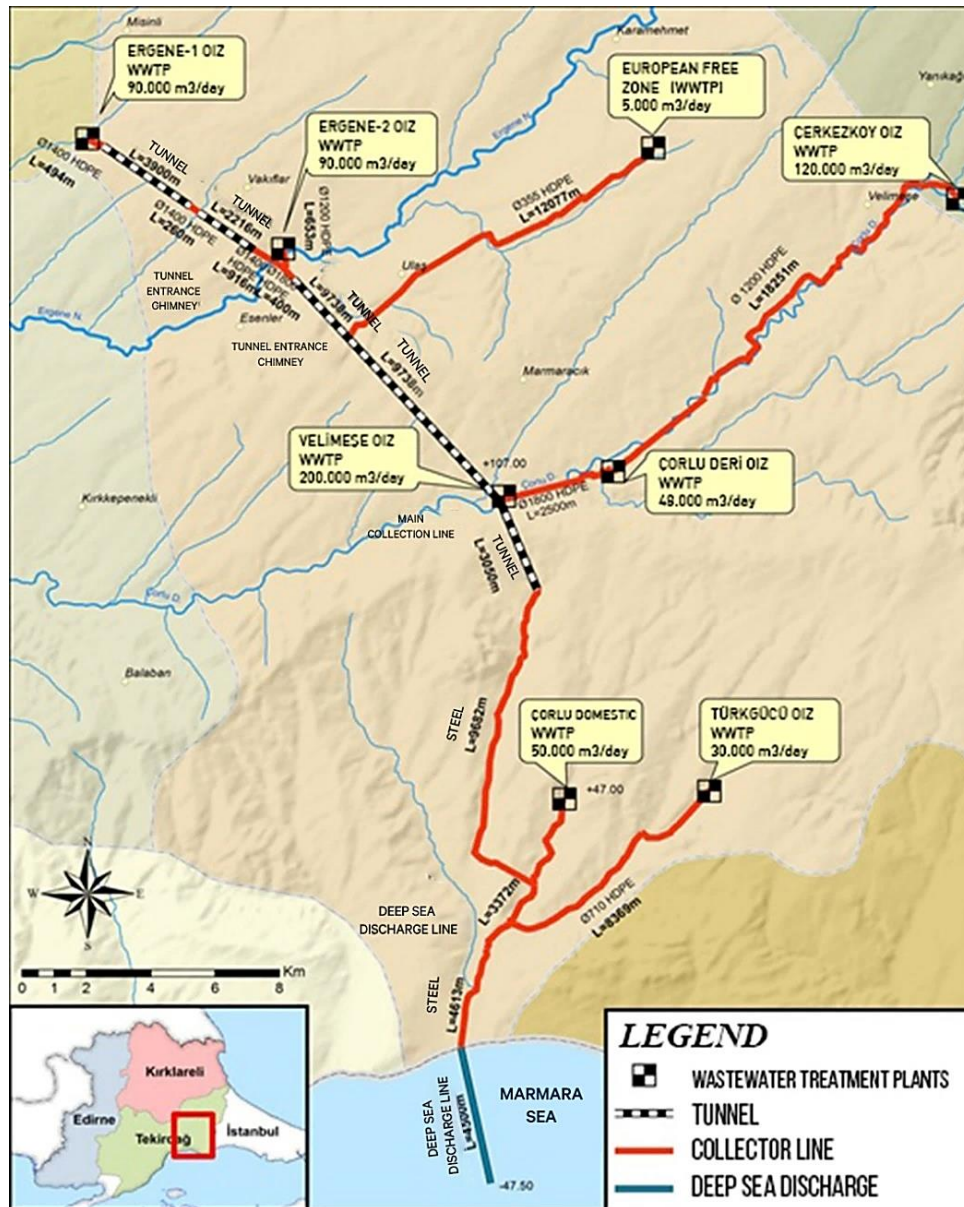
Reclamation Organised Industrial Zones (ROIZs) and the Deep-Sea Discharge project were the most salient elements of the Action Plan. ROIZs were designed to consolidate individual wastewater treatment plants (WWTPs), to construct joint WWTPs, and to prevent the sprawl of industrial plants. Within the scope of the Action Plan, 10 ROIZs were established in Tekirdağ and Kırklareli Districts by 2011, after the addition of a provisional article to the Organised Industrial Zones Law that was entitled *Reclamation Organised Industrial Zones* (Sezen and Kubaş, 2014). The aim of ROIZs was to discharge industrial wastewater into joint wastewater treatment plants to reduce treatment costs. To incentivise companies, electricity was discounted by 50% (Ministry of Forestry and Water Affairs, 2013). In 2013, a total of 10 ROIZs (Velimeşe, Ergene 1, Ergene 2, Muratlı, Çorlu 1, Veliköy, Kapaklı, Yalıboyu, Büyükkarıştıran ve Evrensekiz) became legal entities (Akça et al., 2022).

