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Embodied Urban Political Ecology of Oil: Social Reproduction in Oil Geographies
Case Study: Ahwaz, Khuzestan, Iran

by
Maryam Amiri

A dissertation submitted in partial fulfillment of the
requirements for the degree of

Doctor of Philosophy
in
Urban Studies

Dissertation Committee:
Megan Horst, Chair
Nathan McClintock
Melissa Haeffner
C.N.E. Corbin

Portland State University
2024

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Abstract

This dissertation examines the transformative impact of the oil industry on social reproduction within the urban and ecological landscapes of Khuzestan Province, Iran, and its center, the city of Ahwaz. Specifically, the study sought to understand the effects of the oil industry on social reproduction in three key areas: gender relations, race/ethnic relations, and daily life amidst environmental pollution caused by the oil industry.

This is explored through three sub-questions: 1) How are hierarchical socio-spatial relationships perpetuated through practices of everyday life? 2) How are gender relationships redefined and reproduced in the oil city? 3) How are ethnic relationships redefined and reproduced in the oil city? The research methodology combines extensive archival work, examining the historical development of the oil industry in Khuzestan, with contemporary ethnographic methods, including interviews with 35 residents of Ahwaz, to capture their experiences of social reproduction under the influence of environmental pollution from the oil industry.

By integrating theories of petro-colonialism and domestic colonialism with Urban Political Ecology, the dissertation frames oil cities as spaces where foreign and domestic colonial agendas converge, leading to significant socio-ecological disparities. My approach to UPE extends beyond spatial and environmental transformations to include the bodily and material impacts of such changes. This theoretical framework helps to understand the pervasive impact of the oil industry on social reproduction, particularly through the lens of environmental degradation and its disproportionate effects on marginalized communities.

The dissertation contributes to the academic discourse by highlighting the under-researched area of oil production's impact on urban spaces and social relations. It calls for a more embodied, at the same time multiscalar approach to urban political ecology, which considers the lived experiences of those residing in oil-rich regions. Ultimately, the research aims to provide insights that could inform policies and strategies to mitigate the negative impacts of the oil industry and promote more sustainable and equitable urban development in regions like Khuzestan. This study not only provides insights for urban planners and policymakers but also offers valuable historical and contemporary analyses for understanding the socio-ecological transformations driven by the oil industry in Khuzestan.

Dedication

I dedicate this dissertation to the people of Khuzestan and their longstanding resistance struggle against exploitation and colonialism.

Acknowledgments

I want to thank a number of people whose assistance was crucial to completing this dissertation.

I am enormously grateful to my advisor, Megan Horst, for her help throughout the years of my program. This project has gone through many evolutionary stages, and Megan has patiently worked with me through countless discussions and reading several drafts, helping to refine my ideas. Her constant support and encouragement have been invaluable.

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Deepest thanks go to Greg Schrock and Aaron Golub, the school directors, and Jennifer Dill, the PhD program director, for fostering an environment of academic excellence and their commitment to students' success. I am particularly thankful for the opportunity to teach, which greatly enriched my academic experience, and for their trust in me by offering this position.

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this research would not have been possible. Their stories and perspectives have provided the foundation for my study, and I am profoundly thankful for their trust in this research.

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List of Abbreviations

APOC: Anglo-Persian Oil Company (1908- 1936)

AIOC: Anglo-Iranian Oil Company (1936-1951)

BP: British Petroleum

NIOC: National Iranian Oil Company

KWPA: Khuzestan Water and Power Authority

ATU: Arab Tribal Union

TVA: Tennessee Valley Authority Act

SBPDC: Sugarcane and By-Products Development Company

All translations from Persian are mine, except otherwise stated.

Chapter One: Introduction

Purpose of the Study and Research Questions

Since the early 20th century, petroleum and its refined products have played a crucial role in shaping the interconnected and multifaceted built environments that define our global landscape. The use of petroleum products is a defining characteristic of urban life, and oil infrastructure serves as the connective tissue between spatially distant and seemingly disparate cities and non-cities. Simultaneous with the transformation of the space, oil transformed social reproduction - the ways in which we live (Mitchell, Marston, and Katz, 2003; Meehan & Strauss, 2015). In today's world, fossil fuels are so deeply ingrained in our social reproduction that it is nearly impossible to imagine a world without petroleum (LeMenager, 2014). Fossil fuel has remade time and space and reshaped concepts such as nation-state building, nationalism, democracy, freedom, population, and human subjectivity (Szeman & Wellum, 2021). These concepts, in one way or another, are intricately entangled with oil consumption. Therefore, it has played a significant role in shaping how we reproduce ourselves as a society, as a community, and as individuals. At the same time, fossil fuels have profound and far-reaching consequences for the global climate. Therefore, paying attention to social reproduction in the geographies of oil production must be part of the literature and action to stop climate change. To achieve this transformation, it is essential that we understand how fossil fuels have structured our social reproduction, not only in the geographies where they are consumed but also in the nodes of their production.

This dissertation contributes to understanding the social reproduction of the oil industry. It explores how the oil industry reshapes social reproduction in oil production geographies, leading to positive or negative changes. In this study, social reproduction is defined, following feminist geographers (Laslett & Brenner, 1989; Katz, 2003; Di Chiro, 2008; Meehan & Strauss, 2015), as the interconnection of political-economic, socio-cultural, and material-environmental processes required for maintaining everyday life and sustaining human cultures and communities on a daily and intergenerational basis. To operationalize these broadly defined aspects, I set three sub-questions through which I investigate the reproduction of gender and ethnic relationships and the impact of environmental pollution from the oil industry on daily life.

- 1- How hierarchical socio-spatial relationships in the oil city are perpetuated through practices of everyday life
- 2- How gender relationships are redefined and reproduced in the oil city
- 3- How ethnic relationships are redefined and reproduced in the oil city.



Figure 1 Framing research questions

Questions two and three will be majorly explored by examining historical events, while question one will focus on both history and contemporary times in the early 21st century.

Throughout, I investigate the role that the urbanization process and environmental issues played in producing a new time-space, which is, borrowed from Henri Lefebvre's terminology, an *abstract space* that is hierarchical and colonial and, at the same time, offers hope and attracts immigrants seeking a better life.

My dissertation is grounded in the urban political ecology (UPE) literature, which explores the relationship between the built environment and power structures. Living conditions in cities are intimately tied to the circulation of capital, resources, and nature, as Swyngedouw and Heynen (2003) discuss. According to UPE scholars, the power-laden socio-ecological processes of urbanization always result in highly uneven and inequitable landscapes necessary for capital circulation. The material conditions that structure urban environments benefit elites and work against marginalized populations.

My research is also influenced by theories of social reproduction, which focus on the conditions of life. Social reproduction refers to a range of activities, behaviors, responsibilities, and relationships that ensure the daily and generational social, emotional, moral, and physical well-being of individuals (Meehan & Strauss, 2015). Both UPE and social reproduction theories emphasize the uneven distribution of material conditions that allow some groups to thrive while leaving others in precarious situations (Meehan & Strauss, 2015).

Since social reproduction is dialectically related to production, the two are mutually constructive and often in tension (Katz, 2001). Social reproduction can, therefore, shape the conditions of production. To extract oil, it is often more feasible to dispossess a group

of people who lack the material conditions necessary for their social reproduction, such as education, money, healthcare, and a clean environment.

This dissertation centers on Khuzestan, an oil-rich province in southwest Iran that boasts the largest oil fields in the country and some of the largest globally. The geographical focus of this study is regional and encompasses several oil cities within Khuzestan. In chapter six, I will narrow the geographical focus on the metropolitan area of Ahwaz, the province's biggest city and hinterland. These case studies serve as an emblematic example for other global oil cities, both in the Global South and North¹. However, caution must be taken to avoid falling into the trap of *commodity determinism*, a conceptualization of oil that ignores the agency of local actors. Indeed, the socio-spatial relationships of oil are always situated in a particular time and space and thus embedded in a localized political economy (Watts, 2012).

However, ample evidence demonstrates similarities in the geographies of petroleum production, which are characterized by dispossession, environmental pollution, inequality, poverty, and corrupt and concessionary politics (Luke and Heynen, 2020). Therefore, when it comes to the production side of the oil industry, the boundaries between the Global North and South are blurred, e.g., failed social and environmental development can be observed in both Louisiana's Cancer Alley, USA (Woods, 2009) and Khuzestan. Thus, studying the relationship between oil and social reproduction in Ahwaz, Khuzestan allows us to

¹ Aware of the oversimplification, inaccuracy, and reductionism associated with these terms, I use them as they are commonly used in academic literature.

compare it with other geographies of oil production and, as Katz (2001) suggests, to draw contour lines between oil cities. This approach will help us situate different localities in relation to specific social practices, such as oil production, and gain insights into the relationships between various places. It is essential to understand the linkages between the geographies of oil production and the material social reproduction associated with the organization of oil production. This knowledge is critical if we hope to effectively challenge the negative impacts of fossil fuel production.

Despite the broad academic research on how consuming oil has shaped the modern lifestyle and urban spaces, including its significant influence on transportation systems and the accumulation of wealth, specifically in the Global North cities (e.g., LeMenager 2013), the production side of the oil industry is still thin in urban research (Simpson, 2020). Likewise, the socio-ecological consequences of oil production in urban areas and their impacts on the social reproduction of people who live near their facilities and infrastructure have yet to be researched comprehensively. Utilizing these bodies of literature, I aim to demonstrate how the foreign and domestic colonial process of oil extraction has altered social reproduction in Ahwaz, Khuzestan. Specifically, I will examine how this transformation has both negatively and positively impacted the subaltern population² and how these power relationships are replicated in everyday life.

² the term "subaltern" is defined primarily in relation to the concept of powerlessness within the frameworks of colonialism and postcolonial discourse. Gayatri Spivak (1994) discusses subaltern as a term for the populations that are socially, politically, and geographically outside of the hegemonic power structure of the colony and the colonial homeland. In essence, it refers to the groups in society who are at the margins of a hierarchy and whose voices are denied the possibility to speak.

My research contributes to the current literature in several ways. Firstly, it enriches the literature on urban political ecology by concentrating on the role of oil, which has not yet been extensively explored in UPE scholarship. It expands the current understanding of how oil contributes to the creation of space and uneven urban environments. Additionally, my research deepens our comprehension of social reproduction and its relationship with the built environment. Lastly, by linking urban political ecology to social reproduction, my research contributes to the developing literature on embodied urban political ecology. By understanding how life is organized within the global and local oil complex, urban researchers, planners, and decision-makers can develop more effective strategies for addressing the socio-environmental impacts of fossil fuels. This knowledge can inform the development of policies and initiatives to promote sustainable and equitable urban environments, reduce dependence on fossil fuels, and support communities impacted by oil extraction. Ultimately, this understanding can lead to more effective and just responses to the complex challenges posed by the fossil fuel industry.

Chapter Overview

This dissertation will begin by constructing a theoretical framework for the rest of the study. Chapter Two lays the theoretical foundation for the dissertation. In this chapter, I explore the significance of the *oil city* to its residents and examine how urban areas engage with various aspects of oil production as represented in academic literature. I then delve into the spatiality of the oil industry, considering both urban and broader geographic contexts. The theoretical framework of this dissertation integrates theories of petro-colonialism and domestic colonialism with the latest trends in urban political ecology,

particularly focusing on social reproduction.

In Chapter Three, titled "Everyday Life in the Colonial Oil City and Reproduction of Gender Relationships," the focus is on examining the interactions between the oil industry and social reproduction in the early phases of oil development in Khuzestan's oil region, spanning from 1908 to 1950. This chapter aims to understand the historical spatial organization of the oil industry and its influence on gender relations. The chapter investigates the distribution of resources necessary for a healthy and flourishing life in the oil city, delving into the colonial discourse surrounding health and sanitation. Additionally, it explores how the oil city's residents created alternative spaces within these colonial frameworks to ensure their survival and prosperity.

In Chapter Four, the narrative shifts to a more detailed examination of women's experiences in the oil city, highlighting their significant yet unrecognized contributions to the establishment of the oil city. Despite their near-total exclusion from formal employment opportunities within the oil industry, women played a pivotal role in shaping the social and economic fabric of the oil city. Through this focused lens, the chapter uncovers the nuanced ways in which gender relationships were reproduced and challenged within the context of colonial oil development in the region.

In Chapter Five, titled "Socio-Ecological and Geographic Roots of Reproduction of Ethnic Relationships in the Oil City," I focus on how the oil industry has transformed ethnic relationships in Khuzestan, emphasizing the concept of domestic colonialism. The oil industry's role in creating subaltern populations is key to understanding the global oil

dynamics. This chapter delves into the ethnic transformations that occurred from the early 20th century to around the 1990s, after the Iran-Iraq war, that posited the Arab population being relegated to the lowest rung of the social hierarchy.

I argue that in Khuzestan, the process of ethnic transformation involved dispossession, environmental degradation, and the inequitable distribution of resources and opportunities. These factors collectively disrupted the social reproduction of subaltern groups, rendering them incapable of sustaining their communities. Consequently, these groups became highly vulnerable to political power manipulations, environmental disasters, and socio-economic shifts. This chapter aims to provide a nuanced understanding of how the oil industry has reshaped ethnic relationships and contributed to the creation of deeply entrenched social inequalities within the urban context of the oil city.

In Chapter Six, titled "Flash-Forward: Social Reproduction and the Everyday Ecology of Surplus Population in the Oil City," I use in-depth interviews to look into daily life and social dynamics in Ahwaz. This chapter breaks down how different environmental and social factors, physical and societal, as well as economic and cultural, play out in the oil city and shape people's living spaces. This chapter aims to shed light on the stark differences in living conditions within Ahwaz, a city shaped by its colonial past and class divisions, driven by its economic and social history, and how these conditions affect its residents differently.

Finally, Chapter Seven concludes the dissertation. I argue that the oil industry's restructuring of ethnic and gender relationships and reproducing space of marginality was

made possible through colonialist practices -international and domestic- that led to ecological destruction. This restructuring involved shaping people's aspirations and feelings of hopelessness through hiring practices and the distribution of environmental pollution. During the process of reshaping structures of social reproduction, residents may experience harm, lose their former social and cultural connections, and become marginalized in the oil city.

My investigation reveals lessons for the global struggle against fossil fuel environmental impacts and shows it is essential to transform the organization of social reproduction within oil-producing geographies in order to halt and even reverse the effects of climate change and the destructive consequences of fossil fuels. This transformation must aim for a more just and equitable exploitation of fossil fuels by implementing a radical democratization of resource control.

Case Study Context

This research uses the oil-rich province of Khuzestan and its center, Ahwaz's metropolitan area, as a case study. Figure 2 shows the location of Khuzestan and Ahwaz in Iran. In 1908, oil was struck at a commercial scale at Masjed-Suleiman in the north of Khuzestan. In 1901, a British merchant, William Knox D'Arcy, was granted an oil concession by the Qajar dynasty Shah (King) of Iran. The Anglo-Persian Oil Company (APOC) was established after the oil discovery. During World War I in 1914, the British government became the major stakeholder of APOC to ensure a sufficient oil supply for its warships (Issawi, 1971). Renamed the Anglo-Iranian Oil Company (AIOC) in 1936, the company

held exclusive control over Iranian oil until 1951, when the Iranian oil nationalization movement succeeded.



Figure 2 Ahwaz Situation in Khuzestan and Iran (Razmjoo et al., 2016)

Through various dynasties, from Elamites (3200–539 BC), the Achaemenids (550 BC) to the Sasanids (220 AD), Khuzistan was an essential center, with cities like Susa (modern Shush) were significant cultural and administrative hubs. The area's strategic importance continued through the Islamic conquests (650 AD), maintaining its significance due to its productive lands and as a trade route. This prosperity seems to have lasted well into the fifteenth century. Following these developments, Khuzestan began to diminish due to the deterioration of essential hydraulic infrastructure, a decline in agriculture and crafts, and demographic shifts towards tribal nomadism (Soucek, 1984).

In the early 20th century, when the oil industry emerged in Iran, Khuzestan was one of Iran's most underdeveloped and remote regions. Its difficult terrain and unsafe roads made

it a semi-autonomous area where local authorities held sway. Although the central government could collect taxes and appoint governors (Kargozars), their authority was generally unfelt in most parts of the province. The governor could not even enter *Arabestan* (a territory that was later renamed Khuzestan) without the permission of *Sheikh Khaz'al*, the head of Arab tribes, who had established his own domain at Mohammareh and ruled over Arab tribes from there. The local rulers had such a dominant hold over the land that the central government's granting of the D'Arcy concession to the oil seekers proved ineffective in granting any rights over Khuzestan's lands (Shafiee, 2018). Consequently, the newly formed APOC had to negotiate with Bakhtiari Khans and Arab Sheikhs and make separate agreements to lay pipelines from Bakhtiari lands at oil fields through Ahwaz and construct a refinery at Abadan (Shafiee, 2018).

Before the opening of the Karun River for commercial ship navigation in 1888, Khuzestan had minimal urbanization, with only two actual towns, Dezful and Shushtar, in the northern part of the province. After the river was opened, traditional urban centers gradually shifted towards the south, close to the river, leading to the rise of Mohammareh and Naseri (later Ahwaz). Ahwaz, which had a population of only 300 residents in 1882, grew into a town of 4,000 inhabitants by 1916. During the same period, Mohammareh's population grew from 3,000 to 12,000 residents (Lawless & Seccoble, 1993). Between 1939 and 1956, Ahwaz's population quadrupled again (Iranian Census Centre, 1956). Table 1 illustrates the population change in Khuzestan's cities from before the discovery of oil until 1956 and the significant events in each decade.

Table 1 Population of Khuzestan's cities (involved in the oil industry) in various periods. Source: (Ehsani, 2014, 374)

Period	1880s-1900	1910s	1920s	1930s	1940s	1956
Major events Local/national/international	Opening of Karun to commercial navigation	Constitutional Revolution, Establishment of Oil Industry, WWI	Consolidation of New Central Government, APOC Reorganization, Demise of Local Autonomy	New Oil Agreement, Great Depression; Beginning of Industrialization, Railroad and Roads, Forced Settlement of Tribes	WW2 and Occupation, Oil Nationalization Movement	Era of Consortium
Khuzestan	180000	N/A	410000	543000	N/A	143000
Ahwaz	300-1000	4000	10,000	30,000	N/A	120,000
Abadan	14,000	24,000	40,000-60,000	61,000	173,000	226,000
Masjed-Suleiman	Seasonal	1000	6,000-20,000		N/A	45,000
Mohammareh/Khorramshahr	3000-6000	10,000-16,000	20,000	20,000	N/A	19,000

The discovery of oil was the primary driving force behind the transformation of the urban system in Khuzestan. Small villages and towns quickly grew into dominant urban centers, while former centers of trade and administration, such as Shushtar and Dezful, gradually declined. The most significant urban development occurred in the refinery town of Abadan, where a sparsely inhabited marshy river island was transformed into a major urban center within three decades, becoming the third most populous city in the country at the time, with a population of over 60,000 and the world's largest refinery (Lawless & Seccoble, 1993).

The capital of Khuzestan was moved from Shushtar to Ahwaz in 1926, as Ahwaz had already become a major center for transportation and oil-related infrastructure. Its rapid development had begun earlier when it served as the headquarters for the pipeline and the central station for stores and workshops (Motaghedi, 2017). By the 1930s, Ahwaz had

become the region's primary distribution center for oil products (Mojtahedzadeh & Namavar, 2012).

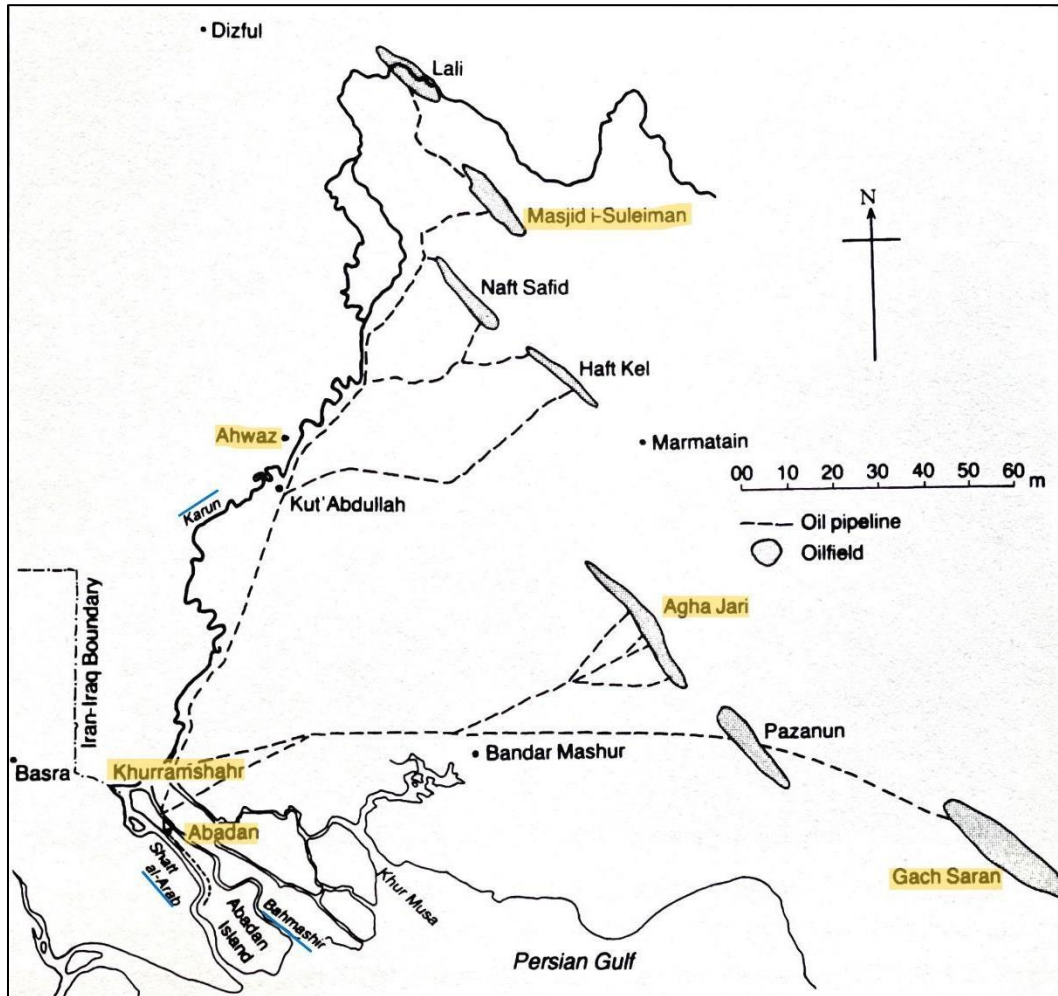


Figure 3 Location of Khuzestan's cities in relation to oil infrastructures in 1951. Source: (Ferrier, 1982)

The region historically known as Khuzistan, bordered by the Tigris, the Persian Gulf, and the Zagros Mountains, was known in classical sources by this name, with its history dating back to ancient civilizations like Elam. The name "Arabistan" began to be used during the Safavid era, from 1501, with Khuzistan reappearing in the 1920s. Both names have been points of contention, particularly highlighted during the Iran-Iraq war (1980-1988) and Arab and Persian nationalist discourses (Soucek, 1984).