The most controversial project of the Action Plan was its Deep-Sea Discharge project (DSD), which is depicted in Figure 3. The DSD transfers the wastewater of Çerkezköy OIZ, Çorlu Leather and Joint OIZ, and other new OIZs (Ergene I, Ergene II, Velimeşe, Çorlu 1) to the Sea of Marmara through a deep-sea discharge pipeline following an advanced biological treatment involving the removal of carbon (C), nitrogen (N), and phosphorus (P) (Akça et al., 2022). The flow rate is predicted at 200,000 m<sup>3</sup>/day (Şantiye, 2020). Tekirdağ Ergene Deep-Sea Discharge Co. (Tekirdağ Ergene Derin Deniz Deşarjı A.Ş.) was responsible for its strategic planning and implementation, in close collaboration with the Ministry of Environment and Urbanisation, the Ministry of Forestry and Water Affairs, the Ministry of Industry and Commerce, and the Governorship of Tekirdağ. It was approved in 2014 and started operating by the end of 2020.

After the project was put into operation, wastewater from 10 OIZs in Tekirdağ Province were channelled by pipeline – after advanced biological treatment – to the Sea of Marmara. Wastewater was released 4.5 km off the coast at a depth of 47.5 metres (Şantiye, 2020). It was expected that when the DSD was fully operational, the chemical oxygen demand (COD) level at the point of discharge would be

less than 125 mg/L, and electrical conductivity approximately 3000  $\mu\text{S}/\text{cm}$  (at Class III irrigation water quality) (Akça et al., 2022).

Figure 3. The Ergene Basin, Organised Industrial Zones, joint wastewater treatment plants, tunnels, and the deep-sea discharge line.



Source: Ministry of Forestry and Water Affairs (2013)

### Public and media attention

While the issue of pollution in the Ergene River gained public attention, there was also an upsurge of environmental movements in Turkey. In particular, there was increasing resistance to hydropower plants (HPP) and to the privatisation of water resources that had been legislated by the Water Utilisation Agreement (Elektrik Piyasasında Üretim Faaliyetinde Bulunmak Üzere Su Kullanım Hakkı Anlaşması İmzalanmasına İlişkin Usul ve Esaslar Hakkında Yönetmelik), which was issued in 2003 and revised in 2015.

Since 2009, numerous newspapers and websites have featured the issue of Ergene River pollution, with 2011 being the peak of Ergene debate and coverage in the media. Citizens Assembly (2021) identified 84 reports on Ergene pollution and its effects and on environmental plans published between 2018 and 2021. Till today, the issue of Ergene pollution remains a prominent topic on the public agenda.

## RESULTS

Field interviews revealed that local people were not concerned only with Ergene River pollution or the misuse of its water resources; they also cared about Thrace and Ergene as a whole. They were proud of their country's natural environment and deeply resented the central administrations that had governed the country since the 1990s. On a field visit, a retired public official involved in the Thrace Platform told us that, "yet, before the current government, all others dismissed us", referring to the central governments of the 1990s. Turkey's Justice and Development Party (Adalet ve Kalkınma Partisi, or AKP) has enjoyed uninterrupted power at the national level since 2002. Its hegemony and political success are often attributed to the party's right-wing economic populism, which is built on popular Islamist conservatism. Thrace, with its deeper secular traditions, is to some extent free of this Islamist influence, and most of the provinces, towns and villages are run by mayors and headmen who are affiliated with the secularist Republican People's Party (Cumhuriyet Halk Partisi, or CHP). Many interviewees in the field, however, also deeply resented the CHP, either for its complacency or for the collaboration of their elected representatives with AKP-led development policies. In the opinion of these interviewees, the state had "sacrificed" Thrace to its neoliberal development programme. They cited the unregulated concentration of industrial plants and the extensive allocation of land to wind and coal power plants, lignite mines and quarries.

Several NGO activists echoed an understanding that, "Ergene is a victim of neoliberal policies". A senior local municipal officer from the region commented that, "Ergene pollution is just an outcome" of the expansion of manufacturing industries, the grabbing of groundwater resources, and the purchase of arable land from villagers who "sell their lands and move to the townships and after running out of money become workers and watchmen for those plants". Villagers suffering from water and soil pollution claimed that, "industrial plants present their existence as a favour to the local communities since they are job providers". Ergene River pollution is caused by the hundreds of industries that charge polluted groundwater into the river. Many of these plants are in fenced OIZs. Locals perceive the pollution as non-point and cannot track it back to the original individual polluter. There is a wide consensus that, "treatment plants are not operated" and "fines are low" and Ergene is becoming "the sewer of Thrace".

### Narratives of development and plan-making

While the Ergene Basin Environmental Plan (1/100,000-scale) was in progress between 2009 and 2011, the commissioning of IBB IPM by the Ministry of Environment and Forestry in 2006 marked a significant shift in the governance of this process. The regional governors gathered in Istanbul in 2006, where the then mayor of the Istanbul Metropolitan Municipality announced that he had the authority – via a protocol he had signed with the Ministry of Environment and Forestry and the Thrace Development Agency (TRAKAB) – to prepare an environmental plan for the Ergene Basin (İnci, 2010b: 286). Trakya University, which had been commissioned to draw up the First Plan in 1999, was invited to the second round of planning meetings only twice during the 2004 to 2011 period (Aysu, 2010a: 393).

An interviewee who took part in in the first phase said that, "the plan prepared under the leadership of Trakya University had predicted that industrialisation would create pressure for further spatial expansion to the west, so we chose Çerkezköy and Çorlu districts as shields against the potential sprawl". Another interviewee from the first phase emphasised that, "while the plan approved in 2004 was motivated to conserve the environment, the focus in the planning by 2006 shifted towards sustaining industrialisation". A third interviewee from the first phase of the planning – a university professor – said

that, "the plan was modified to align with the Istanbul metropolitan plan". Tüzün (2010) argues that the latter plan proposed moving dirty industries from the Büyükçekmece Basin in Istanbul to the Çerkezköy OIZ in the Ergene Basin. Indeed, the plan that was approved in 2011 was criticised by academics and NGOs as an intervention by national authorities that was aimed at catering to the needs of the Istanbul metropolitan area.

The conflict between the democratic participation phase and the top-down governance phase of the plan-making was thus not only about sustainable development and neoliberal economic growth priorities. It was also about a centre – periphery conflict and about unequal economic development between Istanbul and its eastern neighbour, the Ergene Basin. Meanwhile, the proponents of industrialisation, including industrialists, and central and local government representatives, reacted to the first plan by using a vilifying rhetoric directed towards conservationists. One NGO representative said that, "we are blamed for halting industrial development and denying job opportunities for the young people".

### **Controversy around the Action Plan**

The Action Plan was compatible with the Second Plan, which banned further development of highly polluting industrial activities such as metal refining, textile production and refineries. It also aimed to control groundwater extraction by installing electricity and water meters on well outlets in compliance with the State Hydraulic Works (Devlet Su İşleri, or DSI) regulation, dated 7 June 2011 (Ministry of Forestry and Water Affairs, 2013). While these mandates were welcomed by many, some NGO-affiliated activists argued that ROIZs legitimised the sprawl of unauthorised residential districts. Meanwhile, the decline in groundwater level has continued unabated (Tekirdağ Metropolitan Municipality, 2018).

The DSD was heralded as a remedy to Ergene's pollution problem by the Ministry of Agriculture and Forestry (2020). During the planning and construction phases, the impact on the Sea of Marmara was stressed by opponents of the project and downplayed by its proponents. While it was argued that by 2030 the pollution loads would have increase by 2.2%, 1.3% and 1% in chemical oxygen demand, total nitrogen and total phosphorus respectively, this increase was expected to exert negligible effect on the overall water quality in the Sea of Marmara (Akça et al., 2022). Others challenged this argument, claiming that these calculations failed to consider pollution loads that could occur in the longer term (Union of Turkish Bar Associations, 2015; İnan, 2021). An academic in the region who was working in the field of engineering said that, "advanced biological treatment by the OIZs is going to be sufficient" and that, "the textile industry uses a lot of salt to treat, hence it is appropriate to discharge this residue to the sea instead of a river stream". Another engineer working of the wastewater treatment plants argued that, "the individual companies lack qualified personnel to project and operate individual treatment plants, so it is more appropriate to run the joint wastewater treatment plants". Several NGO representatives were sceptical. An interviewee said that wastewater, "will not be treated properly (...) just discharged to the sea". Another interviewee said that, "it is just the public who pays, not the polluter", and that, "Thrace is the boiler room, Ergene is the sewer and now the Sea of Marmara is the cesspool". Greenpeace Türkiye (2021) was concerned about the dissolved oxygen levels in the Sea of Marmara, arguing that the DSD was a violation of the Water Pollution Control Code. The Union of Turkish Bar Associations (2015) was concerned about the actual wastewater treatment that would happen in the joint treatment plants and was also sceptical about their compliance with the Water Pollution Control Code.