The Safavid era marked a significant turning point with a more centralized state structure that integrated the region more firmly into the Persian empire. This period also saw the beginning of significant Arab migration into the region, primarily from the Arabian Peninsula, which converted to Shi'ism and recognized the authority of the Persian rulers, profoundly influencing its demographic and cultural composition. While centralizing power, the Safavids allowed for the Arabization of Khuzistan, acknowledging the shifting ethnic landscape by renaming it *Arabestan* and bestowing titles on local Arab rulers (Soucek, 1984).

In fact, the province's name was not a matter of dispute and discontent until the early 20th century, when nationalist sentiments centered around the ancient glory of pre-Islam Iran grew. In chapter five, I will further explore the meaning and consequences of such popular nationalist sentiments for the Arab residents of Khuzestan.

Ahwaz

Ahwaz is a crucial oil center and industrial, administrative, and agribusiness hub in Iran. Despite its importance, Ahwaz has been significantly under-researched, which makes it an ideal case study for this research. Ahwaz is a metropolitan area with a population of 1.3 million in southwest Iran. It serves as the political hub of Khuzestan province and hosts the largest oil fields in the country. There are more than 600 oil wells in the southeast, east, north, northeast, and northwest of Ahwaz. According to a 2010 survey conducted by the Iranian Ministry of Culture, the dominant languages spoken in Ahwaz are Persian (44.8%), Arabic (35.7%), and Lori/Bakhtiari (15.8%).

Although Ahwaz is an ancient city, it almost vanished by the early 20th century when oil was discovered in Khuzestan. At that time, due to constant warfare, Ahwaz had shrunk into a small village on the bank of the Karun River. The whole region of Khuzestan had lost its economic significance and prosperity, which it had enjoyed from the second to the fifteenth century (Soucek, 1984). In the 1880s, Ahwaz started to develop once again when the British Lynch Brothers firm opened the Karun River for steamship navigation, and a mule road was completed to connect Ahwaz to other Iranian cities, including Isfahan (Ehsani, 2014). Although Ahwaz began to grow, it was still a rather decaying village that was called Port Naseri. In 1907, Sr. Wilson, the British co-consulate in Khuzestan, described Ahwaz as follows:

Ahwaz is a collection of mean huts: Nasir the new town below the sinn or rapids is better built, mainly of stone dug from the ruins of what was once a great city dating from the days when one of several canals, drawing water from the Karun, irrigated vast areas on either side where now only sheep graze. (p:22)

Gradually, Ahwaz became a crucial center for the Khuzestan oil complex, with various oil infrastructures and transportation systems built in the area. The Anglo-Persian Oil Company (APOC) played a significant role in funding the development of Ahwaz, which led to the construction of modern institutions and buildings such as a textile factory, colleges, hospitals, movie theatres, high schools, and clubs. The population of Ahwaz grew rapidly from a small village of 300 inhabitants in 1882 to a town of 4,000 people in 1916 and then quadrupled again between 1939 and 1956 (Mojtahed-Zadeh & Namavar, 2012).

This rapid growth was an indicator of the physical dynamic of being part of the oil complex of Khuzestan. The ecological impact of the rapid growth of Ahwaz as a result of the oil complex has not been extensively studied, but there are some scattered accounts of its effects. For example, the construction of brick factories in the south and east of Ahwaz between 1910 and 1940 to respond to the growing demand for housing in the oil region led to soil contamination and damage, as well as the creation of marshy lands and deep puddles due to intense brick kiln activities (Mojtahed-Zadeh & Namavar, 2012). Today, many brick kilns are still in operation in Ahwaz and are responsible for a significant share of hydrocarbon pollution in the city (Ahwaz Master Plan, 2018).

The construction of the Low Camp in 1915 marked the beginning of urban plans in Ahwaz. This was initially a temporary settlement for Indian soldiers of the British army during WWI. Later, Khorram-Koushk, one of the earliest company neighborhoods in Ahwaz, was developed in 1926. Similar to Abadan and Masjed-Suleiman, Ahwaz neighborhoods were designed based on a racial and occupational hierarchy, with different types of housing for blue-collar workers (in Kut-Abdollah), staff, and high-ranking employees (in Khaz'alliyeh, later Khorram Kushk). In 1929, a transnational railway was built to connect Khuzestan with the capital, Tehran. Its final terminus in Khuzestan was built in Ahwaz, which influenced the city's development (Sarkhosh, 2018). In 1934, Bahman Karimi, an Iranian writer, described Ahwaz as follows:

Ahwaz is a big, yet filthy and impaired city. The only dignified street in Ahwaz is Pahlavi Street. On the other side of the Karun River are the railway station and "Qoshoun" (military barrack) which is as beautiful as

European barracks. They plan to construct a new town there. If so, Ahwaz will become a spectacular city. One or two bridges also are constructed on Karun River. Outside Ahwaz, there are many well-maintained gardens and excellent buildings (Khorram-Koush), which are now the Oil Company's administrative buildings. (Karimi, 1950: 59)

The development of military-related infrastructure on the west side of Karun was also closely tied to the oil industry. During the First and Second World Wars, the British military needed a strong presence in the area to protect the oil installations and facilities in the region. This led to the construction of military bases and barracks, which in turn attracted other supporting infrastructure, such as residential centers for military staff and their families. The oil industry and the military thus played a significant role in shaping the urban landscape of Ahwaz in the early 20th century. Lashkar-Abad (See figure 4) is one of the most famous examples of neighborhoods, constructed first for military-affiliated families but later became open to ordinary people to purchase (Mojtahedzadeh & Namavar, 2012).



Figure 4 Aerial picture of Lashkar-Abad, Source: Google Map

In the 1940s, oil company towns were built to house the growing number of workers employed by the oil industry in Ahwaz. Zeytoun Kargary was built for blue-collar workers, while Zeytoun Karmandi was built for clerical staff. The development of these company towns was part of a larger effort to provide adequate housing and infrastructure for the workers and their families. The New Site neighborhood (See Figure 5) was built in the northeast of Ahwaz after the nationalization of the oil industry in the 1950s. It was planned as a modern and well-equipped neighborhood with amenities such as schools, parks, and healthcare facilities (Mojtahedzadeh & Namavar, 2012). The development of New Site marked a shift in the urban landscape of Ahwaz as the city continued to grow and change in response to the oil industry and other economic and social factors.



Figure 5 New Site neighborhood, Ahwaz, 1950s, source: unknown

The parliament passed the oil nationalization bill proposed by the popular prime minister Mohammad Mosaddeq in March 1951, although it remained unfinished due to a CIA-backed coup d'état two years later on 19 August 1953. Nonetheless, it remained a crucial chapter in Iran's oil history and profoundly impacted the organization of the oil complex in Khuzestan. In 1953, one of the largest oilfields in Iran was discovered in Ahwaz, leading to the drilling of over 600 oil wells in the area. This resulted in significant urban development in Ahwaz and increased its importance in the oil complex of Khuzestan.

Iran's oil policy underwent a significant shift following the 1979 Islamic Revolution. With the departure of international oil companies and a decrease in foreign investment, Iranian oil production drastically declined due to labor strikes, disinvestment, and economic sanctions. This decline persisted and never reached its pre-revolution peak (Bill, 1989).

While the impact of these changes on the socio-natural structure of oil cities in Khuzestan, including Ahwaz, is unclear, the start of the Iran-Iraq war only a few years later compounded the challenges. Khuzestan was the epicenter of the war, and Ahwaz suffered greatly, being bombed 316 times and resulting in the displacement of many residents (See Figure 6). As a result, the city was left half-ruined (Mojtahedzadeh & Namavar, 2012).

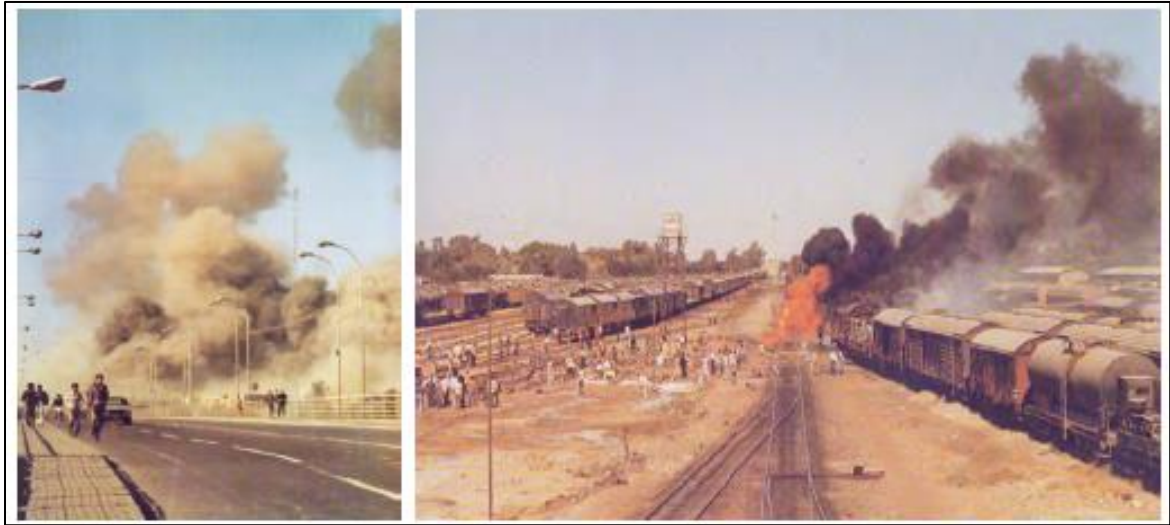


Figure 6 Airstrike in Ahwaz and Khorramshahr, 1980. Source: Mojtahedzadeh & Namavar, 2012

Various factors caused the expansion of slums in Ahwaz, and the Iran-Iraq war was one of them. In 2018, it was estimated that over 40% of the settlements within Ahwaz's boundaries were spontaneous slums (Ahwaz Master Plan, 2018). The formation of slums began in the 1950s when the rapid industrialization of Ahwaz attracted poor urban and rural populations to migrate. Later, Land Reform Distribution in the 1960s created another wave of landless farmers who moved to Ahwaz (Bahmani & Moltafet, 2020). The Iran-Iraq war was the next stage of slum formation.

Furthermore, drought, oil development, and agribusiness projects have recently driven poor villagers to migrate to Ahwaz and settle in the city's margins. Figure 7 shows the

location of these slums in 2011, and Figure 8 shows a few scenes from life in Ahwaz's informal settlements. Some of the Ahwaz slums are Zoviyyeh, Malashiyeh, Eyn do, Al-Safi, and Hasir Abad. According to the Master Plan, 2018, unemployment rates in slums are around 20% higher than the provincial average. Population density is also much higher than the city average, and the quality of housing and urban facilities is significantly low.

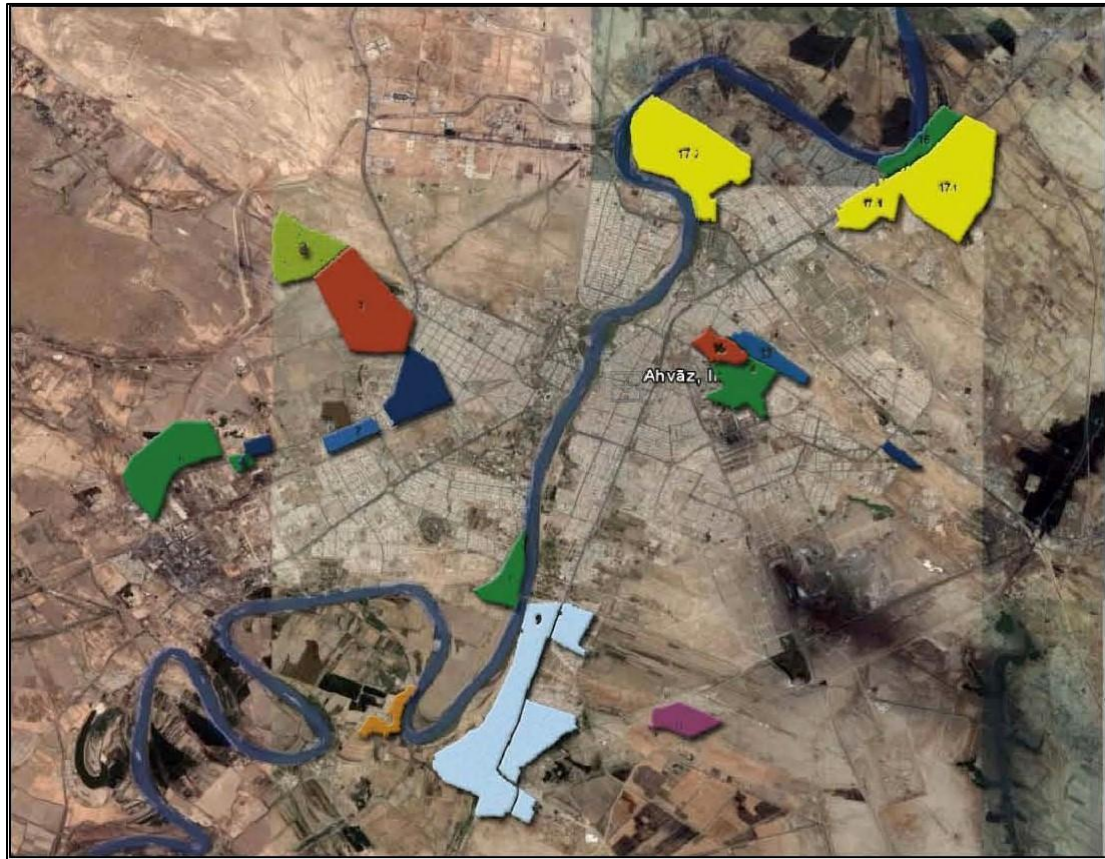


Figure 7 The Location of Ahwaz Slums, 2011, Master Plan



تصویر ۳۸- بازارهای مناطق حاشیهای



تصویر ۳۷- بازارهای مناطق حاشیهای



تصویر ۴۰- معضلات مناطق حاشیهای



تصویر ۳۹- معضلات مناطق حاشیهای

Figure 8 Living condition and social life in Ahwaz's informal settlements, Source: Mojtabedzadeh & Namavar, 2012

Following the war, Khuzestan and Ahwaz did not return to their pre-war state, which had attracted experts and skilled migrants from other provinces. Instead, Ahwaz experienced a high rate of out-migration, as reported by Iran's Urban and Architecture Research Centre in 2012, although its population grew constantly. Now, most in-migrant populations come from rural areas and small towns of Khuzestan.

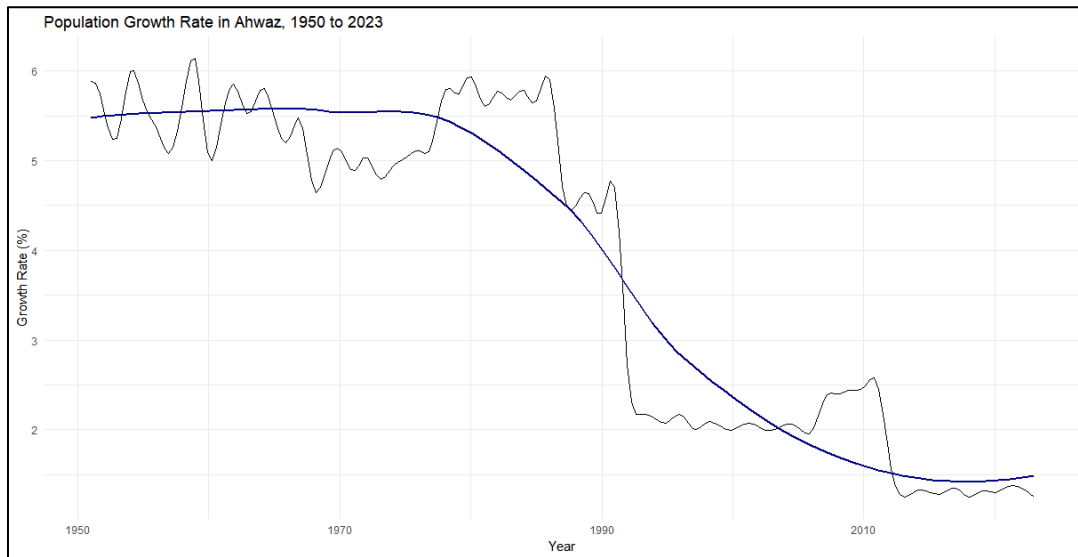


Figure 9 Ahwaz Rate of Population Growth 1940-2023, Source: The United Nations, The 2022 Revision of World Population Prospects

Ahwaz is currently one of Iran's worst cities, based on various social and environmental indicators. According to the World Health Organization (WHO), in 2011, Ahwaz had the poorest air quality of any city globally and regularly tops the charts of polluted cities in national rankings. The oil industry is the leading cause of air pollution, accounting for 82% of the pollution in Ahwaz and a significant source of heavy metals in the city's soils. The pipeline that runs through Ahwaz is also a source of air, water, and soil pollution, as well as a potential threat of hazardous explosions (Dastoorpoor et al., Goudarzi et al., 2015; Heidari-Farsani et al., 2013; Hosseini et al., 2017; Hosseini et al., 2009).

Throughout this dissertation, I will explore how the residents of Ahwaz cope with the significant pollution levels in their daily lives and at what cost. Additionally, I will examine how environmental degradation contributes to the production and reproduction of power

relationships in Ahwaz and in a greater region of the oil industry in Khuzestan, both historically and contemporary, and the direct and indirect role of the oil industry in the current situation.

Research Design and Methods

The Scope of the Study: Unbounded Geographies of Petroleum Urbanization³

This study does not confine itself to the formal boundaries of Ahwaz alone, as the oil industry's direct economic, social, and ecological impacts extend to a broader scale. Drawing on Lefebvrian theorization of space, the "planetary urbanization theory" developed by Neil Brenner and Christian Schmid (2011) argues that urbanization is no longer limited to cities and has become a boundless phenomenon. This means that urbanization now encompasses both "concentration" (consolidated urban areas) and "extension" (non-urban geographies), and the traditional focus of urban theory on processes of "concentration" has neglected wider spatial phenomena like oil fields and pipelines, which are also interconnected with these processes (Angelo and Wachsmuth 2015, Arboleda, 2016; Geroldi and Pessina, 2021; Couling 2021).

The ever-developing business of resource extraction is a driving force behind what Henri Lefebvre (1991 [1976]) referred to as *the explosion of space*, where the spatialities of resource extraction are inherent to the global urban condition (Arboleda, 2016). The petro-capitalist industry relies on a massive infrastructure network across the globe, such as pipelines, refineries, storages, oil wells, etc., which produce a "petroleumscape" (Hein,

³ More about this matter in Chapter Two.

2021). This network must be considered part of the urbanization process since the spaces of extraction are produced by the same logic that creates cities (Simpson, 2020).

Therefore, when discussing oil cities, it is important to avoid “methodological cityism” (Angelo & Wachsmuth, 2015), which overlooks the dynamics of urban agglomeration (Brenner & Schmid 2014). It is, therefore, essential to recognize that the production of the oil space is not solely dependent on the vast interconnected network of oil extraction, processing, production, distribution, and consumption. The natural environment, rural areas, agricultural lands, etc., are also involved in the process that creates the oil city.

In light of these insights, I have expanded the scope of this dissertation beyond the densely populated city of Ahwaz, adopting a broader geographical perspective that encompasses oil infrastructure, wetlands, rivers, and agricultural lands. Through this analysis, I aim to illustrate how the geographical expansion of the oil industry has led to the gradual erasure of boundaries between everyday living spaces and oil extraction spaces. This impact has been particularly challenging for marginalized communities living near oil fields and rural areas who must cope with the harmful consequences of the industry. These communities frequently confront displacement and are compelled to move to the outskirts of Ahwaz, where informal settlements are on the rise.

Data Collection and Analysis

This research is a qualitative study using document analyses and interviews to examine historical processes and the current state of social reproduction in Khuzestan and Ahwaz, focusing on the impact of environmental harms caused by the oil industry. To conduct this

study, I employed two complementary methods of data collection: in-depth interviews with Ahwaz residents (covered in Chapter Six) and archival research (discussed in Chapters Three, Four, and Five). Additionally, I utilized reports from international, governmental, and private institutions, news sources, and previous studies to enrich my analysis throughout the research process.

Interviews: The research involved interviews with 35 participants who were chosen through my initial connections in Ahwaz and the snowball technique. The interviews took place between September 2021 to January 2023. My previous work as an urban planner involved creating plans in Khuzestan and Ahwaz, which allowed me to establish connections. Additionally, I received assistance from friends and relatives residing in Ahwaz to initially locate participants. The selection process continued until data saturation and diversity were achieved. The participants were residents of Ahwaz for most of their lives, with six living outside the city at the time of the interview (four abroad and two in other Iranian cities). To ensure that the experiences of all groups were captured, I included participants from diverse ethnic, gender, and class backgrounds. Specifically, I sought out individuals living in informal settlements, neighborhoods located near pollution sources, and those residing in company towns to provide a basis for comparing different spatial experiences. The table below displays the number of participants in each gender and ethnic group. A more significant number of Arab participants were deliberately chosen as one of the main purposes of this dissertation, which is to examine ethnic relations in Khuzestan. The participants' occupations were varied, ranging from university professors and oil industry employees to unskilled and unemployed workers, with a particular focus on the

low-income segment of the population.

Table 2 Ethnic and gender of participants

Category	Sub-category	Number of participants	Total
Gender	Women	17	35
	Men	18	
Ethnicity	Arab	14	35
	Lor-Bakhtiari	7	
	Persian	10	
	Not specified/mixed	4	
Intersectionalities	Arab women	8	Women: 17
	Non-Arab women	9	
Total Participants		35	

I conducted interviews using various applications such as WhatsApp, Google Meet, and Zoom. We communicated via phone with one participant who lacked a reliable internet connection. The interviews were conducted between September 2021 and January 2023, and I stopped when new information was no longer being added. Each interview took between 1 and 1.5 hours, except for a five-hour conversation with a worker activist over three sessions and another three-hour interview with a journalist and environmental activist. Participants were compensated for their time.

The interviews followed a semi-structured interview guide, which provided a flexible framework for exploring participants' personal experiences of life and work in Ahwaz while ensuring that the research questions were addressed. Broadly speaking, the participants were requested to discuss a variety of topics, including their family background, means of supporting themselves, local communities and neighborhoods, instances of encountering environmental challenges, as well as their ethnic and gender

identity, and sentiments regarding the city, the petroleum industry, and their prospects for the future. During the interview, I encouraged participants to describe their experiences as fully and richly as possible. See the interview guide in Appendix A. Most interviews were recorded and transcribed, except those who did not consent to recording. Participants were given the opportunity to review their transcribed interviews, and a copy was provided upon request.

My approach to analyzing these interviews is partly narrative analysis and partly phenomenology. I focused on the stories people tell during interviews and how they make sense of their experiences and view the world through these stories. I paid attention to the structure, content, and meaning of narratives. This way, I tried to understand the lived experiences of participants living near oil infrastructures and their pollution to understand its essence from the perspective of those who have experienced it.

The study followed ethical guidelines set out by the Portland State University's research ethics committee. Participants were informed of the purpose of the study, and their consent was obtained before the interviews. The participants were also given the option to withdraw from the study at any point. The data collected was kept confidential and used only for research purposes. Most participants requested that their real names not be revealed; therefore, I chose pseudonyms, except for those who consented.

Archival research: I used archival research to provide a broader context for the study, utilizing a variety of digital archives accessible online. The archival resources included the British Petroleum Archive, Indian Office Records, National Library and Archive of Iran,

official reports, newspapers and magazines, oral history records, and diaries. The list of these resources can be found in the bibliography section. The archives used were a mix of publicly accessible sites (like the Indian Office Records and National Iran archives) and restricted ones, where access to scanned documents was obtained through intermediaries, such as the British Petroleum Archive, and those that I purchased from the archive holders (such as a number of issues of The A.P.O.C [Anglo-Persian Oil Company] Magazine and The NAFT A.P.O.C. Magazine from the University of Strathclyde). Additionally, quotations from existing studies were used (with proper citation) to support the research. Oral history records and diaries, like those of Yusof Eftekhari, Sir Wilson, and others, were available in book format, published either by the narrators themselves (like Wilson) or compiled by researchers. In addition, I used a variety of digitized newspapers and magazine archives, such as Abadan Today (English), Bakhtar Emrooz (Farsi), Rahbar (Farsi), Mardom (Farsi), Akhbar Hafteh (Farsi), The Times (English), Evening Star (English), and New York Times (English).

Analysis: The transcriptions and archival documents were separately coded and re-coded in Atlas.ti software to categorize key themes and identify emerging themes, which I then reviewed for consistency and accuracy to draw connections and conclusions. During the analysis process, I initially created a coding framework that was built based on the literature and focused on research questions. As I progressed, I added inductive codes to ensure all aspects related to the dissertation topic were covered. As I developed the code system and themes, I constantly reviewed and adjusted the coding process by reading the data, re-reading coded segments, and renaming and re-ordering codes. The more data I coded, the

more stable the code system became. As I continued to code more data, I periodically stopped to review the code list and ensure the coding framework was stable. For instance, one strategy I used to refine the coding framework was to merge two or three codes that belonged to the same theme or category if the code list became too long and not many instances were assigned to each code. Also, if a code became too broad, indicating it had been applied to too many instances, I reviewed and split it into subcodes. This helped to simplify the code system and make it easier to manage. The following figure demonstrates the final code systems I used for theme analysis of transcribed interviews and archival documents. Coding examples can be found in Appendix B.

	Name	Grounded	Density	Groups
<input type="radio"/>	◇ air pollution/industrial	<div></div>	50	0 [Environment]
<input type="radio"/>	◇ despairs	<div></div>	75	0 [Affection]
<input type="radio"/>	◇ dust	<div></div>	62	0 [Environment]
<input type="radio"/>	◇ environmental issues	<div></div>	84	0 [Environment]
<input type="radio"/>	◇ ethnics~	<div></div>	141	0 [Social Relationships]
<input type="radio"/>	◇ health	<div></div>	70	0 [Environment]
<input type="radio"/>	◇ hiring practice	<div></div>	66	0 [Labor]
<input type="radio"/>	◇ hopes	<div></div>	87	0 [Affection]
<input type="radio"/>	◇ in-migration~	<div></div>	82	0 [Migration]
<input type="radio"/>	◇ labor condition~	<div></div>	116	0 [Labor]
<input type="radio"/>	◇ neighborhoods~	<div></div>	128	0 [Built Environment]
<input type="radio"/>	◇ oil infrastructure~	<div></div>	53	0 [Built Environment]
<input type="radio"/>	◇ out-migration	<div></div>	56	0 [Migration]
<input type="radio"/>	◇ safety	<div></div>	45	0 [Built Environment]
<input type="radio"/>	◇ water	<div></div>	69	0 [Environment]
<input type="radio"/>	◇ women condition~	<div></div>	77	0 [Social Relationships]

Figure 10 Atlas.ti Coding system for analyzing interview transcriptions (as of August 2023)

Search Entities				
	Name	Grounded	Density	Groups
○	◇ cities-network	<div><div></div></div>	13	0 [Built environment]
●	◇ environmental issues	<div><div></div></div>	25	0 [Environment]
●	◇ health	<div><div></div></div>	64	0 [Environment]
○	◇ infrastructures	<div><div></div></div>	43	0 [Built environment]
●	◇ in-migration	<div><div></div></div>	31	0 [Migration]
●	◇ labor force living condition~	<div><div></div></div>	17	0 [Labor]
○	◇ Mega projects	<div><div></div></div>	23	0 [Infrastructures]
●	◇ neighborhoods	<div><div></div></div>	95	0 [Built environment]
●	◇ occupational hazards and incidents	<div><div></div></div>	22	0 [Labor]
●	◇ oil labor struggles~	<div><div></div></div>	80	0 [Labor]
●	◇ out-migration~	<div><div></div></div>	18	0 [Migration]
●	◇ property	<div><div></div></div>	50	0 [Infrastructures]
●	◇ racial relationships~	<div><div></div></div>	102	0 [Race]
●	◇ urban facilities	<div><div></div></div>	40	0 [Built environment]
●	◇ Violence, conflicts, encounters	<div><div></div></div>	48	0 [Race]
●	◇ women condition~	<div><div></div></div>	49	0 [Wmen]

Figure 11 Atlas.ti Coding system for analyzing archival documents (as of August 2023)

Limitations of the research

One limitation of the study was my inability to physically travel to Ahwaz due to the recent political unrest in Iran, which, because of safety concerns, limited traveling to Iran from September 2022 onward. While I have traveled to Ahwaz several times in the past, not being able to go for this study specifically limited the data I was able to gather and my ability to observe in person. The political situation and increasing state surveillance may also have impacted the safety of participants and their willingness to participate in the study. After the start of the political movement, fewer individuals expressed their interest in participating in the study. They were less trusting than before, considering that Ahwaz was always a city with strong policing and security politics and a high number of political prisoners.

I conducted interviews through online channels, which could be a drawback of this

research. In-person interviews might have yielded more precise information as people usually feel safer sharing their experiences when they can sit down with the interviewer and make eye contact with them. Additionally, face-to-face interviews would have allowed me to pick up on nonverbal cues and other contextual factors that may not be apparent in online interviews. On the other hand, online interviews are a better option for those who have security concerns. For example, I interviewed political activists who would not have been up for an interview if it required them to be physically available.

Another research limitation was the lack of access to archival sources from the British Petroleum Archive. This may have restricted the ability to examine the research's historical context and limited the depth of the research analysis. At the same time, it turned my attention to Iranian archives and oral histories, which allowed me to avoid Eurocentrism and echoing the bias of colonial interpretation of events that overshadows many archival practices today (Gordon, 2014; Boyes, 2019).

Finally, my own positionality regarding ethnic tension in Khuzestan was a limitation. As a person from the Lor ethnicity conducting a study on marginalized Arab populations, I acknowledge the potential language barriers that could impact the research process and outcomes. Some of the Arab participants, specifically those who are poor and older in age, had some challenges in communicating their experiences, as Farsi is not their mother tongue, and they were not comfortable speaking Farsi. Historical and socio-political tensions between Persians and Arabs also probably affected the participants' willingness to trust and engage with me as a researcher. I received feedback from one of the participants

who recommended that I introduce myself as Lor before conducting interviews so Arab participants would trust me more , knowing that I wasn't Persian. It highlighted the level of mistrust between these ethnic groups. I have incorporated this approach in the interviews that followed this advice and gained better results. Overall, I recognize the importance of being transparent about my positionality and biases as a researcher from a specific ethnic group. I tried to navigate these complexities sensitively and respectfully throughout the research process.

Chapter Two: Literature Review and Theoretical Framework

In this chapter, the literature foundational to understanding the intersections of the oil and petrochemical industries with urbanization, geography, colonialism, and domestic colonialism will be reviewed. This exploration aims to synthesize these thematic areas with the emergent perspective of urban political ecology and its focus on social reproduction. The integration of these theoretical frameworks and analyses is critical for navigating the subject of this dissertation and addressing my research questions.

Oil Cities: The Dual Realities of Living with Oil

The exploration, extraction, and transportation of oil often necessitate the establishment of residential camps to accommodate workers, managers, and engineers. In some cases, these camps evolve into fully-fledged towns, while in others, they may decline or disappear as oil resources deplete. Throughout this process, oil also transforms the natural environment within a specific social, economic, and political framework. It gives rise to an urban landscape that is characterized by uneven distribution of hazardous and pollution.

The term "oil city" is commonly utilized in the oil literature, particularly in the context of the Global South. It is often used interchangeably with phrases such as "urban built environment of oil," "oil boomtowns," "oil towns," and "petro-city." The concept of an oil city encompasses two crucial elements: the oil industry's role as a socio-political actor and the urban landscape as an analytical framework (Bet-Shlimon, 2019). Oil towns are an integral part of the oil industry's infrastructure network, much like refineries, pipelines, and oil rigs. As Fuccaro (2021) suggests, they serve as exceptions to the invisibility of oil and

provide insight into the diverse history of oil.

The urban landscapes associated with oil exploration exhibit remarkable diversity in terms of their geographical locations and the supporting infrastructure they rely on (Fuccaro, 2021). These areas can be near extraction sites, pipelines, refineries, and petrochemical factories. Some oil towns are strategically built around ports, which serve as vital nodes for trans-ocean oil transportation. Oil cities have played a central role in the extensive industrial conurbations that sustain oil extraction infrastructure. Since the initial discovery of oil in Iran, these towns have been instrumental in shaping the new geographies of petroleum refinement and transport, which in turn have had profound implications for local, regional, and global geopolitics (Fuccaro, 2021).

Oil cities often served as urban "hinges" that brought together diverse groups of people, often characterized by spatial and social segregation (Fuccaro, 2021). These cities emerged as powerful symbols of collective memory and shared experiences, embodying models of modern urban life. Besides internal migration, people from various countries and regions, including India, Europe, the United States, and other parts of the world, were drawn to oil cities in the Middle East, resulting in unprecedented population mobility. Skilled and unskilled workers flocked to these cities, fostering a dynamic and cosmopolitan environment transcending traditional boundaries.

Early oil towns were primarily characterized as company towns, where the concept of social engineering through urban planning aimed to create a more productive working class (Vergara et al., 2011). This prevalent practice spanned the 19th and 20th centuries and

played a significant role in expanding national economies by supporting extractive industries in sparsely populated regions. As a result, these company towns brought more land, natural resources, and people under the control of corporations.

In the 20th century, multinational companies from the Global North extended their influence by exporting ideas about work discipline, race, and gender to other parts of the world as they established company towns in extraction geographies (Vergara et al., 2011). While these companies shaped social relations in these towns through various means such as education, welfare, and leisure programs, it is important to recognize that working-class communities actively reshaped and adapted these programs to meet their own specific needs and aspirations. Thus, there was an interplay between the companies' influence and the working-class communities' agency in shaping the social fabric of these company towns.

Company towns can be seen as urban environments that function as factories for the reproduction of the labor force (Ehsani, 2003). In the context of the Middle East, early oil cities were established as company towns by transnational oil companies, which implemented a hierarchical model of urban development wherever they operated. This model aimed to maintain spatial isolation, foster internal stratification, and incite tensions based on race, ethnicity, and social class among the employees, serving as a strategy for labor control employed by these oil companies (Ehsani, 2018). Colonial oil companies, through producing the urban environment and distributing infrastructures, pollution, and wastes, aimed to control the social reproduction of residents.

The emergence of oil towns in the Middle East marked a significant departure from the existing towns and cities in the region (Fuccaro, 2021). These emerging oil towns represented radical shifts from the urban past, evolving into transnational enclaves that mirrored the global influence of the controlling companies. In contrast to the architectural traditions of the nearby historical cities, the oil towns in the Middle East were intentionally designed to resemble British and American suburbs, drawing inspiration from the concept of the garden city (Ehsani, 2014). This deliberate urban design not only transformed the physical landscape but also brought about a rupture in the traditional lifestyle of the local population.

Several geographers and historians have devoted their attention to critically analyzing the spatial and symbolic dimensions of oil capitalism (e.g., Crinson, 1997; Salas, 2009; Alissa, 2012; Ehsani, 2014; al-Nakib, 2014; Bet-Shlimon, 2019; Fuccaro, 2013). These scholarly works primarily explore the socio-spatial features of oil company towns and the unique lifestyles that emerged within them. By studying these contexts, researchers aim to uncover the complex relationships between oil extraction, urban development, and the social fabric of these communities (Mortaheb, 2020).

Arbella Bet-Shlimon's "The Politics and Ideology of Urban Development in Iraq's Oil City" (2013) investigates the impact of oil's political and social dimensions on the trajectory of urban development in Kirkuk before the 1958 revolution. Bet-Shlimon analyzes how oil's properties influenced the shaping of the city's urban landscape. She argues that the oil industry's resource superiority allowed the Iraq Petroleum Company (IPC) to lead in

developing housing, water, and infrastructure, surpassing the local municipality's efforts.

Farah al-Nakib's "Kuwait's Modern Spectacle" (2013) uncovers the paradoxes of oil-driven modernization in Kuwait from 1950 until the Iraqi invasion of 1990. Al-Nakib explores the contradictions between ambitious state-run mega-urban projects and the everyday urban experiences of Kuwait's capital city. The modernist urban planning and development from the mid-20th century prioritized functional zoning and suburban expansion at the expense of the city's historic communal and diverse nature. Al-Nakib argues that this shift has resulted in increased social tensions and a detachment from the communal responsibilities that once characterized Kuwaiti society. She suggests that reconnecting with the integrative and diverse aspects of Kuwait's pre-oil urban life is key to resolving current social challenges and revitalizing Kuwait's urban identity.

Nelida Fuccaro's work "Shaping the Urban Life of Oil in Bahrain" (2013) provides a micro-level analysis of the social and cultural consequences of Bahrain's oil boom. Fuccaro highlights oil company towns as harbingers of new leisure and consumer culture, demonstrating how emerging forms of public communication, including independent and government-controlled press and cinema, as well as oil propaganda practices, shaped influential models of urban and suburban life embraced by both expatriates and Bahraini citizens.

Miguel Tinker Salas's book "The Enduring Legacy" (2009) explains how oil camps in Venezuela served as social and cultural laboratories, introducing new models of work, social life, consumerism, leisure, and citizenship. Salas explores the architectural design of

company towns, showing how it was utilized to reinforce social divisions based on race and occupation. Reem Alissa's study "Building for Oil" (2012) examines the transformative role of oil in Kuwait's political, social, and cultural landscape, particularly in shaping everyday urban life. Alissa argues that company towns, along with other actors, played a crucial role in fostering urban modernity in Kuwait. She explores the planning and architectural practices of the British oil company, which mirrored racial ideologies and economic hierarchies. She showcases how socio-spatial engineering introduced new family and neighborhood life models for Kuwaiti employees. These studies show the similarities between oil urbanization in colonized territories. All these cases share the emphasis of urban planning on racial and occupational segregation.

Beyond company towns, another distinct spatial dimension exists shaped by the presence of oil. These spaces emerge organically within preexisting human habitats, enveloping the oil industry's spatial realm. These areas often attract the impoverished segments of the working class or/and serve as living spaces for surplus labor awaiting employment opportunities. These spaces are characterized by various forms of violence, including dispossession, ecological destruction, and environmental pollution.

Communities residing in or adjacent to oil concessions bear the brunt of the unequal burden of pollution and violence associated with extractive activities while reaping few benefits from the wealth generated. Dissenting voices are often silenced through the pervasive use of threats, patronage networks, and corporate compensation. This perpetuates a cycle of marginalization and powerlessness (Reed, 2009).

Oil production, particularly in the Global South but not exclusive to it, has been a catalyst for the production of *suffering* among marginalized populations (Auyero and Swistun, 2009). The poor in these regions are disproportionately affected, facing heightened risks of violence and health issues and enduring rather than thriving under the influence of oil capitalism. Their everyday lives are inevitably intertwined with the presence of toxins, as cohabiting with such hazards has become an inescapable reality (Davis, 2018).

These communities' existence and well-being are deeply intertwined with the dynamics of oil money and politics, with urban services reflecting this reality (Valdivia, 2018). In the case of Lake Maracaibo in Venezuela, a prolonged disaster unfolded during the 1920s and 1930s. Indigenous communities living in the vicinity were subjected to polluted water, deadly fires, and numerous oil-related accidents, leaving a lasting impact on their lives and surroundings (Oritz, 2020).

Kristin Reed's research on the oil industry in Angola delves into the intricate dynamics of state-corporate resource control strategies, such as concession contracts, military campaigns, and corporate compensation. Through her analysis, she reveals that these strategies emerge from specific convergences of violence, exclusion, and environmental degradation (Reed, 2009: 2). By examining the local context near extraction areas, Reed uncovers the profound impacts on traditional livelihoods and the environment. She demonstrates how establishing oil enclaves reinforces exclusionary practices, effectively shutting out local populations from accessing economic and ecological sustenance. Despite the concentrated benefits reaped within these enclaves, the externalities extend beyond

their boundaries. Environmental degradation, political repression, and military interventions permeate surrounding areas, exacerbating the socio-ecological challenges faced by marginalized communities.

For Reed, the boundaries of oil city are limited to the planned enclave that was designed to reside the oil employees in which the benefits are distributed. In this perspective, marginalized geographies are not viewed as an internal and indispensable part of the enclaved oil city; instead, they are places that are negatively “impacted” by oil development. This view is bound to the limitations of “cityisms” that come up short in shedding light on the production of subaltern populations and their geographies as an internal to the process of oil urban development.

Despite this criticism, Reed's work sheds light on the intricate interplay between power, resource extraction, and social and ecological consequences, prompting critical reflections on the complexities of oil-driven development and the imperative of addressing its exclusionary and harmful effects. moreover, residing in close proximity to oil facilities has a significant impact on individuals' sense of place (Davis, 2018). The environmental consequences associated with living near oil can manifest as what Nixon (2011) calls "slow violence." This form of harm occurs gradually and out of immediate sight, making it easy for its destructive impact to go unnoticed across time and space. As a result, the most severe ramifications are often not recognized as harm at all.

Living in the vicinity of toxic materials present in oil infrastructure often intersects with racial and ethnic dynamics. Many instances reveal that communities residing near oil

infrastructure tend to be racialized communities. This phenomenon has been described in scholarly literature as "petrochemical colonialism" (Bullard, 1993), "toxic imperialism" (Walker, 2012), "necropolises" (Davis, 2018), and "environmental sacrifice zones," where the negligent behavior of the oil industry and government authorities may be perceived as tolerable and acceptable (Hein & Lessoff, 2021).

Clyde Woods (2008) shows that the energy sector plays a crucial role in perpetuating ecological and economic vulnerability through a process he refers to as "asset stripping." Woods highlights how the oil and gas industry has contributed to the degradation of public assets such as health, fisheries, waterways, air quality, and wetlands in Louisiana. As a result, this has made the Black community in New Orleans particularly vulnerable to the devastating impacts of events like Hurricane Katrina. Therefore, the exploitation of natural resources and the associated environmental degradation have disproportionately affected marginalized communities, exacerbating their susceptibility to environmental disasters and further perpetuating social and economic inequalities.

Despite enduring its toxicity, oil simultaneously serves as a source of sustenance and security for those who rely on it (Valdivia, 2018). Valdivia examines the desires, struggles, and commitments that shape the everyday life of Esmeraldas, which may seem peripheral to the formal circulation of oil but are integral to the enactment of hydrocarbon capital.

Through ethnographic research, Valdivia (2018) presents a broader perspective on environmental justice that extends beyond contamination events and toxic exposures. Valdivia (2020) focuses on the affective and intimate stories of workers and residents in

Esmeraldas, providing insights into the undertheorized aspects of oil flow operations. This includes examining the emotional attachments workers develop towards the catalytic units they have cared for over the years, their sense of obligation to keep operations running despite political pressures to close the complex, and how other forces in their lives occupy their political existence and diminish the potential for resistance.

The residents of Esmeraldas, who are often marginalized and targeted as objects of improvement or sacrifices for capital accumulation, do not solely define their lives based on victimhood. Their stories transcend the confines of toxicity, revealing their affective connections with the petro-city—the place where they reside, love, and create families. These narratives go beyond the politics of confusion, refusal, and recognition of harm (Valdivia, 2018).