### **Any role for mass movements?**

Pollution in the Ergene River has drawn public attention since the mid-1990s. NGOs, professional chambers and local people have held meetings to raise awareness on the social and environmental impacts of industrialisation (İnci, 2010a: 19). The 2011 *Let Ergene Return to Life* rally, organised by the Ergene Platform and attended by ten thousand people was the most prominent Ergene River mass

protest (CNNTÜRK, 2011). The Confederation of Farmers' Unions (Çiftçi Sendikaları Konfederasyonu) participated in the rally. Union representatives emphasised that pollution in the region was undermining agricultural production and farmers' living conditions (Karasaban, 2011). However, unlike the Bergama peasant movement in the 1990s and protests against hydropower plants throughout the 2010s (Paker, 2020), during the period we investigated there had not been open conflict between locals/environmentalists and industry and state security forces. In the next section, we will discuss possible reasons for this.

## DISCUSSION

As of 2024, intense pollution in the Ergene River is experiencing some improvement, however marginal, in its widespread impact on soil and groundwater resources (Su Politikaları Derneği, 2024). Since the implementation of the DSD, however, the fragile Sea of Marmara has been increasingly at risk, as generally observed and as seen specifically during the mucilage event of June 2021 (TMMOB ÇMO, 2021; Robins, 2022). This begs the question of how and for whose benefit is the Ergene now almost a haven for polluters. Turkey, as an OECD member state, is under constant monitoring of its environmental standards to determine its eligibility for foreign credits and investments. It is half way to being a successful EU candidate and is in partial alignment with the EU's environmental *acquis* in terms of environmental and water governance. Turkey is a country with a democratic tradition and institutions of democratic participation. It has the technical capacity to face industrial pollution, as is indirectly acknowledged by the OECD (2019). And, yet, one of the country's major watersheds – bordering on the signature city of Istanbul – has become something of a haven for polluters, not foreign but domestic.

We suggest that the narratives around environmental planning and Operation Dawn's action plan with its DSD have created the conditions enabling the Ergene Basin pollution problem, while delaying the implementation of systemic measures to alleviate it. Neoliberal Turkey – and its peculiarities under longstanding AKP governments – has prioritised economic growth and short economic benefits that are harnessed and disseminated through a clientelist business environment (Adaman et al., 2009); this has been accompanied by increasingly authoritarian attitudes towards the citizenry and growing arbitrariness in legal and judicial processes.

It is evident that the environmental planning for sustainable development that was aimed at capping the sprawl of polluting industries was highjacked by the central government, which prioritised the expansion of manufacturing industries. Governmental priorities were legitimised with a "jobs first, food first" argument, and the concerns around pollution were relieved with techno-optimistic arguments that overemphasised the role in pollution control of OIZs, joint WWTPs, and the DSD. Indeed, none of these measures were aimed at implementing the 'polluter pays' principle. Rather, the interview data reveals that factories have free access to groundwater, that their treatment plants are not fully operational, that inspections are infrequent, and that fines are low when environmental codes are violated. The OECD (2019) argues that in the absence of judicial punishments administrative fines are not high enough to deter factories from polluting. The granting of such favours to private interests is a strong indicator of clientelist rule under a neoliberal programme; it reinforces corruption and violates the rights of people and nature despite existing laws and the constitution.