Understanding the Spatiality of Oil

When examining the field of oil sociology, many scholars recognize its multidimensional nature, encompassing a range of scales, geopolitics, and geographies. Oil is intertwined with local and global contexts, as well as material and social aspects, and all these dimensions are interconnected. Attempting to separate the spaces of oil consumption from those of production would oversimplify the subject intellectually and pose methodological challenges. On the other hand, the extensive range of agents and actors contributed to creating a socio-spatial arrangement of oil highlights the complexity of analyzing the oil industry. The multitude of actors, infrastructures, processes, and conceptualizations involved in the oil assemblage can be overwhelming and can lead to a sense of "intellectual vertigo" (Appel et al., 2015: 9). It is indeed impractical to address all these aspects within a

single framework. However, it is crucial to recognize that while the oil assemblage has a global scope, its specific manifestations are inherently tied to particular places. Oil is inherently place-specific, always situated within a specific time and space, and embedded within a localized political economy (Watts, 2012). Consequently, the contributing agents and factors within the oil assemblage differ from one place to another.

The term "oil assemblage" is commonly used in scholarly literature, but its definition varies depending on the influential and significant agents identified by different scholars. According to Michael Watts (2021), the oil assemblage encompasses diverse actors, including commodity trading houses, state actors, investment banks, engineering and service companies, shipping, refining, logistics, state and private security forces, and various forms of surveillance. The oil assemblage also includes actors that may not initially appear relevant to oil, such as oilfield insurgents, militias, local artisanal refiners, criminal organizations, trade unions, non-governmental organizations, advocacy organizations (both local and global), multilateral development institutions, development assistance agencies, and transnational regulatory institutions (Watts, 2021).

Carola Hein (2021) raises criticism against the concept of oil assemblage, claiming that it fails to adequately address the design and representation of actual buildings, cities, and landscapes. I argue, however, that the term oil assemblage is not rigid but rather adaptable, allowing for the inclusion of spatial factors when necessary for analysis. Recognizing the interconnectedness of various agents and factors operating at different scales is essential. For instance, Hannah Apple et al.'s definition of the term incorporates more spatial

dimensions. They describe the oil assemblage as a "worldwide network of lines, axes, hubs, spokes, nodes, points, blocks, and flows" (Appel et al., 2015, cited in Simpson, 2020).

The concept of oil assemblage can also be attributed to the network-actor theory proposed by Deleuze and Guattari (1988) (Ehsani, 2014). This theory challenges the prevailing notion of a natural progression in the evolutionary history of the capitalist industrial order. Kaveh Ehsani (2014) contrasts "assemblage" with "emergence" to examine the history of oil as a result of intentional and sometimes accidental acts of human construction. This history is characterized by friction, uncertainty, and grounded in praxis. Social and historical encounters between the material world and the actions of diverse and unequal social actors primarily shape the history of oil. These actors make calculated decisions that may not be easily categorized as "rational" or predictable. The success or failure of these decisions is determined by the balance of power relations under specific circumstances (Ehsani, 2014).

In oil literature, the terms "oil complex" and "oil assemblage" are used interchangeably (e.g., Huber, 2021). The concept of a commodity complex originated from Harriet Friedmann's work, where she used it to distinguish between networks of social and political-economic relations surrounding the provision of specific and strategically significant food commodities. Examples include the "wheat complex," "durable food complex," and "meat complex." Although Friedmann did not specifically focus on the "oil complex," one can observe a similar formation of social, political, and economic networks revolving around oil.

Carola Hein offers an alternative to Watts' concept of the oil assemblage by proposing the term "Petroleumscape." According to Hein, this term captures not only the social implications but also the infrastructural and spatial dimensions associated with petroleum. She criticizes the existing oil literature for neglecting spatial analysis as if oil were a mystical substance fueling economies without leaving a spatial imprint. Hein asserts that petroleum, as a physical material, has a pervasive influence on physical spaces such as architecture, cities, landscapes, and more. She emphasizes the need to recognize and study the profound impact of petroleum on the built environment.

The concept of Petroleumscape, therefore, refers to a layered physical and social landscape that evolves over time through human activities. It connects urban and rural spaces, culture, and nature, as well as tangible materials and intangible practices. Various spatial manifestations of oil, such as refineries, storage sites, office buildings, and gas stations, are interconnected through their association with this singular commodity and its associated industrial actors. Despite each component of the layered landscape serving different functions, being located in distinct places, and possessing diverse characteristics, scales, forms, and topologies, they ultimately form parts of a unified spatial system. In essence, the concept of Petroleumscape provides a conceptual tool for discussing the role of space as an active agent and the ways in which people inhabit the built environment shaped by petroleum.

Although the concept of the "petroleumscape" is useful for understanding the local and global dynamics of the oil industry, Hein's emphasis on its "globality" can lead to a loss of

analytical precision and oversimplification. Hein argues for the existence of a singular, all-encompassing "petroleumscape" that incorporates multiple layers and aspects, aiming to transcend segmented, mono-disciplinary, and localized approaches to petroleum spaces. While it is true that petroleum dynamics are largely influenced by global forces, focusing on the global scale limits our ability to examine specific agents and actors who interact with the petroleumscape in diverse ways. These interactions are shaped by local and regional ecological, political, and economic factors that significantly vary within the industry.

For example, as an illustration, the portrayal of the "industrial" petroleumscape as a "standardized and uniform landscape" does not accurately reflect reality. Petroleum infrastructures are shaped by the specific material properties of the extracted oil, which vary from place to place. The regional and national political economy surrounding oil extraction determines operational standards, including technology usage, safety measures, acceptable contamination levels, etc. This fallacy is valid for the "ancillary" petroleumscape as well, which, in Hein's conceptualization, consists of various structures indirectly related but necessary for the functioning of the petroleum industry, such as streets, housing, and leisure facilities, which "serve as a means of branding." I argue that this is not the case in all contexts. For instance, in post-World War I Khuzestan, the construction of hospitals and investment in education by the Anglo-Persian Oil Company were responses to prevailing discontent, epidemic diseases, and the emergence of social issues at that specific time, not merely for branding.

Conversely, in the late 20th and early 21st centuries, transnational oil companies operating in the Niger Delta, for instance, have not invested significantly in such areas. Similarly, the Iranian National Oil Company does not provide healthcare and educational facilities in its modern-day oil towns like Asaluyeh in southern Iran. In general, I argue the petroleumscape, while having global dimensions, encompasses significant temporal and spatial variations, resulting in a heterogeneous rather than homogeneous landscape.

Another concept that potentially promotes the perception of petroleum as an interconnected socio-spatial system is "planetary urbanization." Many scholars writing about oil and gas spaces within the urban political ecology refer to "planetary urbanization" (e.g., Simpson, 2020; Geroldi and Pessina, 2021; Couling, 2021). Neil Brenner and Christian Schmid (2011) developed the concept of planetary urbanization. In essence, this concept offers an alternative understanding of what is traditionally viewed as "urban" and encourages us to recognize broader connections and linkages that facilitate the process of urbanization. Brenner and Schmid propose that spaces typically seen as the "non-urban realm," including natural parks, oceans, deserts, and atmosphere, as well as oil fields, pipelines, petrochemical plants, and so on, are all part of "the worldwide urban fabric" (Geroldi and Pessina, 2021).

Therefore, all spaces of oil extraction, even though located in remote areas, are considered urbanized areas, as much as the sites of consumers (cities) are. Brenner stresses that urbanization contains both "concentration" and "extension," and while the urban theory has focused on processes of "concentration," it has ignored the broader areas and sites that

support these processes, such as oil production sites or power stations (Geroldi and Pessina, 2021; Couling 2021).

Simpson (2020) integrates planetary urbanization theory with postcolonial, dependency, and world system theories, all of which highlight the interconnectedness and mutual constitution of various spaces within the global capitalist economy through resource extraction and exchange. However, unlike the latter theories, which focus on analyzing the unequal "core-periphery" relationship between extraction sites and consumption sites, proponents of planetary urbanization theory avoid such dichotomies. Instead, they argue that the spaces of extraction are generated by the same underlying logic that has produced cities (Simpson, 2020).

While the concept of planetary urbanization helps understand the interconnected nature of seemingly disparate spaces, it still operates within a dichotomous framework where extraction and consumption sites are geographically separate, although interconnected dialectically. In this study, I intentionally avoid such a dichotomy and argue that cases where the geography of oil exploration aligns with an urbanized geography are not exceptional occurrences. This is observed both in the Global North and South, necessitating a more nuanced theoretical analysis.

With that criticism in mind, In this research, I have employed the concept of planetary urbanization to establish the scope of my study, which extends beyond the confines of the municipality of Ahwaz. It encompasses larger areas that, in conjunction with the dense and populated urban region, constitute the socio-environmental hinterland of oil production in

Ahwaz. In this approach, I am aware of and avoid the tendency of the concept of planetary urbanization to generalize urban experiences across different contexts that can neglect the nuances of how different populations, particularly marginalized groups, experience the city (Roy, 2016; Peake, 2020; Robinson & Roy, 2016).

Petro-Racial Capitalism and Petro-Colonialism

From the late 19th century, the history of oil transformed into a globally interconnected capitalist enterprise (Ortiz, 2021). This marked the emergence of a specific form of capitalism known as *Petro-capitalism*, characterized by the production, exchange, and consumption of petroleum (Behrends, Reyna, Schlee 2011). Petro-capitalism encompasses a broad globalized economy where oil and gas are crucial sources of energy, industrial products, and profits. It is intertwined with a geopolitical landscape in which the control and distribution of oil resources hold paramount importance (Rogers et al., 2013).

Since the 1940s, petroleum has emerged as the primary energy source within the framework of late capitalism. The dominance of oil capitalism has had significant implications for class struggle and has eroded the previously acquired rights of the working class (Mitchell, 2013). The production process of oil is characterized by a high organic composition of capital⁴, which entails a substantial reliance on machinery and equipment

⁴ The "organic composition of capital" is a concept by Marx describing the ratio between constant capital (investment in materials and machinery) and variable capital (labor costs) in production. It contrasts with "technical composition," which focuses on the physical quantities of labor and materials, without considering their value. A higher organic composition indicates a capital-intensive setup, often leading to lower profit rates since less labor is used relative to the capital invested. This ratio is crucial in understanding economic dynamics within capitalism, particularly how changes in production technology can impact profitability ("Glossary of Terms: Organic Composition of Capital," n.d.).

rather than direct labor. This configuration gives rise to various implications and contradictions. One fundamental implication of this high organic composition is that, despite generating substantial wealth for oil-producing nations, the industry offers limited employment opportunities (Aborisade, 2010).

The rise of this regime marked a significant political decline for labor within the core capitalist economies (Mitchell, 2013). The accumulation of wealth driven by oil resulted in a notable separation between the majority of workers and the energy production sites, which had become increasingly capital-intensive compared to previous eras. This new divide undermined the effectiveness of tactics like sabotage, previously employed by workers in coal-related industries, as a means to achieve political advancements (Mitchell, 2013). Additionally, due to its influence on transportation and food expenses, oil became a prominent factor in regulating the price of labor (Ortiz, 2020).

Petro-capitalism brings into sharp focus the inherent violence associated with oil-driven development. It explicitly highlights the interconnectedness between extraction and various forms of authoritarian governance, militarization, exclusion, and displacement (Kennedy, 2014). While capitalism itself is a system prone to violence, marked by exploitative and conflict-ridden class relationships, petro-capitalism exacerbates these contradictions, conflicts, and instances of violence even further (Aborisade, 2010).

Diverse spaces exist within the landscapes shaped by hydrocarbon activities, such as colonial concessions, enclaves, and ethnic communities. Each of these spaces is characterized by distinct political scales, which can vary in their coherence, stability, and

potential for violence (Kennedy, 2014). This is due to the fact that the profits generated by the oil industry are built upon a foundation of unpaid costs, primarily in the form of ecological harm left in its wake. The indigenous and impoverished communities often bear the brunt of these costs. Foreign companies, often with the support of local governments and the bourgeoisie, accumulate wealth while leaving behind landscapes scarred by waste and destruction (Ortiz, 2020).

Consequently, communities residing in or near oil concessions bear a disproportionate share of the pollution and violence that accompany extractive operations while reaping minimal benefits from the generated wealth. The creation of such an unequal landscape often involves a significant amount of violence. Dissenting voices are suppressed through threats of violence, patronage networks, and corporate compensations aimed at silencing opposition (Reed, 2009). As described by Bridge (2009), "One group's natural resource can be another's dispossession" (quoted in Simpson, 2019).

Petro-capitalism operates within the larger framework of *racial capitalism*, where the exploitation of racialized groups and the accumulation of capital are intricately linked and mutually reinforcing. This notion, explained by Cedric Robinson, argues that the development and expansion of capitalist societies have inherently followed racialized trajectories. Therefore, capitalism, including petro-capitalism, is inherently racial. In this system, the preservation of capital as capital relies on the continuous accumulation of wealth, which is achieved through the perpetuation and exploitation of deep inequalities among various human groups (Melamed, 2015).

Within the contexts of oil production geographies, the perpetuation of racial relations has been influenced by what Luke and Heynen (2020) call *petro-racial capitalism*. This term captures an accumulation strategy that is dependent on the extraction, dissemination, and utilization of petroleum. It involves the continuation of colonial dispossession and racialized accumulation, which have roots in historical processes, including slavery, patriarchy, imperialism, and genocide. In essence, petro-racial capitalism encompasses the ways in which the production, distribution, and consumption of oil contribute to the persistence of racial inequalities and injustices (Luke and Heynen, 2020).

An additional concept that provides a valuable framework for understanding the socio-economic and environmental dynamics of oil is petro-colonialism. While petroleum emerged as the pivotal input of late capitalism during the 1940s and 1950s, the quest for it had already been unfolding in non-Western regions since the late nineteenth century. The granting of concessions to neocolonial elites and the appropriation of land through the displacement of local communities facilitated the entry of substantial amounts of core capital into oil production (Ortiz, 2020). This process of petro-colonialism highlights how the pursuit and exploitation of oil resources have been intertwined with colonial legacies, power imbalances, and dispossession of local populations.

The Middle East emerged as one of the colonized regions sought after by oil explorers. In the early 20th century, colonial powers ventured into the Middle East for their oil endeavors, resulting in the establishment of social hierarchies rooted in white supremacy that manifested within the very fabric of oil cities. Prominent examples include Abadan

and Ahwaz in Iran (Ehsani, 2014; Elling, 2015), Dahrán in Saudi Arabia, and Kirkuk in Iraq (Bet-Shlimon, 2019).

This approach is rooted in what Edward Said (1979) referred to as "Orientalism," a framework through which the West has historically viewed and interacted with the Middle East and its people. This perspective, rooted in European imperialism, constructs the Middle East as the "Other" — a set of stereotypes that depict its cultures as fundamentally different from, and inferior to, those of the West. Said's critique highlights how this form of othering justifies Western political and economic domination, portraying the Middle East as a region of timeless, unchanging backwardness and barbarism while simultaneously asserting Western superiority and rationality (Furlas, 2015).

Such racial hierarchies were meticulously translated into the urban space. In Abadan, all urban amenities, including drinking water infrastructure, were exclusively designed for the benefit of European staff. Amidst the blistering heat, only British homes were afforded the shade of "lush, shady trees" (Kemp, 1953:36), while Iranian workers toiled and lived amidst extreme temperatures and toxic emissions from refinery chimneys. Similarly, under American Aramco in Saudi Arabia, local Saudis faced wage disparities and discriminatory living conditions (Vitalis, 2006). They were segregated from the white staff and resided in makeshift communities comprised of "thatched, palm-frond, and floorless huts" (Vitalis, 2006:56).

The perpetuation of racial hierarchies is not exclusive to the oil cities in the Global South that were colonized by the Global North powers. Similar systems of racial hierarchy can

also be observed in American oil cities, and their impact remains present today (Daugherty 2008). The establishment of the American oil industry was closely intertwined with ideals of "Americanism," which encompassed notions of white supremacy, nativism, and patriotism (Hussey, 2020). Consequently, oil production cities in the United States, such as Bakersfield, Richmond, Los Angeles, and New Orleans, experienced more pronounced instances of racist urban development during their early stages from the 1900s to the 1930s (Daugherty, 2008; Early & Sanders, 2017; Cumming, 2018; Luke & Heynen, 2020). In fact, the racial segregation and disparities in wages and housing conditions witnessed in oil cities in parts of the Middle East (specifically in Saudi Arabia) were influenced by practices within the oil and extractive industries in the United States (Mitchell, 2013).

American oil cities experienced discriminatory practices in the oil industry's hiring process, resulting in the exclusion of not only Black individuals but also Asian and Latino individuals. Even today, the American oil industry continues to exhibit lower diversity levels than other sectors (Shattuck & Nunoo, 2020). In the case of Bakersfield, for instance, it was not until the 1960s, concurrent with the passing of the Civil Rights Act (1964), that oil companies began to hire Black individuals. Even if hired, Black workers were often assigned to the most dangerous and hazardous jobs (Michaels, 1983) and occupied the lowest positions in the economic and social hierarchy within the city (Early & Sanders, 2017).

Internal [Domestic] Petro-Colonialism and Sacrifice Zones

The livelihoods of individuals residing near oil infrastructure, such as oil fields, refineries, petrochemical plants, and pipelines, are intricately tied to both global and local

developments within the oil industry and its associated politics. However, despite their proximity to the oil industry, they often find themselves disconnected from its benefits. The accumulation of oil wealth primarily occurs *elsewhere*, and those who live and work within the oil industry do not reap significant advantages from it except for limited employment opportunities and wages.

Within the literature influenced by postcolonial theories, a body of work exists to uncover the oil industry's colonial nature (a few of them mentioned above). This perspective highlights how countries from the global North have sought to appropriate the vast oil reserves in regions such as the Middle East, Mexico, Venezuela, Nigeria, and other nations in the Global South since the early 20th century. However, the exploration of power dynamics within oil-rich countries in the global South remains relatively underexplored in this literature.

This gap can be partially attributed to the dominance of postcolonial studies, which predominantly focus on nation-states as the primary unit of analysis while giving minimal attention to concepts such as "internal colonialism" or "inter-subaltern colonialism" (Matin, 2022). As a result, the internal power dynamics within oil-rich countries in the Global South, most often reinforced by nationalist sentiments, have received limited scholarly attention within the oil literature. Interestingly, the rise of nationalism globally was directly tied to the increased use of fossil fuels in the early 20th century. The considerable energy resources essential for fueling communication and transportation played a fundamental part in cultivating a collective identity among formerly separated communities and geographic

regions, intertwined with nationalist narratives, focusing on the notions of progress and the common objectives of nation-states (Szeman & Wallum, 2021).

Internal or domestic colonialism refers to a geographical-based pattern in which a differentiated population within a dominant power or country experiences subordination. This subordination gives rise to systematic inequalities that manifest in various aspects, including political representation, access to employment, financial resources, and essential institutions such as education and healthcare. Additionally, it involves the exploitation of natural resources and lands where these populations reside (Pinderhughes, 2011).

The condition of African Americans in the United States is one of the extensively studied cases of internal colonialism (Allen, 2005; Bush, 2011; Gutiérrez, 2004; Klug, 2020; Like, 2020; Pinderhughes, 2010, 2011). However, it is not exclusive to Global North countries. While Global South states generally hold a subaltern position within the contemporary global capitalist order, they also exert their own dominance over internal minority groups as a form of colonial power. This domination is seen as crucial for maintaining and perpetuating the existing nation-state order (Matin, 2022).

The oil industry is one factor contributing to the perpetuation of domestic colonialism. The effects of colonial relations do not simply disappear when colonial powers withdraw from the Global South. These relations often persist in other forms, frequently within the borders of a single country. Inequalities between different regions of a country, whether economic, political, or social, often exhibit racial, ethnic, or religious dimensions. It is crucial to understand how and why the conditions and practices of colonial relations can persist,

transform, or endure in the present historical context (Goldstein, 2016).

Internal or domestic colonialism provides a valuable framework to examine the dynamics of extractivist capitalism and its consequences for social transformations and spatial reconfigurations. It allows for a critical analysis of the outcomes of anti-colonial movements and events, such as the nationalization of the oil industry that took place in numerous global South countries, including the Iranian oil nationalization movement of the 1950s. By employing subaltern studies, we can contribute to the critique of nationalism and challenge the historical narratives constructed by the notion of the nation-state.

In the case of Iranian Oil, the mistreatment and oppression of Iranian workers by the Anglo-Persia/Iranian Oil Company (APOC/AIOC) played a significant role in sparking the nationalization movement in 1951. Although steps were taken to nationalize the oil industry during that time, the colonial-style oppression persisted in a domestic form, particularly affecting indigenous populations and reshaping ethnic dynamics within the oil cities of Khuzestan⁵. The ecological aspect, including environmental destruction and pollution, played a crucial role in perpetuating these dynamics by unevenly distributing the benefits and harms associated with the oil city.

Overall, the lens of internal colonialism allows for a deeper understanding of the complex interplay between extractivist capitalism, social changes, and the reconfiguration of space, shedding light on the nuanced impacts of historical events on different communities within

⁵ I further discuss it in chapter Five.

countries. However, there are limitations to the domestic colonialism framework when applied to the oil industry. One significant issue with the theories of internal colonialism is their limited emphasis on geographic and spatial relationships. For example, Harold Cruse's depiction of African Americans in the United States (1968) as a "colonized nation" and the analyses by Franz Fanon, which focus on the dynamics between different segments of the colonized and colonizers, prioritize race as the primary lens through which these relationships are understood. In these perspectives, the geography of life and work is deemed almost irrelevant. This shows a need to include geographical aspects in using the domestic colonialism approach to explain the nuances of oil colonialism. Geographical considerations are essential to comprehending how subaltern groups are impacted by oil development.

The notion of *sacrifice zones* can be seen as a geographical perspective of domestic colonialism. The term refers to geographic areas that have been severely environmentally degraded for economic or national benefits deemed more significant than the well-being of the local, often indigenous, populations inhabiting these areas. These zones are characterized by high levels of pollution and environmental destruction that disproportionately affect marginalized communities (Fast, 2018). The term encapsulates the systemic neglect and exploitation embedded in these practices, which are often sanctioned or ignored by governmental policies.

Sacrifice zones are typically situated in marginalized and impoverished areas, where residents suffer from poor health and quality of life as a result of their proximity to harmful

industries (Lerner, 2012; de Souza, 2021; Juskus, 2023). These zones are not only physical spaces but also constructs of colonial and industrial priorities that dismiss the rights and health of local populations in favor of broader national or economic interests (Fast, 2018). these zones represent a clear example of environmental injustice, where the burdens of pollution and industrial hazards are placed on those least able to resist or move away (de Souza, 2021).

The term "sacrifice zone" should not be used to promote another simplistic binary in geographical analysis. Such binary thinking categorizes areas as either sacrifice zones or not, which can obscure the nuanced impacts of environmental and social policies that affect various regions differently (De Bruyn, 2023). For instance, in Khuzestan, the boundary between areas suffering significant environmental degradation due to the oil industry is indistinct. Within these areas, there are zones where environmental degradation is more severe than in others, and the politics of neglect are more pronounced, often intersecting with ethnic contexts. At the same time, on a different scale, the entire region of Khuzestan could be considered a sacrifice zone, as evidenced by national policies regarding its natural resources, from oil to water. Therefore, it is crucial to recognize the blurred boundaries of sacrifice zones and the various scales at which these zones are identified.

I argue that theories of petro-colonialism and the concept of sacrifice zone, in conjunction with urban political ecology, provide a better framework for comprehending the intricate spatial disparities instigated by the oil industry. This framework has the potential to illuminate the reasons why certain regions and populations are more vulnerable to

exploitation, dispossession, and ecological deterioration than others. Within this paradigm, the focus of analysis lies in the oil industry's dependence on territorial appropriation and ecological devastation.

Within Urban Political Ecology (UPE), a framework that pays greater attention to the issue of social reproduction proves to be more helpful in analyzing various aspects of the oil industry. The following section will provide a theoretical framework to encompass these aspects.

Urban Political Ecology, Everyday Life and the Matter of Social Reproduction

Urban Political Ecology (UPE) scholarship focuses on the intricate dynamics of urbanization, highlighting how these processes are shaped and sustained by the continuous circulation of capital, resources, and nature (Broto & Bulkeley, 2013). It acknowledges the material realities that shape the urban environment and elucidates how these conditions are manipulated to benefit the privileged elites while disadvantaging marginalized populations.

Within the UPE framework, cities are seen as produced through socio-ecological processes that are inherently political, resulting in specific socio-environmental urban configurations that are constantly being created and reconfigured (Heynen et al., 2006). Thus, the primary concern of UPE revolves around the questions of who produces these socio-ecological configurations and for whom (Heynen et al., 2006). In simpler terms, UPE scholars seek to understand who benefits and who bears the costs of these urban transformations.

One main focus of UPE research is to study how cities grow by turning natural resources into products, i.e. *urban metabolism*. The term is traditionally used metaphorically in urban

political ecology to describe the transformation and flow of resources in cities (Doshi, 2017). UPE looks at how these products move to and within cities, similar to how a body's metabolism works. This process changes nature and shifts how power is distributed in society, affecting where people live and how they connect. In short, UPE aims to understand these changes and movements (Cornea, 2019).

Within the field of UPE, the concept of metabolism holds particular importance, as it helps us understand how cities are physically (re)built and maintained through the transformation of natural resources into commodities for capital accumulation. Material metabolism is therefore connected to social relations of production and with capital flows that range from the local to transnational. Everything is affected by these changes, and cities are part of large networks that connect different places and include both people and nature (Lawhon et al., 2014).

UPE scholarship repositions nature as a product of social relationships, shifting away from the notion of nature as an ahistorical input to the economy (Smith, 1996). The process of metabolism involves constant transformation and change between humans and nature. Humans shape nature, and in this reciprocal process, they also shape themselves (Swyngedouw, 2006). Thus, the process of urbanization and ecological transformation perpetually alters socio-political relationships within the built environment, including racial, ethnic, and gender relations.

These notions have led UPE scholars to emphasize the intricate interconnections between the mundane aspects of daily life, social reproduction, and ecological systems in urban

contexts (Doshi, 2017). In this view, theories of UPE extend their focus beyond spatial and environmental transformations to include the bodily and material impacts of such changes. This means considering how physical bodies experience and react to urban environments, a perspective that reveals the deeply felt impacts of displacement and environmental degradation on vulnerable populations (Doshi, 2019). In this approach, the concept of “metabolism” is also redefined for a view that emphasizes the direct, lived experiences of these processes on human bodies. Doshi argues that urban metabolisms are intimately connected to the bodies that inhabit urban spaces, influencing and being influenced by them (Doshi, 2017).

Therefore, an *embodied* urban political ecology refers to the ways that urban environments, subjectivities, and political ecologies are experienced and felt by the body, highlighting how social and environmental injustices are physically manifested (Doshi, 2017). In this tendency, the question is how multiple social differences are (re)produced in and through everyday life (Truelove, 2011). To effectively comprehend and respond to the ongoing production and reproduction of uneven urban natures, UPE scholarship engages with the embodied politics that lie at the core of these metabolic transformations (Heynen, 2018). For example, Truelove (2011) shows how gender shapes urban political ecologies and calls for more attention to the everyday as a means for understanding the practice of resource access.

Embodied urban political ecology promotes an intersectional approach to UPE, considering how various forms of identity and difference, such as gender, race, and class,

intersect to shape experiences of urban environments (Doshi, 2017). This proposition challenges the traditional focus on class in political ecology, advocating for a more nuanced understanding of how multiple axes of identity influence environmental experiences and policies.

Kimberlé Crenshaw (1994) defines intersectionality as a framework for understanding how various forms of social stratification, such as race and gender, do not exist separately from each other but are interwoven together. Crenshaw uses the concept to show how the experiences of black women cannot be adequately understood by looking separately at the gender and racial dimensions of their lives because these factors interact to shape the specific way they experience discrimination and oppression.

In environmental justice studies of extractivist capitalism, the concept of intersectionality has been shown to be a proper analytical tool for navigating environmental injustice. For instance, Cielo and Coba (2018) explore intersectionality through the case study of Esmeraldas, Ecuador, focusing on the chikungunya epidemic. They analyze how gender intersects with economic dependency on extractivism and environmental degradation, leading to exacerbated health disparities among marginalized populations, predominantly Afro-descendant populations. Women, bearing the burden of unpaid care work, face increased vulnerability due to their proximity to extractive sites and the associated environmental pollution. This intersection of gender, economic conditions, and environmental factors results in a deepened illness-poverty trap, highlighting the complex web of systemic inequalities that particularly affect women in the region.

Horowitz (2017) investigates indigenous Kanak women's experiences with mining operations in New Caledonia. She uses intersectionality to analyze how these women's social positionings—shaped by their gender, ethnicity, age, socio-economic status, and social hierarchies—are influenced by colonial and post-colonial politics. Rodin (2021) examines how black women, quilombolas, and gleaners in Brazil, who belong to traditional fishing communities, are affected by environmental conflicts arising from the occupation of their territory by the petroleum industry. She explores intersectionality by investigating how race, gender, class, and a specific way of life tied to the environment intersect to shape the lives of these women. She shows these factors combine to affect these women's social position and the challenges they face due to the environmental degradation caused by nearby oil operations.

One approach to comprehending the embodied power dynamics that (re)shape and transform urban environments is to give attention to the concept of social reproduction. Social reproduction is the way we live both within and outside of work, and it emphasizes the unequal distribution of conditions necessary for personal and community flourishing, which results in certain bodies, workforces, and communities being more precarious than others (Mitchell, Marston, and Katz, 2003; Meehan & Strauss, 2015). Like production, social reproduction encompasses a range of material and cultural forms and practices specific to particular geographies and historical contexts (Katz, 2001). Every aspect of social reproduction is profoundly influenced by the marginalization and powerlessness experienced by certain groups.

Scholars studying social reproduction examine the diverse processes that ensure the continuity and preservation of individuals and communities over time (Strauss, 2013). Thus, in order to grasp the geographical dynamics of accumulation, it is vital to comprehend the hierarchical systems of reproduction that have led to the creation of marginalized populations, often influenced by racialization (McIntyre & Nest, 2019). Historical materialism, widely employed by UPE scholars, helps understand the impact of capitalist transmission on social reproduction and its integration into everyday life.

My key theoretical insight from integrating Urban Political Ecology (UPE) with theories of social reproduction is that the development and ecological changes in cities over time can be better understood by looking at the history of social reproduction. The ways in which individuals define themselves and their social relationships are intricately linked to the circulation of capital, natural resources, and pollutants, which have played a role in producing subaltern groups. A helpful way to study how geography and social reproduction come together is to focus on how daily activities are connected to larger social, economic, and political structures (Rodriguez, 2021).

Social reproduction encompasses a set of structural practices that operate in dialectical relations with production, mutually shaping and conflicting with one another (Katz, 2001). The practices of social reproduction play a significant role in the functioning of production processes. The precarious living conditions experienced by those residing in oil-rich regions can exacerbate the destructive nature of the oil industry. When a group of people live in precarious circumstances and struggle to sustain their daily lives and communities,

they become vulnerable to dispossession and environmental pollution, making way for the oil industry to operate more profitably for the national and global capitalist system.

Thus, a UPE framework can be applied to understand colonialism and domestic colonialism as well. In this framework, the ability of various communities to access the benefits of oil wealth is at the center of the analysis. It helps understand what enables or constrains people to benefit from resources over time. People and institutions are positioned differently in relation to resources at various historical moments and geographical scales. The strands thus shift and change over time, changing the nature of power and forms of access to resources (Ribot & Peluso, 2003).

An embodied UPE analysis of petro-colonialism sheds light on changing power dynamics in accessing natural resources, thus helping us identify the process and map the mechanisms by which access is gained, maintained, and controlled across racial, ethnic, and gender lines during the process of oil urbanization. Figure 12 summarizes the key points of the theoretical framework of this dissertation.

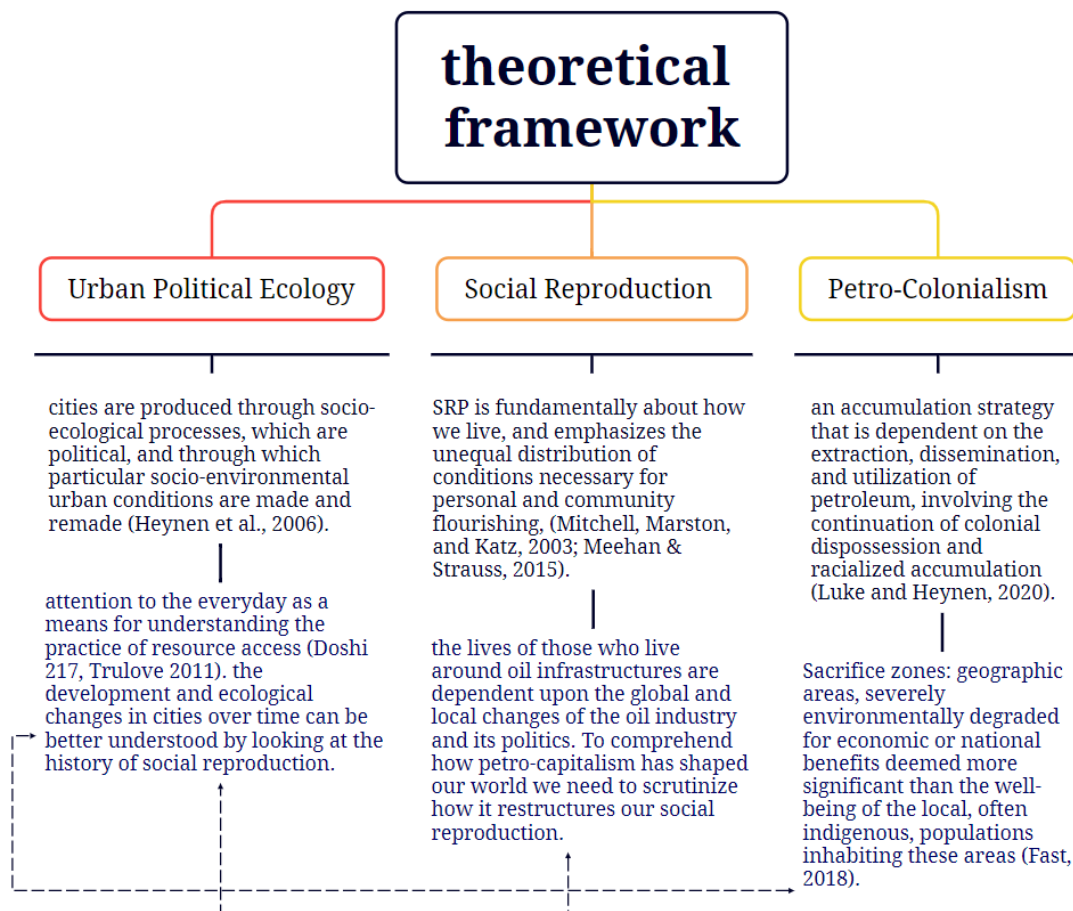


Figure 12 Mapping the theoretical framework of the dissertation

Chapter Three: Everyday Life in the Colonial Oil City

In this chapter, I focus on the interplay between the oil industry, everyday social reproduction, and gender relationships in Khuzestan’s oil region, adopting a historical lens to comprehend the oil space and its reproduction. To partly answer question one of the dissertation, which is “how hierarchical socio-spatial relationships are perpetuated through practices of everyday life,” I delve into the day-to-day lives of the people in the oil region, exploring life under the environmental pollution imposed by the oil industry at various

scales and the conditions that govern the everyday and generational reproduction of the labor force. Throughout, I highlight the aspects of the oil city that enabled residents not only to survive but also to thrive despite the challenges they faced.

The time frame is between 1908, when the British first extracted oil in Masjed-Suleiman, and around the 1950s, before oil nationalization, a turning point in the history of Khuzestan's oil development. The data for this chapter primarily comes from archival research, which includes sources such as the British Petroleum Archive, the India Office Records, newspapers, oral histories, and other resources. Additionally, I have utilized existing studies to deepen the understanding of social reproduction in the oil region.

This chapter, in addition to the general theoretical framework of the dissertation, draws significantly on post-colonial theories related to urban space. It aims to understand how colonial discourse was utilized to reinforce racial and class segregation and stratification, along with disparities in the distribution of environmental harm. Additionally, I referred to Henri Lefebvre's theory of the production of space to examine the homogenized and hierarchical aspects of colonial urban spaces and their contradictions. These contradictions have revealed alternative spaces of hope and resilience for the residents of the oil city.

Everyday Life and Environmental Pollution in the Oil Region

The comprehension of nature is intrinsically tied to social labor, making environmental and ecological changes a reflection of social history. In this reciprocal relationship, humans not only shape nature but also shape themselves (Swyngedouw, 2006). Ecological destruction and the distribution of environmental harm, often inherent in oil development, contribute

to the creation and perpetuation of new social orders—racial, ethnic, and gendered. As negative ecological changes disproportionately affect various population groups, these changes equate to land dispossession, resource contamination, pollution, and disruption of livelihoods. Oil development in Khuzestan has not only transformed the regional natural landscape but has also concurrently generated an urban space characterized by profound disparities in the distribution of environmental benefits and harms. This division played a pivotal role in solidifying a colonial order that persists through various dynamics to the present day.

The socio-environmental setting in the oil cities of Khuzestan during the formative stages of oil development was distinctly influenced by the colonial dynamics instituted by the Anglo-Persian/Iranian Oil Company (APOC/AIOC). Evident within this context were explicit racial hierarchies sanctioned by the colonizing entity. Spatial segregation was not confined only to residential demarcations but permeated various urban domains, including clubs, libraries, parks, restaurants, pools, and even public transportation.

This entrenched system of racial segregation in urban areas fostered a dualistic character within the oil cities of Khuzestan. On the one hand, where the British and other white staff lived, an enclaved, modern urban landscape evolved at the nexus of domestic and global oil infrastructures, featuring modern amenities like running water, sewage systems, electricity, social clubs, and entertainment facilities. Beyond the formal boundaries of APOC, slums and shantytowns expanded, accommodating thousands of indigenous and migrant laborers in substandard living conditions.

An intermediate housing lane existed for clerks and semi-skilled workers, mainly Indian staff, introducing another layer of hierarchy and socio-spatial division within this context (Elling, 2015). Indian staff were paid better than Iranian staff and could achieve senior positions more quickly than Iranians (Coll 28/85S (2) 'Persia; Abadan situation 1946; Policy to be pursued by H.M.G. (Recommendations & General Appreciation). However, their housing condition was "not up to the standard which the company desire" (Coll 28/85S (2) 'Persia; Abadan situation 1946; Policy to be pursued by H.M.G. (Recommendations & General Appreciation). The Indian Lane, marginally better than spontaneous slums, exhibited its own distinctive hierarchy and socio-spatial divisions among its occupants (Atabaki, 2015). Only in the slums, was there no ethnic or occupational segregation (BP Archive, ArcRef 70209, 1924).

This racial discrimination was so broad that, at some point, it became a source of anxiety for the British company, fearing that the workers' protest would bring about instability. In 1934, the AIOC architecture and urban planner warned that the "very real and wide gulf" between Iranian and European living conditions was going to stir the nationalist sentiment of Iranians. He suggested that the new town project should welcome Iranians and Europeans side by side (BP Archive, ARC49673, 1934). The proposal did not get a welcoming response from the AIOC managers (BP Archive, ARC47590, 1934). Fourteen years later, in 1947, the labor attaché of the British Embassy in Tehran, in his visit to Abadan, made the same observation and was amazed by the high rate of labor turnover in the oil industry (only 50% of the oil employees remained in service for 12 months). He recommended that AIOC must enforce "a policy of non-discriminatory on racial grounds"

and “the tradition among older European staff to treat Iranian as an inferior race should be discouraged,” racial discrimination must be removed, and the living condition of its Iranian workers must be improved (Coll 28/85S, 1947). Figure 13 depicts the differences among various settlements in Abadan, marked by racial division.

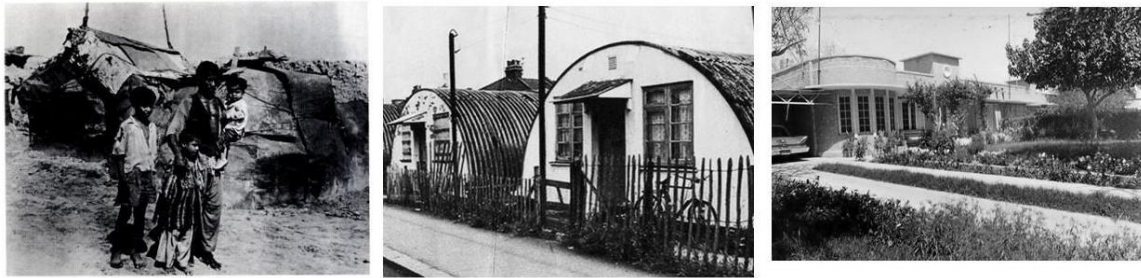


Figure 13 Different types of housing in Abadan (1920s-1950s). Left to right: Iranian workers settlements, Coolie/ Sikh/Indian Lane, APOC neighborhood. Source: Unknown, Touraj Atabaki's Private Collection, and Dandly, 2015.

Numerous researchers have carefully explored the complex interplay of racial relations in the urban areas of Khuzestan, heavily focused on the refinery town, Abadan. Kaveh Ehsani's 2014 work focuses on the significant influence of Abadan's racialized infrastructure in forming the industrial landscape for oil workers. Elling (2015) examined the conflicts arising from the spatial and racial division among British, Indian, and Iranian workers in Abadan. Atabaki, in 2015, analyzed the experiences of Indian migrant laborers in the Khuzestan oil sector, and in another study in 2013 highlights the emergence of a new industrial worker class in Abadan. Mortaheb (2020) investigates Abadan's city planning within the context of the oil industry's imperialistic strategies, suggesting its goal was to boost industrial productivity. Zagagi (2018) explores the interactions among various stakeholders in the Khuzestan oil industry (up to the nationalization of oil in 1951), including the British oil companies, workers, local residents, and political figures.

What remains relatively unexplored is the environmental dimension of this colonial order and its impact on the social reproduction of oil city residents. There is a visible gap in the explicit focus on environmental racism, urban infrastructures, and the distribution of pollution, which were strategically managed to control social reproduction and consolidate colonial relationships.

Urban infrastructures served as pivotal instruments for maintaining and reinforcing the colonial hierarchy. Beyond their material significance, infrastructures carry narratives, meanings, and politics. As Larkin (2013: 329) posits, "Infrastructures are matter that enables the movement of matter; their particular ontology lies in the fact that they are things and also the relationship between things." Infrastructures establish a contextual framework within which various objects operate, including colonial, racial, and gender relations. They not only delineate the boundaries of such relations but also provide a backdrop for the reproduction of these relationships through the everyday affairs that flow via the infrastructure medium (Spice, 2018).

In what follows, I explore the key areas of urban infrastructure disparities and environmental issues at different levels and scales in Khuzestan during the early stages of oil development (the 1910s to 1950s). I'll also look at how these challenges affected the lives and social reproduction of those who lived and worked near oil industry infrastructures.

Water contamination: In Khuzestan's oil fields, encompassing cities such as Masjed-Suleiman and Aqa-Jari, the water supply was frequently contaminated, leading to health

concerns. Rivers' water supply and other water bodies, like the Tanabi River, which had been exploited for centuries for drinking and agriculture, became contaminated and unsuitable for use, often tainted with oil (Mo'taghedi, 2019). By 1909, just one year after the commencement of commercial oil extraction by APOC, oil had permeated throughout the oilfield areas, affecting rivers and filling mountain cavities (Mo'taghedi, 2019). Consequently, obtaining clean water required either digging wells or transferring water from farther springs to the workplace and oil extraction sites. In some cases, water scarcity led to conflicts between local residents and oil company workers, as the people held the British oil company responsible for the contamination of their water sources and consumption of the largest share of clean and accessible water in the region water (Mo'taghedi, 2019).