Another facet of right-wing AKP populism is the deliberate undermining of expert opinion, particularly opinions voiced by the educated elite that is affiliated with democratic society organisations. This, in turn, creates resentment among members of the educated middle class, who are already only weakly determined to face governmental pressures. Ergene is not the only case where alternative expert opinion is dismissed. To recall a few critical instances in recent history, the Third Bridge over the Bosphorus and the New Istanbul Airport were constructed against strong expert opinion (Dogan and Stupar, 2017). The Canal Istanbul megaproject, still in a judicial dispute between the central government and the Istanbul Metropolitan Municipality (now run by a CHP leader and a CHP-led assembly), remains on the

government's agenda despite diverse expert opinions regarding its multiple irreversible adverse consequences (see, for example, Baba, 2020; IMM and IPA, 2020; Pehlivanlı and Eslen-Ziya, 2024). The land zoned for development around the intended canal is already under development.

The neoliberal programme is creating its own unorganised poor who lack the capacity to fight for their own rights and conditions. New industrial labour, deprived of their arable lands, join the immigrant labour force settling in growing towns in new, mostly unauthorised residential districts. Their livelihoods depend on wages from polluting manufacturing plants. A similar pattern was observed among the miners and the labourers working in the coal mining industry in Soma, Turkey. The miners faced Soma's hard and insecure conditions, which were structured around a clientelist industrial formation that included irregularities in labour acquisition. In 2014, they endured a dramatic disaster with 301 lives lost. Post analysis revealed that the coal miners were aware of the accumulating risks caused by underinvestment and heavy work scheduling, and that many of the workers were young men who had been deprived of their arable land as their source of livelihood (Boğaziçi Soma Dayanışması, 2014).

The clientelist business development, the alienation of the educated classes, and the formation of a new precarious working class have consequences for mass mobilisation. The businesses enjoying low labour and environmental costs legitimise themselves as caring job givers rather than investing in knowledge and technology to create high value-added production. The resented educated elite is not particularly interested in creating conditions for mass mobilisation. The poor are overwhelmed, unorganised and too insecure to mobilise. The controversies outlined in this study are thus latent and are mostly between the professional communities and NGO-affiliated people and the centrally appointed governors and central government. In the discourse, the controversy is between sustainable development and unconditional economic growth. Another discursive conflict is about the economic developmental model designed for Ergene, which is perceived as unequal in the centre – periphery of Istanbul and Thrace. The conflict is not explicitly expressed; as has been observed in struggles against hydropower plants and mining companies, which leads to confrontations between locals who are defending their habitats versus state security forces and industry guards (Islar, 2012; Yaka, 2020; Diken, 2019; Dağistanlı, 2022; Çiftçi, 2023). Like the case of massive industrial pollution in the town of Dilovası, east of Istanbul, which is now notorious for its high cancer rates (Hamzaoglu et al., 2014), the polluters are many, subtle and diffused; as such, they overwhelm the ability of the masses to target the worst perpetrators.

In the early 2000s, benefiting from Turkey's tradition of decentralised governance (Adaman and Arsel, 2010), occupational groups seized an opportunity to democratically participate in planning the course of their country. Their cause could have created the conditions for better governance of the Ergene Basin (in line with the premises of the literature on decentralised governance; see Kofinas, 2009; Kiss et al., 2022). The central government, however, was able to highjack their efforts, thanks to the conditions created by the overall neoliberalist mindset (McCarthy, 2004; Castree, 2008), and its course in Turkey in particular (Göçek, 2017: 11-15). A full-fledged understanding of the conservation failure in the Ergene Basin, however, requires more a specific focus on the mechanisms of the licensing of manufacturing plans, their operations in OIZs, and their monitoring and enforcement on the ground. Moreover, the potential role and possible involvement of communities directly impacted by the industrial pollution – such as farmers and the residents of the townships around the industrial zones – can be brought to light, as suggested in the paper's conclusion.

## CONCLUSION

Pollution of the Ergene River began in the 1980s, starting with the westward migration of polluting manufacturing industries from Istanbul to Çerkezköy and Çorlu. That decade marks the advent of neoliberal Turkey. High flow rates and intense water pollution was observed in 1990s, creating discontent among the local population. In 1999, under a contract signed with the central government, the local