The industrial water demand was substantial. In Abadan in 1950, approximately 12,000,000 gallons of water circulated daily throughout the refinery process, surpassing the entire water consumption of the London Metropolitan area by 1.5 times (Kemp, 1950). By 1959, the salinity of river water (Shatt-al-Arab, Karun, and Bahmanshir) was so high that it was not even suitable for industrial purposes ("Water Salinity," 1959).

In Abadan, within the "native" section characterized by an expanse of makeshift houses constructed by workers using available materials such as oil drums and papers (Ehsani, 2014), water contamination resulted from the discharge downstream of waste from the sewer pipes in the Company's area, primarily the residential zone of British staff (Zagagi, 2018). The overall sanitation conditions, the absence of a sewage system, and the lack of

any mechanism to dispose of contaminated wastewater affected water supplies and the food purchased in the native town's bazaar (Zagagi, 2018).



Figure 14 An oil pond in Bakhtiari land (north of Khuzestan). Source Brunei Gallery, School of Oriental and African Studies.

As of 1950, the Company provided an average of only 10 gallons per day per person, a stark contrast between the water consumption of Iranian and British staff. The discrepancy was evident, particularly in the case of the British staff, whose water consumption was notably higher, driven in part by the luxury of twice-daily baths (Floor, 2014).

Air Pollution: Near the oil fields, the air was tainted with toxins and noxious gases emanating from wells and oil deposits, causing substantial air pollution and adversely impacting workers, locals, and domestic and wild animals in the area (Mo'taghedi, 2019). As early as 1909, shortly after the oil discovery, Wilson (1942) observed that the areas near oil fields in Masjed-Suleiman were so saturated with obnoxious gases that wild animals like foxes, jackals, porcupines, jerboas, and birds were found dead. He described streams laden with oil emitting a gas-like odor (Wilson, 1942: 52-53). Workers faced significant risks, particularly during unexpected gas releases, often leaving them with no safety

precautions other than to flee (Mo'taghedi, 2019). Eye inflammation was a common injury among workers in the oil fields and on wells, particularly drillers. Many workers suffered vision loss due to gases emanating from oil wells, and their subsequent claims for medical treatment and employment rights shows the severity of the issue (Mo'taghedi, 2019).

Toxic gas posed a lethal threat in other oil cities as well. A visitor in 1951 vividly describes Abadan as follows:

Inside the iron-fenced compound, and rearing between the gleaming towers and spindly chimneys, three sulfurous flares which at night cast monstrous shadows, guttered perpetually, burning unwanted gases from the refined oil. The air was slightly sour, cloying, and heavy with invisible fumes (Kemp, 1953).

This is a shared observation made by anyone who visited Abadan. The air was so dense that one could perceive its distinctive smell even from a distance. Jalal Al-Ahmad, a prominent Iranian writer, noted the city's smell before even entering: “It was like the smell of spoiled mucus, a lingering odor entrenched in the depths of one's nose, akin to the scent of garlic” (Al-Ahmad, 1965). I will revisit the issue of the oil city smell in the affective section and argue that it holds multiple meanings and significance for oil city residents.

Al-Ahmad also noted that each part of the city had its own smell — the British part, the Indian quarter, and the Iranian neighborhoods each had a distinct smell, indicating that each area's air and soil were filled with different substances. The design of Abadan was intentionally laid out in a manner that directed toxic gas towards the poorer neighborhoods in the east of the refinery, while the British bungalow area was situated in the west of the

refinery. During summer months, when winds blew in the opposite direction, British residents would leave the city to escape the pollution (Biglari, 2021). Figure 15 shows the location of Braim—the neighborhood for British and high-ranking staff—on the west side of the refinery, with working-class neighborhoods to the east, directly downwind of the refineries and in the path of their emissions. Figure 16 shows how toxic gases in the sky were inseparable from oil city residents' lives in Abada.

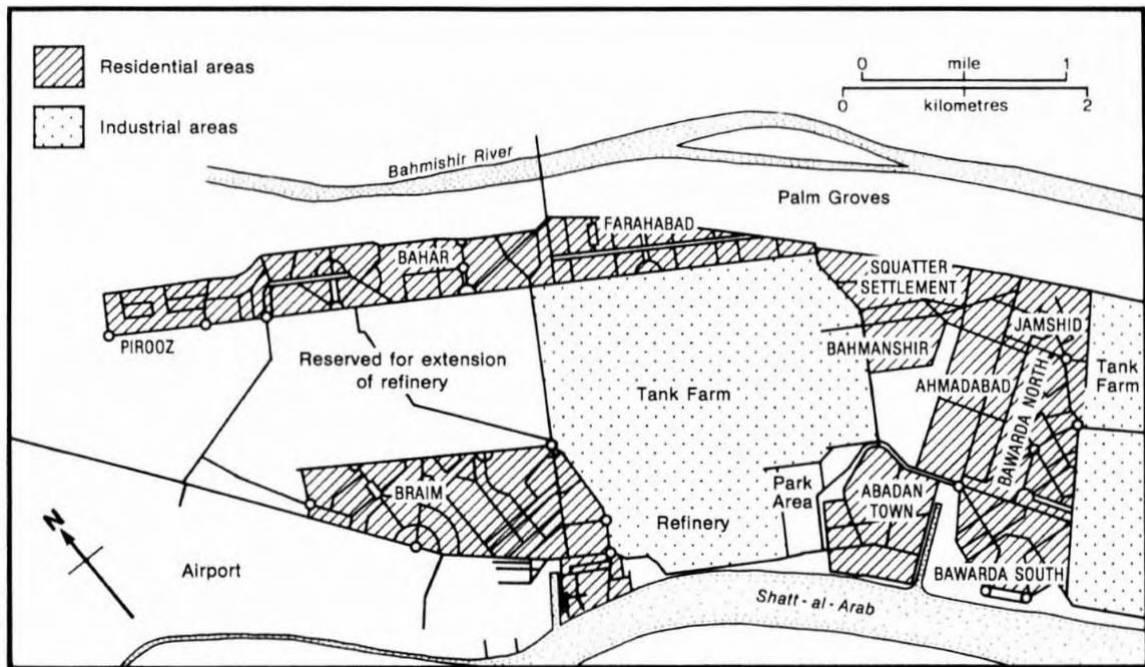


Figure 15 Abadan Urban Design; Braim in the west and Native village and worker neighborhoods in the east of the refinery; the prevailing wind direction from west to east. (Sociales, 1964)

Air pollution and toxic gas posed significant occupational hazards, a concern often dismissed by the company. The harm caused by air pollution is typically gradual, and the most severe consequences remain invisible for years. In 1951, oil workers, alarmed by excessive sulfur dioxide (SO₂) leakage, rightly perceived as harmful, submitted numerous complaints to AIOC managers and the government. The workers demanded that AIOC provide free milk, assuming it could prevent sulfur poisoning (Floor, 2014). Despite the

medical staff's awareness of the immediate effects of heavy exposure to sulfur dioxide fumes on the eyes, skin, and lungs, the Company adamantly denied any health damage. It even published a scientific article to support its dismissal (Floor, 2014). This denial persisted because SO₂ did not cause immediate death, making the condition of morbidity seemingly tolerable. It was a form of "slow violence" (Nixon, 2011) whose detrimental effects may remain hidden for years. This situation also uncovers another aspect of social stratification within the oil industry among different worker groups. Compensation for toxic gas exposure was given to white-collar salaried employees but not to blue-collar workers, who were more likely to come into direct contact with these harmful gases (Interview with Khosrow-Shahi, 2007).



Figure 16 Toxic gases in the sky were inseparable from oil city residents' lives. Source: Left: Inge Morath 1956, Right: Iran's Petroleum Museum

Heat: Following exposure to toxins, hot weather emerged as the second most common cause of death and morbidity in oil fields (Mo'taghed, 2019). In the refinery town, hot

weather ranked second after contaminated drinking water (BP, 68723, 1924).

Until the widespread availability of electricity, there were no measures in place to mitigate the impact of the extreme heat of Khuzetan for the majority of workers. Conversely, European staff utilized the labor of Iranians and Indians to keep themselves cool. They employed the "punkah," a mechanical adaptation of the palm leaf fan, operated by a servant known as the punkah-wallah, who pulled a rope to move the contraption. This device was often hung over beds or dining tables (Floor, 2014), serving as another indication that, for colonizers, the native population was considered a part of the natural environment or oil infrastructure.

There was an assumption that the native people were accustomed to extreme heat; thus, no special provisions were deemed necessary. However, records of workers' demands and grievances indicate otherwise. Requests to adjust working hours and provide ice were recurring themes in oil workers' protests (Azerbaijani, 2020). The summer heat was intolerable to the extent that immigrant workers preferred returning to their hometowns during the summer. Company managers, aware of the health risks posed by extreme heat to the workers, kept a certain amount from their salaries to make workers stay during the hot summer weather. According to the company's perspective, staying in debt to workers was a necessary measure for APOC to keep workers on site despite the health risk (NLAI, Documents of the Fifth Parliament, June 5, 1924).

Sanitation: In the densely populated shantytown of the "native" part of Abadan, sanitation facilities were virtually non-existent. Public toilets were absent, and private ones were

scarce, often requiring manual cleaning. Most of these facilities were essentially pits in the ground. Most of the population had to use any open land near their homes or go to rivers and creeks for their sanitation needs (Zagagi, 2018). An eyewitness account of Abadan in 1929 described the hygiene conditions of working-class neighborhoods as follows:

"The workers' neighborhood (Ahmadabad) was a pretty tough place. Water and restroom facilities were in short supply, and the whole area was pretty darn filthy. Diseases were spreading like wildfire. Some workers had these small houses with one or two rooms close to Shatt al-Arab River. But they weren't much better in terms of cleanliness than the places in Ahmadabad. [...] The distance from the workers' area to the Abadan water treatment plant was over two kilometers, which they had to walk on foot in the scorching and exhausting heat of Khuzestan [to acquire clean water]" (Eftekhari Diaries, in Bayat & Tafreshi, 2021: 172).

The sanitary conditions were not better in Ahwaz, which

Looked as though an earthquake had shattered it so unkempt and untidy were the houses; [...] there is no drainage, and the liquid refuse disappears through holes in the center of the streets, while dogs, beetles, kites, and perhaps an oppressed section of the community account for the removal of the rest (Clifton, 1925, quoted in Floor 2014).

Occupational Hazards: Working hazards were prevalent in Abadan and the oil fields. Workers faced the risk of amputation during manual tasks, burns from fires while working on oil wells, bone fractures while moving and laying oil pipes, blindness due to contact with toxic materials, and various other injuries resulting from their work in the oil industry (Mo'taghedi, 2019). In the early years of oil development in Khuzestan, no measures were

in place to prevent work-related hazards or compensate workers afterward. One of the earliest workers' riots in 1914 in Abadan occurred due to workers demanding that the oil company take responsibility for work-related injuries and deaths (Cronin, 2010).

The significant number of beggars and peddlers in Abadan was a symptom of the high rate of work hazards. Many of these individuals were former company workers who had been injured or fallen ill, subsequently dismissed by the oil company, and left without a source of income and ability to work (Eftekhari Diaries, in Bayat & Tafreshi, 2021).

The most disturbing aspect, scarcely documented in the British archival records, was the physical abuse perpetrated by oil company managers against workers. In the late 1920s, Yusef Eftekhari witnessed that:

The British would beat up workers in ways that sometimes led to their deaths, and they often got away with it. The workshops were rife with beatings and insults, to the point where even the Armenians and the Indian managers would severely beat and injure their fellow workers (Eftekhari Diaries, in Bayat & Tafreshi, 2021).

Illness and malnutrition: Finally, all the issues discussed above accumulated and lead to a high rate of mortality and morbidity in Khuzestan's oil cities. The absence of hygiene, densely populated settlements, and a lack of quarantine provisions in an area frequented by travelers from various places resulted in several outbreaks of disease. Coupled with food shortages, a high rate of work injuries, and extreme poverty, this led to a situation of constant morbidity and bodily damage among the working class (IOR, Coll 28/85S (1) 'Persia. Abadan and S. W. Persian oilfields; Protection of British interests.', 1946; IOR

‘Arabistan: Consular Arrangements’ 1920-1931). Malnutrition stood out as one of the most noticeable characteristics of oil cities. Yousef Eftekhari, a union organizer, vividly describes working-class women in Abadan in around 1929 as "oil-soaked, struggling skeletons" with "pale and withered faces," emphasizing the malnutrition and illness embedded in the everyday life of the oil city. "The diet of the workers consisted solely of plain bread. They rarely got any hot meals, meat, fruits, and even tea" (Eftekhari Diaries, in Bayat & Tafreshi, 2021: 175). In the 1970s, it was estimated that 94-98% of the daily calorie intake of Khuzestani people came from the consumption of wheat bread (Ghazi, 1977).

AIOC's "strictly confidential" report in 1943 acknowledges a "dangerous" lack of meat, eggs, curds, cheese, fats, fruits, and vegetables in oil workers' diets (Zagagi, 2018). The report's findings clearly demonstrated that the longer an Iranian worker lived in Abadan, the more deteriorated their general state of health became. For instance, adolescent apprentices born and raised in Abadan were less developed physically, with less muscle tone (due to malnutrition) than newly arrived apprentices (Zagagi, 2018: 231).

Epidemic diseases such as typhus and smallpox were widespread in the poorest neighborhoods around the refinery in Abadan (IOR, Coll 28/115 ‘Persia [Iran]; Khorramshahr – intelligence summaries.’, 1942; IOR Coll 28/85S (1) ‘Persia; Abadan and S.W. Persian Oilfields; A.I.O.C. Indian Employees’, 1948). Moreover, "Eye disease is exceedingly prevalent throughout the town, specifically in children. Almost every other person in the poor class appears to have some defect in the eye" (IOR, Administration

Report for the Arabistan Consulate, 1911, 67-68). Due to contaminated water, many native residents suffered from gastric and intestinal diseases (Zagagi, 2018).

Not only in crowded cities but also due to the mobility of oil residents, rural areas of Khuzestan were infected by epidemics. Such outbreaks sometimes forced entire tribes or villages to leave their homeland (Mo'taghedi, 2019). These outbreaks were emblematic of prevalent poverty and the general lack of sanitation in the oil region. Typhus, for example, a disease typically found in overcrowded and unhygienic places such as neglected refugee camps and prisons, was unknown in southern Iran before the onset of oil development (IOR Coll 28/85S (1) 'Persia; Abadan and S.W. Persian Oilfields; A.I.O.C. Indian Employees', 1948).

In 1947, an eyewitness who visited Abadan described the living conditions as follows:

Here, I discovered the terrible sight of the conditions in which the Iranian worker lives under the British colonial regime. [...] Here I saw people dying of hunger. Here I saw a person receive four pitas and a teabag. That was his salary. Here I saw dying people lying in the streets. Here I saw the humiliation, which the white man does not get involved with. [...], there is no mixing together (quoted in Shenhav, 2002).

Endemic famine and a high mortality rate were symptoms of what Frantz Fanon called "atmospheric permanent insecurity" (Opperman, 2019). In this situation of "omnipresent death," Fanon argues, the cumulative weight and exhaustion of making the conditions of life, such as water, air, food, and labor, reduce life to a struggle for survival (Opperman, 2019).

Controlling Social Reproduction Through Production of Space

APOC strategically controlled the allocation of resources, such as water, and the dissemination of pollution in oil cities, including toxic materials and air pollution. This control extended to shaping the racial divisions within these cities. The absence of proper living conditions and facilities was employed to further *other* the native population and reinforce the racial hierarchy. In the distribution of harm and resources, the visibly marked differences in the local body—evident through signs of malnutrition, illness, and poor hygiene—were intentionally highlighted as inherently distinct from the British body. This perspective was also linked to a broader and deeply historically situated notion within European imperialism that constructed the Middle East as the "Other," which encompasses a set of stereotypes depicting its cultures as fundamentally different from, and inferior to, those of the West (Said, 1979).

Furthermore, the pervasive morbidity within working-class communities in oil cities created a context in which the oil company could disavow work-related hazards in the industry. Instead, these hazards were attributed to external causes, often framed as inherent characteristics of the native communities. For instance, the prevalence of eye diseases in the field area, acknowledged even by company doctors to be linked to exposure to toxic gases (Dr. Yung⁶ letter, cited in Mo'taghedi, 2019), was portrayed as a natural ailment for Iranian people (IOR, Administration Report of the Persian Gulf Political Residency for the

⁶ APOC doctor in oil field areas

Years 1911-1914').

The discourse surrounding public health and sanitation served as a persistent colonial practice for spatial segregation, designating the "native body" as the locus of "disease and infection" (Beverly, 2011). Through this discourse, bodies became the focal points for applying colonial urbanization, wherein racial segregation found justification under the guise of public health and sanitation (Beverly, 2011). In the oil cities of Khuzestan, public health and sanitation were central topics discussed by various stakeholders, including the British company, the Iranian government, oil workers, and other local residents.

Discussions around public health and sanitation, coupled with considerations of property relations, significantly influenced the built environment of oil cities. This discourse was partly a response to the global lessons learned in the aftermath of World War I, influencing perspectives on social reform, governance, management, and urban planning (Ehsani, 2014). However, it also had deep roots in the enduring colonial imaginary that thrived on the perpetual "othering" of the native population (Opperman, 2019).

For the British oil company, the native sectors of oil cities and their residents were viewed as a persistent health threat that seemed nearly impossible to mitigate. The *native city* was characterized in various ways, being labeled as "the real plague spot," "unsanitary beyond imagination," and described as having "ground [which is] sodden and impregnated with disease germs" (BP Archive ARC 70209, 1923-1924, quoted in Visser, 2007). The native population, perceived as lacking "even an elementary knowledge of the principles of sanitation," was regarded as the potential source of "infections and contagious diseases"

(Cooper, 1926, quoted in Ehsani, 2014). The immediate solution to address this perceived threat was to intensify measures of racial segregation.

The discourse on sanitation and public health served as an acceptable justification for maintaining racial segregation. Segregation measures were meticulously upheld to the extent that no public space was shared among Iranian, British, and Indian residents (Elling, 2015). For oil company managers, it was considered natural that Europeans and "eastern people" should have separate spaces and needs because "in any other countries in the east, Europeans live apart" (BP Archive, ARC 67590, 1938). However, it proved insufficient to guarantee the safety of the European quarter.

Although the British oil company wanted to create isolated enclaves reserved for European staff, these exclusive and homogeneous spaces were never absolute and constantly required compromise. For instance, the isolated European neighborhoods were vulnerable to epidemic diseases like cholera, malaria, and typhoid that often originated from slum areas and were transmitted into the European areas by servants (BP Archive 67590, 1938). Therefore, careful segregation proved insufficient to guarantee the safety of the European quarter, and the need for urban planning and sanitation programs for all was felt.

From the 1930s onward, APOC took steps toward social policies aimed at controlling the population by regulating their daily lives. Kaveh Ehsani (2014) labels these policies as "reluctant paternalism," revolving around sanitary and public health measures. Ehsani places such policies within a broader global context, framing them as responses to post-World War II changes in industrial capitalism's approach to the working class (Ehsani,

2014).

In this context, the British oil company found itself needing to portray itself as a benevolent colonial power that brought prosperity and well-being to the indigenous population, transforming a barren wasteland into a modern oasis and its "wild" inhabitants into productive workers and civilians (Zagagi, 2018). Advertising this image also aimed to reflect its Western prestige and establish a distinction from the indigenous population, a goal that, despite heavy propaganda efforts, ultimately failed due to the undeniable poverty and destitution of Iranian oil workers in Khuzestan. In the early days of oil nationalization in 1951, William Harriman, Truman's special envoy to the Iranian government, acknowledged during his visit to Abadan that "Although slums are typical of the Middle East, they are shocking for housing employees of a large Western oil company" (Harriman, 1951). Figure 17 shows poor living conditions and the lack of urban facilities in workers' neighborhoods.

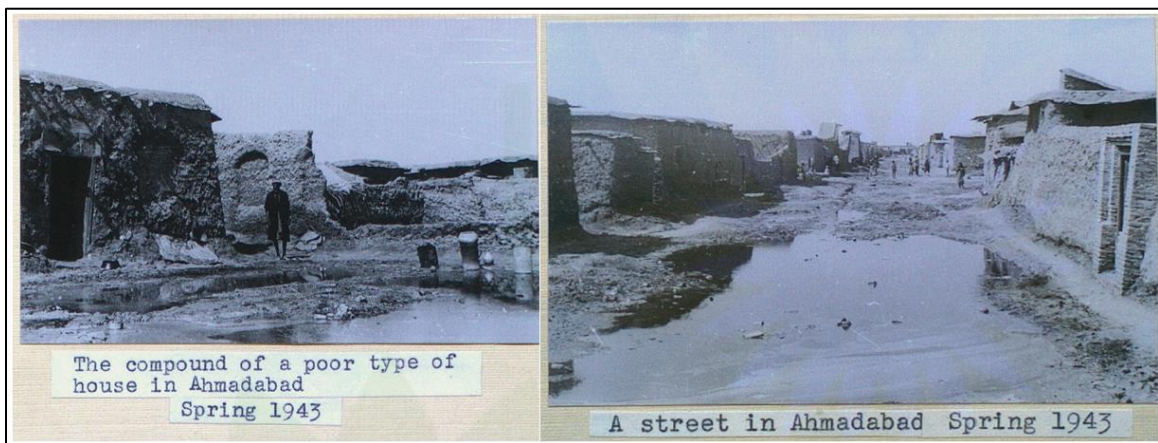


Figure 17 Poor condition of Abadan's workers' neighborhood, 1943. Source: BP ARC 36506

More significantly, applying such policies in the oil industry aimed at embedding its

exclusive power in the oil city and creating a homogeneous and hierarchical space where all aspects of its workers' lives could be controlled. This tendency aligns with what Lefebvre calls the "abstract space of capitalism" (Lefebvre, 1992), a space produced by political power in service of economic goals and meant to stabilize hierarchical orders.

In Khuzestan, the imperatives of oil production required creating a space that could uphold the hierarchical order. This was achieved through top-down urban planning projects legitimized by the sanitation and public health discourse, supported by scientific knowledge. As expected, these paternalistic policies were accompanied by violence. They heightened the existing tension in oil cities over space, involving the oil company, the Iranian government, and residents of oil cities. A notable example of such policies was the destruction of "native" bazaars to build new "sanitary" markets and wider streets in Abadan, Mohammareh, and Masjed-Suleiman in 1924, resulting in the demolition of many huts, shops, and coffee houses, which in return received resistance from displaced Iranian residents (Ehsani, 2014; Zagagi, 2018).