occupational groups under the leadership of the regional Trakya University started an environmental planning process aimed at shaping the course of economic development in Thrace towards more sustainable pathways. Their plan-making was hijacked in 2006 by the central government, who created another plan that was less restrictive to the sprawl of manufacturing industry and whose narrative contained a techno-optimistic attitude towards the role of Organised Industrial Zones, joint wastewater treatment plants and deep-sea discharge into the Sea of Marmara. Both the plan-making and the sanitation projects have been a subject of controversy among local professionals, the central government, and industry representatives. Meanwhile, the industrial base and pollution have grown in parallel under the weak monitoring and lax enforcement of regulations pertaining to the law on environment and the constitution of the country. The conditions for environmental conservation failure have been created by the centralised government oversight of the Ergene issue during plan-making and large-scale project development, the favouritism shown towards manufacturing plants, the alienation of the NGO-affiliated elite, and the weakening of communities with discursive and forceful approaches. The Deep-Sea Discharge project were implemented by the end of 2020. Water quality in the Ergene River Basin is now marginally better, albeit uncertain, while the Sea of Marmara is facing higher environmental risks and Thrace is heavily populated with extractive and polluting industries. Members of the public – not the polluters – are paying the environmental costs, and part of this cost is being shifted from the river to a fragile sea.

Our work investigates the making of a conservation failure and the creation of a polluters' haven in a region of an OECD member country that is monitored according to OECD guidelines. Turkey is possessed of institutional elements of democratic participation and has the technical skills to combat industrial pollution. The failure of conservation in the Ergene River Basin has occurred despite Turkey's partial amendment of its environmental and water governance norms in line with the EU's environmental acquis and directives. Ergene is thus an interesting case for understanding the overriding rule of neoliberalism and right-wing populism, despite the former's promises on decentralisation and good governance and the latter's promises with regard to good quality of life.

In this research, we focused on environmental plan-making, technical action plans, and on a participant pool that was limited to educated classes and activists affiliated with civil societal organisations. Our understanding of the overriding influence of Turkey's neoliberal mindset is thus also limited. In future work, it would be interesting to observe the rules and norms of neoliberal Turkey on the ground, including those related to land acquisition and the licensing of manufacturing industries, the pace of amendments of regulations on environmental quality, the judicial processes in response to public appeals, the operations of Organised Industrial Zones and sanitation plants to reduce their costs, and monitoring and enforcement of regulations limiting polluting activities. To answer this question from another angle, a second direction of work can investigate the discursive and material enablers and disablers of social movements in the most impacted communities, that is, farmers and industrial labourers who live in the most polluted rural and residential districts around manufacturing and excavating industries. Moreover, a comparative analysis of the making of polluters' havens such as Turkey's Ergene and Dilovası areas with those in other countries with similar institutional, technical and economic capabilities can further highlight the dominant role of neoliberal rule.

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**APPENDIX: THE LIST OF INTERVIEWEES**

No	Interviewees
1	Academician – Physician, Kocaeli University, Kocaeli
2	Academician – Environmental Engineer, Boğaziçi University, Istanbul
3	Academician – Political Scientist, Boğaziçi University, Istanbul
4	Academician – Environmental Engineer, Istanbul Technical University
5	Academician – Civil Engineer, Istanbul Technical University
6	Academician – Environmental Engineer, Namık Kemal University, Tekirdağ
7	Academician – Environmental Engineer, Namık Kemal University, Tekirdağ
8	Academician – Environmental Engineer, Namık Kemal University, Tekirdağ
9	Academician – Architect, Okan University, Istanbul
10	Academician – Physician, Trakya University former president, Edirne
11	Academician – Environmental Engineer, Trakya University, Edirne
12	Academician – Civil Engineer, Yıldız Technical University, Istanbul
13	Environmental Engineer, Organised Industrial Zone, Tekirdağ
14	Topographical Engineer, Organised Industrial Zone, Tekirdağ
15	Hydrobiologist, affiliated with a project on monitoring the Marmara Sea, Istanbul
16	Documentary Film Director, Istanbul
17	Farmer, Headman from Kırklareli
18	Farmer, Headman from Kırklareli
19	Farmer, Headman from Kırklareli
20	Official, Kırklareli Vize Chamber of Agriculture
21	Official, Kırklareli Vize Chamber of Agriculture
22	Official, Agricultural Services Department – Tekirdağ Municipality
23	Official, Environmental Protection Department – Tekirdağ Municipality
24	Official, Edirne State Hydraulic Works
25	Retired public official, Member of Kırklareli Provincial Council/Kırklareli Karamusul Village Association
26	Retired from Turkish Grain Board, Representative of Trakya Platform, Kırklareli
27	Physician, Member of (former) Ergene Initiative, Tekirdağ
28	Physician, Edirne Medical Chamber representative
29	Lawyer, NGO representative, Edirne

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