Another example of controlling residents through sanitation discourse is epidemic control programs by the company, where dispossession and displacement of population accrued on a large scale. If someone contracted an epidemic disease, the oil company disinfected the surrounding houses, burned the patient's belongings, demolished the house, and sent the patient into quarantine. In the event of death, several neighboring huts around the deceased person's house were set on fire. Consequently, families and relatives often concealed the deaths of individuals, and the deceased were sometimes buried inside the hut

(Mo'taghedi, 2019). If a person recovering from illness emerged from quarantine, they were not permitted to rebuild in the previous location and had to find a new place for housing (Mo'taghedi, 2019).

Control over drinking water facilities was another method used to influence and manage the population, particularly given the persistent issue of water contamination. By 1925, the oil company had installed a few drinking fountains and water tankers in various locations in Abadan intended for public use. The company applied its authority to prohibit access to these facilities whenever necessary, especially during unrest and workers' protests. For instance, during confrontations between the people of Abadan and the oil company over the reconstruction of Abadan's sanitary market in 1924, APOC closed public water fountains to Iranians, and only Indian workers were permitted to use them (Mo'taghedi, 2019).

The oil company regularly used D.D.T. (dichlorodiphenyltrichloroethane) for disinfection and sterilization in bathhouses and workers' residences, conducting this practice every other month (ILO, 1950). In the 1960s, the company provided workers up to four liters a month of free insecticides. A reward system was in place for workers who used more pesticides at home (Jafroudi, 2017). DDT's widespread and diffuse effects make it challenging to pinpoint specific health consequences in both space and time (Opperman, 2019). Therefore, the long-term health impacts of such extensive DDT use on the residents of oil cities remain unknown, as there is no available research or reports on this matter. Nevertheless, we know that DDT exposure causes various health issues, including an

increased risk of pancreatic and breast cancer, liver disease, reduced fertility, and other reproductive problems (Opperman, 2019).

These plans often involved comparing the Iranian population to European cities to determine the necessary levels of health and sanitation infrastructure. For instance, in 1934, Scottish urban planner J.M. Wilson argued that directing company area's sewage into rivers was acceptable, as similar practices occurred in Europe (BP Archive, ARC. 49673, 1934). Another example involves discussions on options for installing running water, with APOC advisers, suggesting that "Hughes' Rotary" was the best waste prevention method for *eastern* people, assuming their cultural sensitivity and standards were low (Visser, 2007).

The process of "othering" extended beyond the native people to include the native ecology of Khuzestan. British observations often portrayed the region as a "desert" with "almost non-existent" respectable flora" (Matthews, 1931), despite Khuzestan having a diverse natural landscape that includes deserts, alluvial plains, wetlands, and mountains. The characterization of the entire region as an unplanted and uninhabited desert reflects a common colonial strategy to dispossess native populations. In the British oil company's plan for the Abadan Island refinery, the entire island was depicted as empty, even though at least 55 farming and fishing communities were residing there, with a thriving date industry and expanding areas under cultivation each year (Mortaheb, 2020).

The British undertook efforts to modify the natural landscape and green spaces in their isolated neighborhoods by introducing hundreds of trees and shrubs, primarily from

northern India, with the assistance of European gardeners (Matthews, 1931). This initiative aimed to create an environment reminiscent of European suburban landscapes. The specific consequences of this extensive manipulation of vegetation are not documented, but maintaining non-native trees and vegetation in Khuzestan's harsh conditions required substantial amounts of water, pesticides, and chemicals. Simultaneously, native vegetation, including date trees, faced constant threats from oil company projects such as urban projects, road and pipeline constructions (Coll 30/9 'Persian Gulf: Administration Reports 1926-1938). These interventions could have had significant ecological impacts on the native flora of the region, but the specific details and outcomes would require more detailed environmental studies.

Social Reproduction in the Cracks of the Abstract Space of Oil

As Henri Lefebvre (1992) asserts, *the abstract* space of capitalism, despite its homogenizing tendency, is never *absolute*. Neither the space itself nor the discourse surrounding it can be sustained as an absolute and unchanging entity. Instead, they constantly require compromise. The social relations embedded in such spaces must be continually reproduced and reimposed.

An illustrative example of this dynamic is the oil company's concern for the safety of European staff. Despite attempts to isolate them from the native town, the ongoing threat of epidemics from the native areas and pollution from the refinery persisted. This concern reflects the need for a continuous process of revision, compromise, and the re-establishment of the hierarchical order of urban space. This process can never completely suppress or resolve the inherent contradictions that give rise to such spaces (Butler, 2004).

While initially shaped by the British oil company, the colonial discourse on sanitation and health was not exclusive to its narrative. Contrary to the portrayal of “eastern” people in the company documents as ignorant about sanitation, residents, and workers in oil cities were keenly aware of their living conditions and did not accept them as natural or normal. In fact, they actively sought improvements in health and sanitation and demanded measures to address the urgent needs of their communities.

Evidence supporting the willingness of native workers to embrace new health and sanitation regulations lies in their trust and positive relationships with company doctors. Figures like Doctor Yung became representatives for negotiations with communities in the oilfield areas. Workers regularly asked company doctors for sanitary advice (Azerbaijani, 2020). This indicates a level of cooperation and recognition among workers regarding the importance of health and sanitation measures. As an eyewitness describes, during difficult times of strikes and resistance, workers made greater efforts to keep the city clean and adhere more strictly to sanitary regulations, viewing this as part of their collective political aspirations (Azerbaijani, 2020).

The grievances of the working class to embrace sanitary regulation differed from those of the oil company. For the workers, the primary concern was the threat to their ability for social reproduction due to the lack of sanitation measures and food security. The alarmingly high rates of death, infant mortality, and illness among oil city residents were significant issues that troubled the oil company, but more deeply, the workers themselves.

The stark contrast in living conditions between Iranian oil workers and the British was a

source of bitter observation and deep resentment among the workers. The noticeable disparities, particularly in terms of health and sanitation measures, were a constant reminder of the racial hierarchy imposed by the colonial company. Ironically, what the company intended to highlight as a justification for maintaining racial distinctions became a rallying point for the oil cities' population, fueling their determination to challenge the existing inequalities.

The discourse of the unjust difference between Iranians and Europeans was featured prominently in worker protests, where demonstrators repeatedly compared their appalling living conditions and the comfortable lifestyle in the British bungalows and called for change. In the 1946 strike in Abadan, a woman named Maryam, addressing strikers, said: “The salaries which they give to Iranians are the wages of their dogs [spending more on dog food than on workers’ wages]” (Quoted in Atabaki, 2017).

The development of cities around the oil industry in Khuzestan intertwined closely with the industry itself, making the struggle between different social classes a widespread issue. This struggle went beyond just the factories and affected the entire city. Participation in protests extended beyond the realm of workers and their families to encompass a diverse cohort, including shopkeepers, unemployed laborers, and business proprietors. These collective aspirations exceeded the limits of the workplace, traversing broader societal aspects. In addition to calls for enhanced wages and workplace safety, there were fervent appeals for improved housing conditions, sanitation standards, and the preservation of dignity (Azerbaijani, 2020). Intriguingly, the company's archival records often failed to

register such demands, possibly perceiving them as triviality or irrelevance.

In a specific historical instance, one of the demands of the 1914 Aghajari strike, an isolated oil town in the oilfield region, was for the oil company to provide a midwife for oil workers' households (Fateh, 1956). In other instances, protestors articulated their desire for not only improved remuneration and reduced working hours but also an end to verbal and physical abuse against workers within the workplace (Safavi, 2017) and respectful conduct towards workers and their women by APOC staff (Azerbaijani, 2020).

Indeed, the ability of the oil city's inhabitants to survive and maintain hope for their future despite facing numerous threats to their health and well-being, such as toxicity, malnutrition, and disease, was due to inherent contradictions within the very structure of the oil city itself. The efforts by the oil company, along with the contributions of local elites and the government, to maintain a perfectly controlled and homogeneous environment were not entirely successful. This failure created openings that allowed the inhabitants to sustain themselves. Therefore, life in Khuzestan's oil cities transcended the concept of a "necropolis," as authors like McIntyre & Nast (2011) and Davies (2018) have suggested. Instead, it represented a form of "quiet encroachment" (Bayat, 1997), enabling residents to sustain their daily lives.

Residents in oil cities actively engaged in crafting alternative spaces that stood in contrast to the capitalist-colonialist environment fostered by the oil industry. Slums emerged simultaneously with the construction of the Abadan refinery, some of which appeared on APOC's concession land and posed myriad challenges for APOC in attempting to eradicate

them. These slums, constructed from whatever materials were at hand—often industrial discards, cardboard boxes, drums, reeds, and tents (Ehsani, 2014)—were spaces where oil workers and their families resisted the hegemony of the colonial-capitalist environment and asserted their own possibilities.

These slums, although lacking proper accommodations and amenities, were the only spaces in Abadan in which there was no racial, ethnic, or occupational segregation in place (BP Archive, ArcRef 70209, 1924). Another manifestation of this *differential space* (Lefebvre, [1974] 1992) could be found in the surrounding indigenous villages, where residents participated in city affairs as workers, shopkeepers, guards, servants, and more. These spaces occasionally served as meeting points for workers to gather, organize, and mobilize for strikes and protests beyond the watchful gaze of the oil company (Azarbayjani, 2020).

From the mid-1930s, as the oil company gradually expanded its housing initiatives and sanitation facilities and began offering subsidized food to Iranian employees, initial progress toward improving living conditions was made. However, implementing top-down urban planning did not occur without its contradictions. One significant contradiction was that these plans primarily aimed to benefit only a tiny fraction of the oil workforce. Therefore, the hierarchical spatial dynamics of the oil industry persisted even after oil nationalization. The vestiges of colonial space endured, contributing to the solidification of a more enduring form of population division. This division extended beyond various strata of oil employees to encompass a broader differentiation between oil and non-oil employees. This broader category included contract oil workers, often comprised of some

of the most marginalized segments of the population, such as indigenous Arab people and their families (See Chapter Five).

Within this complex spatial structure, the inhabitants of the oil city managed to carve out their own differential spaces. They occupied vacant housing and shelters, persistently resisting police pressure to evacuate. Describing one such occupied space, a resident noted:

In between each pair of flats, you'd find these one-story buildings with two units each. Now, each unit had five rooms lined up, and right across from these rooms, there was a long courtyard, a bathroom, and a washroom. Word has it that these buildings used to be Indian barracks, meant to keep the early Brits who came to Abadan to work for the oil company safe. But as time rolled on, they turned into living quarters for folks who weren't directly with the oil company but worked in some way to support those who were. Our family was one of those; apparently, life there was kind of tangled up with the Indians in a not-so-easy way.

Folks who got here early and bagged these vacant buildings had more space to spread their mats, sometimes taking up three or even five rooms. But as more and more people arrived, you had to make do with fewer rooms. These houses were basically considered as taken over. No one paid rent for them, and there were no official papers involved. Every now and then, these guards would show up and insist the rooms should be cleared out, but no one paid them much mind. (Torossian, 2012)

Numerous workers' residences were shared by multiple households, with many families confined to a single room. In 1956, the population density in the British-controlled area ranged from 33 to 60 inhabitants per hectare, while in the company-owned workers' area, it was up to 150, and in the slum area, reaching as high as 650 inhabitants per hectare (Seccombe & Lawless, 1987). Despite the health challenges associated with such high

population density, it allowed many families to secure a shelter for themselves.

At the fringes of the oil industry, residents crafted their social spaces from areas that were exclusive to European and high-rank staff. For instance, working-class children, unable to afford admission to the cinema, a luxury exclusive to upper-class Iranians and Europeans, found creative ways to partake in the experience, like using fake tickets or watching movies over the walls of open-air cinemas. This small example illustrates how the oil working class navigated within the hierarchical space imposed by the oil industry.

Likewise, while the pervasive odor of noxious gases in oil towns was the harbinger of death and sickness, it simultaneously symbolized resilience and hope for a better future for the oil city's inhabitants. As Valdivia (2018) describes, the Petro-economy is toxic and enabling at the same time. This duality is not due to the oil industry's persistent promotion of itself as a symbol of progress and development, urging people to endure its pollution. Instead, it is intricately connected to the aspirations for mobility, improvement, and dignified life that residents associate with the circulation of oil, even while acknowledging its inherent toxicity (Valdivia, 2018). In Khuzestan, the "enabling" aspect of the oil economy was tied to the ways in which people could navigate their daily lives despite the all-encompassing and toxic nature of the oil industry.

Conclusion

The stories of social reproduction under the severe environmental challenges in Khuzestan's oil cities reveal stories about the spatial dynamics of oil colonialism and oil capitalism. In this chapter, I explored some of these dynamics. From the early days, the

distribution of conditions for a healthy life was highly unequal in oil cities. The poorest sections of the population suffered the highest rates of death and injuries. In this context, urban infrastructure and sanitation facilities in the oil urban space served as mechanisms of control and as a means of setting lines between those who are illegible to be a member of the colonial city (Myers, 2020), shaping the social reproduction of oil communities to align with the imperatives of oil production productivity. The discourse surrounding sanitation and public health, which drew attention to the dismal living conditions in the oil region, played a role in constructing an urban space with intended hierarchies and homogeneity.

This chapter presents a clear case of environmental injustice and environmental racism in the early development of the oil industry in Khuzestan's oil cities. Here, racialized native communities bore a disproportionate burden of environmental risks and hazards due to inequitable exposure to pollution and limited access to environmental benefits.

I argue that environmental injustice in this context must be viewed through the lens of petro-colonialism, prevalent in the Khuzestan oil industry from the early to mid-20th century. The analysis explored how colonial and racist perceptions held by the British oil company influenced various scales of interaction, from regional to bodily.

Integrating the concept of environmental racism with urban political ecology and post-colonial theories about othering bodies and colonial space, alongside Henri Lefebvre's ideas of "differential space," this chapter sought to understand social reproduction in oil cities. I argued that viewing everyday life in oil cities solely in terms of injustice,

deterioration, and violence is insufficient. Instead, attention must be paid to how various segments of oil city residents across different racial, class, ethnic, and gender groups sought hope and a better life amidst the oppressive spaces of the oil industry.

Chapter Four: Women in the Oil Industry in Khuzestan and Reproduction of Gender Relationships

In this chapter, drawing from archival resources and existing studies, I unpack the significance of gender relations in the urban space of the oil city. I also highlight the complexity of the presence of European women in Khuzestan, discussing how it influenced the spatial organization of these cities. Additionally, I draw attention to a vital yet often overlooked aspect of work in the oil city: domestic work carried out by male and female servants and women at home. Then, I delve into the complexities surrounding the matter of sex and how it was projected onto local women, shaping conflicts within the oil city. Ultimately, I argue that women actively shaped alternative spaces within the oil city and exhibited solid political subjectivity.

The scarcity of information on women, their labor, and living conditions in archival resources, whether Iranian, Indian, or British, is a notable challenge. A query on British Petroleum's (BP) Archive database using terms like “woman,” “women,” “female,” “lady,” “and ladies” resulted in a mere 16 records out of a vast database containing approximately 100,000 items (Johnson 2004). Similarly, in the British Library’s India Office Records (IOR), there is only one collection related to women, containing letters regarding permission for British women to come to Khuzestan. Aside from these instances, women appear in the archives mainly in reports of crimes and violence against them. This lack of documentation concerning women in the oil archives emphasizes the entrenched masculinity of the oil industry. Both numerically and hierarchically, men overwhelmingly dominated the oil industry, and this gender bias is reflected in the available historical

records (McKee, 2014).

No information about Indian women in Khuzestan was found in the available archives. One reason for this is that Indian employees, except for a few high-ranking staff, were generally not permitted to bring their wives to Khuzestan, resulting in a predominantly single male Indian immigrant population (Atabaki, 2015). The living conditions of the few Indian women who were in Khuzestan between 1908 and 1950 are likely documented in the oral histories and diaries of Indian men and women. However, such sources were not available to me. Recognizing the valuable insights that the history of Indian women could have added to this dissertation, particularly in understanding the intersection of race and gender in shaping the oil city, I regretfully omit this topic, leaving the opportunity for future researchers to explore this area further.

The academic literature on Khuzestan's oil cities has predominantly marginalized women's stories, with a limited explicit focus on unpacking the history of gender relations in the region. Notable works such as Mo'taghedi's "Oil and Life" (2019) and analyses on women's political subjectivity, like Cronin's work (2010), touch on aspects of women's experiences in the context of oil cities. However, these works do not explicitly delve into the detailed history of gender relations in Khuzestan's oil regions.

Other sources, such as diaries, have traces of women's lives in Khuzestan oil cities. These narratives shed light on their living conditions, their challenges, instances of violence against them, and their acts of resistance and bravery. Often, the primary focus of these accounts is not on women; rather, they focus on broader challenges, such as the oppression

and cruelty imposed by the British colonizer.

Despite their oversight in oil archives and literature, women played a crucial role in shaping oil cities and the socio-political changes in the region. The oil environmental pollution profoundly impacted them, and while struggling to enhance the lives of their families and themselves, women significantly contributed to socio-political dynamics. At the same time, controlling and reproducing gender relationships was crucial for the urbanization process of the oil industry in Khuzestan.

Spatial and geographical considerations profoundly influenced the structuring of gender politics within colonial politics. To comprehensively grasp these dynamics, three perspectives are particularly relevant. First, I examine through the lens of urban planning and architecture how the imperative of the presence of white women shaped developments in Khuzestan. Second, I explore the role of sexual activity in the oil region and shed light on its impact on colonial relationships. Lastly, I analyze how the necessity for domestic service unveils the role of Iranian women in the oil region. Each of these dimensions contributed to a nuanced understanding of how gender politics intersected with the petro-colonial landscape.

Colonial Gender Relations in the Khuzestan's Oil Region

In the early 20th century, akin to numerous other colonial contexts of that era, gender and sexuality were problematic issues in the Khuzestan oil region. This matter played a pivotal role in shaping the dynamics between the colonizing powers and the colonized population. Gender inequalities were fundamental to the framework of colonial racism and imperial

authority. The affirmation of European supremacy, particularly in terms of patriotic and racial manhood, was a defining feature of imperial domination (Stoler, 1989). In other oil-producing regions within the Global South, a similar rationale regarding gender relationships was applied. For instance, in Libya, Bini (2018) contends that United States oil companies replicated gender, class, and racial hierarchies by positioning white women as symbols and agents of America's corporate civilizing mission.

In the initial phases of oil development in Khuzestan, there was considerable anxiety regarding the presence of women, whether local or European. APOC exercised strict control over movements and disallowed those who did not conform, irrespective of their nationality (Ehsani, 2014). British women, in particular, faced significant restrictions on entering Khuzestan. In the 1920s, numerous letters from British women expressing their desire to join their husbands in Khuzestan were sent to the British Foreign Minister and the consulate in Mohamnareh. However, most of these requests were denied, citing security precautions (IOR, File 3816/1916 'Persia, As to allowing English ladies to proceed to Persia). The prevailing perception was that the environment of an Eastern country inherently posed risks for European ladies. In 1913, Dr. Ross, an English female doctor, applied to serve in Khuzestan for APOC, but Charles Greenway, the managing director, expressed surprise at the application, writing to a company board director that "it is not advisable to employ a lady doctor for Persia" (Johnson, 2004).

Even if British wives and women managed to reside in Khuzestan, they were subjected to severe surveillance, and APOC meticulously controlled their movements. Johnson (2004)

draws a parallel between the status of company wives and the status of colonized nationalities, highlighting that both were denied individuality and reduced to their racial identification, often associated with predetermined (typically negative) traits. Thus, the status of British women was derived from that of their husbands. The oil company employed only a small number of white women.

A significant reason for the AIOC's reluctance to allow white women to come to Khuzestan was the "exorbitant" expenses associated with accommodation, housing, and medical services for families. They estimated that the costs for a European woman in the company were equivalent to six to eight men (IOR, File 3816/1916 'Persia. As to allowing English ladies to proceed to Persia). But why would a European woman cause such high costs for the company?

The answer lies in the perception that European women were considered the most visible symbol of white communities, embodying the particular aspects of colonial culture and the standard of living that set them apart from native people. The company believed that if the needs of married staff could not be adequately met, there would be a risk that they might lead to a lower standard of life, posing a threat to European prestige (Stoler, 1989). The maintenance of "white" prestige was a matter of utmost seriousness, and the presence of white people engaging in lower-ranking work was strictly avoided. A recently hired white staff from 1945 recounts an incident, stating,

I was put in charge of installing windows in the refineries and my job was to supervise [East] Indian craftsmen. Of course, from being a craftsman I became a person who held the ruler and the tools, as this was not my

profession. Then the responsible British official came by and could not bear the sight of a white man doing manual labor, and he informed the manager of our company accordingly. The next day my assignment was changed and I was made supervisor of casting pillars. I knew something about that. I supervised the 'coolies', Persian coolies. (quoted in Shenhav, 2002)

Eventually, English women got permission to join their husbands in Khuzestan's oil cities for reasons I will discuss later in this chapter. The presence of white women necessitated European communities to fortify their unity, delineate their boundaries, and explicitly define their social space (Stoler, 1989). It became crucial to accentuate racial distinctions within urban spaces, making the separation of colonial communities more apparent. European women were assumed to require more metropolitan amenities, expansive surroundings, and discrete, enclosed quarters (Stoler, 1989).

Before the 1920s, when Abadan housed fewer than a hundred Europeans, all of whom were single men, the company had erected only one permanent bungalow in the Braim area for the Abadan manager (Ehsani, 2014). However, as British staff began bringing their wives, Braim transformed into an extremely isolated and surveilled area. Characterized by spacious houses, private gardens, and world-class urban facilities, including a sewage system, electricity, and an exclusive road accessible only to a select few (Eftekhari Diary in Bayat & Tafreshi, 2021). These segregationist standards were considered what white women "deserved" and, more significantly, were imperative for upholding white male prestige (Stoler, 1989).

In essence, white women were expected to uphold elevated standards of living, residing in

insulated social spaces adorned with the cultural attributes of European life. The standard houses for married European senior staff, for instance, typically featured four or five bedrooms, two bathrooms, a servant's room, a storage area, and a courtyard (Seccombe & Lawless, 1987). British women were exempted from housework responsibilities, relying on Indian and Iranian servants for such tasks. Their role was more supervisory: "It is not suggested that the lady inhabitants of Abadan should actually do their own cooking in the cookhouses attached to the bungalows. But they can supervise the preparation of food and control the cook" (BP Archive, ARC 49700, quoted in Ehsani, 2014).

However, these women themselves were subject to control and limitations. In Khuzestan, white women could only be employed in specific professional capacities, such as nurses, radiographers, physiotherapists, teachers, or in "similar professional capacities." Company policies explicitly excluded the employment of wives, daughters, or other female family members of British staff (Jafroudi, 2017). Even when hired, female staff were denied involvement in decision-making processes; for instance, nurses, mainly women, were the only class of employees who were excluded from full membership in British social clubs in Khuzestan and had no voting rights (Johnson, 2004).

The status of women held the same symbolic importance for the oil workers. In fact, women, local or European, marked the line between distinct types of life flowing in the oil city. Just as European women symbolized colonial economic and cultural superiority for the British company, they represented the antithesis of Iranian workers. The humiliation experienced by workers when contrasting the living conditions of their women with British

women is evident in oral history and fictional literature. For instance, Yosef Eftekhari, in describing the misery of the Iranian working class in Abadan, stresses the bitterness of this humiliation:

[working class women's] attire comprised tattered, lengthy dresses that inadequately veiled a meager portion of their bodies. [...] With their elegantly dressed women, the English would stop these women, who were the true owners of the oil wealth, to capture photographs of their misery. This photo shoot was extremely humiliating. [...] Regrettably, these scenes were the source of amusement and laughter for the English men and women. What peculiar affliction or habit prompts people to derive joy from witnessing the distressing circumstances of others? During photography, the mirth, amusement, and derision exhibited by the English, in the eyes of the toiling men and women, were markedly more offensive and distressing than scenes of poverty, hunger, and wretchedness. Such actions and conduct on the English's part further fueled the workers' resentment, directed squarely against the company. (in Bayat & Tafreshi, 2021).



Figure 18 Abadan Boat Club, 1956. Company ladies pass by a local Arab woman who apparently begs for money. Photo by: Inge Morath, 1956

Domestic Work in Oil City: Servants and Women

The presence of European women spurred new patterns of consumption and the emergence of social services tailored to these fresh demands. The necessity for servants was one such demand that transitioned from the noble family tradition of the West to Khuzestan. Solon T. Kimball, an American ethnographer who visited American oil towns in Saudi Arabia in 1955, noticed that all American households employed local and Indian servants, incurring substantial costs for the American company, but this continued nevertheless, "as a matter of status rather than necessity" (Kimball, 1956: 478). A similar situation existed in Khuzestan's oil cities: "A [British] man can't be expected to go home and prepare or supervise his food" (BP Archive, ARC 49700, quoted in Ehsani, 2014). And "Like all European[s] in hot, they had their cooks and house servants who bought the household

supplies, and perform the most arduous housekeeping tasks” (Kemp, 1953: 35). By 1950, the number of servants (or houseboys) exceeded 2,000 in the company area in Abadan (Ehsani, 2014). Initially, most servants were Indian men, particularly the cooks, as British managers believed they were more acquainted with English tastes (Ehsani, 2014).

European households heavily relied on domestic servants for various tasks such as cooking, cleaning, garbage disposal, lawn maintenance, laundry, carrying goods, and childcare (Ehsani, 2014). A description by a European emissary underscores the significance of servants in maintaining gender and racial hierarchies in the oil industry:

The work is done in the English style, with coolies. The European worker there doesn't know what it is to lift a piece of iron or a sledgehammer. He stands and waits for the coolies to come over to him and do the dirty work. It is the same when you enter a hall — the coolie or 'boy' serves you. In the evening, after work, he shines the men's shoes, makes the bed, arranges the netting outside; in the morning he comes and removes the netting and brings it into the room. And so it goes. Life there is easy from this point of view. And the members of our group adjusted very quickly to this style of work and life (quoted in Shenhav, 2002).

The emphasis on white prestige in gender politics manifested itself in the domestic space as well. The housing architecture was tailored to respond to the need for domestic service. In predominantly British neighborhoods, some houses included rooms intended for servants' quarters. These rooms were often situated at the back of the house and were poorly designed compared to the actual residence used by the British employee of the oil refinery and his family. They were commonly referred to as "boy rooms" (Karimi & Afshar, 2017). Figure 19 illustrates an example of a servant quarter compared to the bungalow quarter of

the same building. The photo was taken in 2000, after enhancements, including the addition of amenities like air conditioning, were made to the original 1950 building. Many other servants lived in the native town with other workers.



Figure 19 Comparing a British Bangalow (right-taken in 1950) and a servant quarter (left-taken in 2000)
Source: (Dandly, 2015)

Stoler (1989) contends that in the 19th and early 20th centuries, salaries of Europeans in colonial areas were deliberately kept low because native people provided domestic services for which new European recruits would otherwise have had to pay. The substantial number of servants, whose wages were extremely low, was advantageous for the oil industry as it allowed the maintenance of lower wages for its white staff. One of the primary concerns among British engineers in considering positions in the oil region was whether the company would provide them with "free servants" (Ehsani, 2014). This underscores the significance of domestic work in the oil industry's urbanization process.

Domestic work was not only crucial for the colonizers but also vital for the oil workers. For workers, it was primarily women who provided either free or very cheap domestic labor. The work of women enabled oil workers (who were exclusively men) to sustain their livelihood. According to one participant in this research, in the 1930s, their grandfather

and granduncle moved from a village in northern Khuzestan to Ahwaz, bringing their sister with them only because "she could cook for them and take care of their daily affairs."

Women played a key role in providing food and fuel for households, which was often challenging to obtain and required significant work outside the workplace to acquire. For instance, an eyewitness describes the hardship of gathering cooking fuel;

The English would pour dirty, unusable oil into pits, and women would come there to gather fuel for their homes (See Figure 20). The oil would splash on their heads and clothes [...] With this black substance, fuel for cooking was provided free of charge, but with considerable hardship (Eftekhari Diery, in Bayat & Tafreshi, 2021).

This practice helped save a significant portion of the meager earnings of an oil worker household.

Women's domestic work proved vital during crises, such as World War II and the severe famine in its aftermath. To mitigate famine and address food scarcity, the APOC distributed 50 kilograms of flour to each worker, requiring women to bake at home. Therefore, the free labor of women saved many working-class lives and company money (Khosrow-Shahi, 2013).



Figure 20 Women gather oil sludge for fuel near oil fields in the 1950s. Source: Iran's Petroleum Museum

Sex in the Oil City

As previously discussed, in the early stages, strict rules were in place prohibiting British and other white staff from bringing their families to the oil region. Both the APOC and the British consulate imposed this restriction. To navigate this challenge, APOC decided to hire only single or widowed men (IOR, 'Persia, As to allowing English ladies to proceed to Persia 1916). In a letter from 1910, one manager emphasized that employees "must not consider the question of marriage during the earlier stages of the Company's work" because their energies needed to be devoted to the essential parts of the Company's program (Johnson, 2004). This restriction also applied to other British employees in Khuzestan. In

a letter to his family, Sir Arnold Wilson mentioned that he was not allowed to get married after three years of service with the political department of the British consulate (Wilson, 1942).

However, this condition proved unsustainable as it became evident that one of the most critical needs of British staff was not being addressed: the need for sex. British Petroleum records contain notable insights into the demand for women in the oil industry, revealing instances where men either left their posts or declined positions due to what was perceived as the unbearable hardship of sexual deprivation: “There is very great difficulty in keeping good men; the real trouble arises out of the scarcity of women” (Johnson, 2004). In 1920, D. B. Kittermaster, who visited Iran to report on life in the oil fields and published it in Naft Magazine, described the challenge, stating, “It is a condition of things that must lead, in the case of some men, to a state of extreme nervous tension, after a summer or two in the country” and “It is a condition of things that one would expect to lead to much irregular conduct with the married women” (Johnson, 2004).

The marital status of Iranian workers wasn't a concern for the oil company as long as they were not entitled to company accommodation. However, the company preferred single men, particularly those who had left their wives and children outside the oil region. Wilson (1932) explicitly explains the rationale behind this approach:

The labor staff were bachelors, with bachelor standard of comfort, and content with a bunk in a communal sleeping apartments in winter, and with a couch in the grass in summer, when men began to settle down, they brought their wives and families; housing became necessary, and with it

sanitary regulations: a proper water supply had to be provided and a reasonably clean bazaar, where food could be bought (p 98).

The policy of recruiting non-married men was eventually relaxed. However, the status of women remained a controversial subject, perceived as both a "necessary good" and a "threatening evil." Their absence, presence, and identity were continually assessed in relation to the productivity of the oil industry. Initially, APOC viewed wives as potential distractions to the workforce, but later, they were considered necessary for providing domestic and sexual care for efficient operation. For instance, a communication from the London head office in 1925 to a General Manager in the Middle East stated, "No one would question for a moment the good influence exerted on the whole Staff by the presence of ladies at the Fields and at Abadan." The message highlighted that "married men live more steadily, are better cared for," enabling them to "cheerfully and wholeheartedly carry out their duties" compared to bachelors who only had themselves to consider (quoted in Johnson, 2004).

However, not everyone's need for sex was equally recognized. The prohibition of marriage was not relaxed for British women until 1955 (Johnson, 2004), and Indian employees, except for a small portion of high-ranking staff, were never allowed to bring their wives to Khuzestan (Atabaki, 2015). The ban on Indian staff was strict and non-negotiable. Letters from Indian employees in the oil industry addressed to the Shah of Iran sought his mediation in persuading APOC to permit them to marry or bring their wives, thus avoiding any "non-Islamic" actions resulting from sexual deprivation (Atabaki, 2015).

Part of the need for sexual companionship for men in oil cities was addressed through prostitution. As Ferrier (1982) notes, "sexual privation was generally alleviated by a visit to a 'dentist' at Basra." Even the establishment of an official brothel in Abadan was discussed among oil managers but ultimately rejected (Johnson, 2004). A more moderate approach was suggested: "A few days change to Basra, to Bombay, even to Ahwaz from Abadan (even if it does not mean any sexual gratification) [will] constitute some relief to the strain which to some men, though I do not say to all, must be as grim as it is unnatural" (Johnson, 2004).

The need for sex was, therefore, essentially projected onto local women. Arnold Wilson (1942) noted in his records that Indian employees were pleased that they could find women for "temporary" marriages among local communities. There was a large sex worker population in Khuzestan's oil cities, specifically in Abadan and Ahwaz. The red-light district of Abadan was the second largest in the country before the 1979 revolution (Dezhamkhooy & Papoli-Yazdi, 2020).

The services of prostitutes were vital for the operation of the oil industry from its early days to mitigate the high rate of turnover within the oil company. However, details about these women and their living conditions are scarce. Questions about the number of prostitutes, their background, and whether they moved to the oil region voluntarily or through criminal channels are not documented in the available archival materials. More information can be gleaned from oral histories and other stories, such as those related to urban conflicts.

The accounts of urban conflicts in oil cities, particularly those sparked by disputes over women, often centered around sex workers. Here are a few instances:

1920 Incident: An Arab woman, Haniyeh, mistaken for a prostitute, was raped by a British manager and subsequently committed suicide. This tragedy led Iranian workers to join Indian workers in a strike. Arab women played a vocal role in this strike, demanding justice for Haniyeh (Azerbaijani, 2021).

1925 Incident: An Armenian staff member was discovered engaging in a sexual relationship with a Muslim Iranian woman in Ram Hormoz, an oil city within oil fields. This discovery caused significant unrest, and as a result, APOC was compelled to terminate the Armenian staff member (Mo'taghedi, 2019).

1942 Incident: Three Indian staff visited a prostitute in the Abadan Bazaar and allegedly left without paying for the services. In the ensuing confrontation, locals attacked the soldiers with stones, leading to a riot that extended into the Indian quarter (Elling, 2015).

In all these incidents, racial lines were drawn along gender lines, underscoring the complexity of sexual relations in a semi-colonial oil city. The conflicts highlight how the bodies of women became sites of contention between colonial power and resistance, emphasizing the structural role of gender relationships in the urbanization of oil production.

Women, Social Reproduction, and Political Struggle in the Oil City

Women had an extremely limited place in the oil industry. According to a 1950 report by

the International Labour Organization (ILO), only 783 women⁷ were employed in the Khuzestan oil industry out of a workforce of 60,000. Most of these women were engaged in roles related to medical services (such as nursing and hospital cleaning), educational clerks, and sanitary and laundry services, receiving the lowest wage compared to other occupations within the oil industry (ILO, 1950).

After the nationalization of the oil industry in 1951, many women lost their jobs (Safavi, 2017), and the remaining women continued to be employed primarily in lower-ranking positions such as stenographers, telephone operators, clerks, secretaries, and nurses (Jafroudi, 2017). Women, if employed, were often restricted to "non-graded" positions, limiting their opportunities for job mobility (Jafroudi, 2017). The exclusion of women from hiring in the oil industry was not unique to Khuzestan, but it was widespread globally. In Saudi Arabia's Aramco, for example, women's job mobility opportunities were practically non-existent (Kimball, 1956).

Women played a crucial role in providing household services for the large population of single men employed by the oil company. These services included cooking, cleaning, dressmaking, and laundry. As mentioned earlier, the majority of hired servants and cooks in senior staff houses were men. Female servants, predominantly self-employed, did not enjoy any hiring privileges. The services provided by these women were economically significant for the oil company, as it allowed the company to maintain low wages for its

⁷ The report did not specify the race of these employed women.

employees by leveraging the cheap labor provided by women. In 1947, Indian artisans raised complaints that "Dhobis" (local women who do laundry for money) had started charging higher rates. They were concerned about having to spend a larger portion of their wages on laundry or being forced to wash their own clothes (Coll 28/85S (2) 'Persia; Abadan situation 1946; Policy to be pursued by H.M.G. (Recommendations & General Appreciation).

In oil cities, where women had strong challenges from entering the main economic channels of the city, they were further marginalized, and therefore, gender-based division of labor became more entrenched. This situation diminished women's positions in autonomy and management in the face of challenges that emerged later.

Women who migrated to the oil region faced an immediate loss of their community network. The changes they experienced weren't confined to their settlement and housing alone; their entire way of life underwent a radical transformation. The swift shift from a communal existence to a highly monetized and individualistic social structure must have been distressing. While there are no specific reports on the mental well-being of women in the Khuzestan oil region, a study from the 1970s in Dhahran, Saudi Arabia, suggests that the isolation experienced by women in the oil town led to issues such as acute mental depression, persistent stress, and even physical illness" (Jones, 2017).

In Khuzestan, the role of women and the structure of the family underwent a restructuring to align with the new industrial requirements. Much like transitions occurring elsewhere, the shift from a pre-capitalist to a capitalist society in oil cities led to the monetization of

all social relationships. Earning a "wage" emerged as the primary productive activity, pushing women back into a "non-productive" sphere that wasn't considered "work" at all. In other words, following Bekker's (2007) perspective, there was a separation between the "means of production" and the "means of social reproduction," giving rise to a hierarchical socio-economic system.

In oil cities, a significant portion of women's activities became confined to the domestic sphere, with their livelihoods becoming solely dependent on the wages earned by male relatives. Rural and nomadic women who were once active contributors in their communities, engaged in the production of handicrafts, dairy, carpets, wool, and other essential commodities, found limited opportunities in the oil city for such productive activities.

Following migration, the physical environment of the oil city did not offer a space for women to participate in the productive sector. In the slums outside the company area, where a majority of the population resided, the high population density, reaching up to 650 inhabitants per hectare, did not allow women to continue their skilled handicrafts. Company houses typically consisted of one or two-bedroom units, sometimes shared among multiple families. These houses were designed as walled-in row houses, serving the dual purpose of mass-producing inexpensive and durable residential units and directly intervening in the domestic space of families to modernize it (Ehsani, 2014).

Company towns⁸ aimed to establish a new household model, where a good wife's responsibilities extended to maintaining sanitation and ensuring a clean and healthy home for the family. The oil company implemented various programs to educate oil workers on the essentials of running a well-kept household. Company agents conducted inspections of workers' homes and even rewarded families considered "model" households.

Recollections from interviews in Masjed-Suleiman in 2012 reveal the pride women felt in having their homes appreciated by health inspectors from the company (Jafroudi, 2017). One woman mentioned that inspectors would commend her efforts and even ask her to accompany them to neighbors, using her child as an example of a healthy "oil company baby" (Jafroudi, 2017). This reflects the company's active involvement in shaping domestic standards within the community.

This top-down space was not absolute and complete. Women in these communities found ways to challenge and reshape this new urban reality whenever possible. They turned their homes into makeshift dressmaking workshops, kitchens, and hairdressing salons. Despite strict prohibitions, some women kept animals like cows and chickens and cultivated vegetables in their small courtyards. Engaging in such self-employed ventures, some women managed to earn incomes comparable to what their husbands earned from the oil company (Jafroudi, 2017).

Therefore, despite being largely excluded from the formal workforce of the oil industry,

⁸ This experiment was later applied to agri-businesses company towns too (see chapter 5).

women made significant contributions to the economy of the oil city and played a key role in shaping alternative urban spaces. Their economic activities, often in the informal sector, were essential to the functioning of the community.

Women were also actively involved in the political sphere of the oil city. They participated in protests and strikes, playing a vital role in these political activities' success, a role often overlooked in oil literature (Cronin, 2010). In the early workers' uprisings before 1925, when immigration from other parts of the country had not yet occurred, and most immigrants were men without their families, Arab women actively participated in the protests. They joined their husbands, chanting their demands to the oil company. The 1914 protest was sparked, in part, by the rape of an Arab woman by a company manager (as I mentioned above). This issue was particularly significant for women, and their chants included expressions like "down with men who work for the corrupted oil company and offer their honor to it" (Azerbaijani, 2020). The involvement of women remained pivotal in subsequent workers' struggles, with some remarkable moments where women took on leadership roles, delivered provocative speeches to the worker crowds, and added to their collective anger (Cronin, 2010; Atabaki, 2017; Azerbaijani, 2020; Bayat & Tafreshi, 2021; Abrahamian, 2008).

Women employed more radical and violent methods in their protests than their fellow male workers. They were a "radicalization force" despite, and perhaps because of, the popular discourse that emphasizes women's "weakness and helplessness (Cronin, 2023). "Women were anarchists"; they beat up the police and provoked their fellow workers to free

prisoners (Eftekhari Diary in Bayat & Tafreshi, 2021). During the 1929 strike, women planned to go to Mohammareh and destroy the Shah's statue (Eftekhari Diary in Bayat & Tafreshi, 2021). During the same strike, many women were arrested and sent to Ahwaz with their children. As a result, two infants tragically died on the way due to the harsh weather and police abuse (Eftekhari Diary in Bayat & Tafreshi, 2021). Even after the suppression of the strike, women continued their protests, demanding the return of deported strikers. The families of the deportees were considered martyrs, garnering sympathy and support from the community. This support manifested in a subscription list that received substantial backing (Cronin, 2010). In the 1946 strike, women again took a central role. On May Day, 1946, a female orator at a rally not only demanded "a comprehensive labor law with equal pay for equal work" but also called for the total nationalization of the oil industry (Abrahamian, 2008: 113).

Women's political engagement in Khuzestan's oil cities needs to be understood in the context of broader Iranian history. A few years before the discovery of oil in Khuzestan, the Iranian Constitutional Revolution occurred in 1906, marking a significant shift in the country's political landscape. During this revolution, women, particularly those from urban, educated, and higher-class backgrounds, formed public and secret clubs to discuss women's rights and actively participated in various political activities and played crucial roles, even though their political agency was often ignored and suppressed (Afary, 1996).

While Iranian women had a history of involvement in political affairs, the engagement of women in oil cities differed from their participation in both bread riots -which had a much

longer history, from 1720 to 1890s and early 1900s, which was the "golden age" of bread riots (Cronin, 2018)- and the constitutionalist movement -from the 1850s to 1920s-. The unique circumstances of the oil industry and the specific challenges faced by women in this context shaped their distinct political activism.

In contrast to the constitutional movement, women's political struggle in oil cities was intricately woven into their daily lives and directly linked to the sources of their hardships. Their nationalism was not an abstract or distant concept but an immediate and urgent response tied to their everyday experiences. This distinctive form of women's struggle in Khuzestan's oil cities shares similarities with the grievances of women of color who advocate for environmental justice in the Americas.

The women in Khuzestan pursued traditional women's interests, which were closely connected to their roles as mothers and caregivers. Their activism was driven by a need to protect their children, families, and communities. This perspective aligns with the environmental justice movements led by women of color, where issues of community health, environmental hazards, and the well-being of future generations are central concerns (Krasuss, 1993; Culley & Angelique, 2003; Bell & Braun, 2010; Garvey, 2011). For the women in Khuzestan, participating in the movement was an extension of their parenting and nurturing roles.

While female constitutional activists in Tehran and some other major cities sought ways to express themselves in a society where women had limited visibility (Afary, 1996), in Khuzestan, working-class women in the oil industry were already present in the public

sphere. Importantly, their activism differed from the nature of bread riots, which were often spontaneous and focused on short-term demands. Women in the oil cities actively pursued a political agenda, initially centered around equality with the British and later evolving into a demand for oil nationalization.

The oil industry not only provided these women with a platform for public engagement but also fostered a unique form of labor struggle that intertwined with broader political activism. This distinctive context shaped the nature and goals of women's participation in the political landscape of Khuzestan's oil cities.

Conclusion

The arrival of European women into Khuzestan triggered specific urban developments, as their presence was emblematic of colonial culture and a higher standard of living compared to the local population. This situation necessitated the creation of exclusive oil towns featuring spacious homes, private gardens, and sophisticated urban infrastructure such as sewage systems, electricity, and private roads, which helped cement the social cohesion and identity of European communities.

The matter of sex was problematic in Khuzestan's oil urbanization process. Gender relations were strictly controlled and redefined in oil cities to align with the colonial nature of the oil industry. Although women were marginalized within the oil industry, they played a crucial role in the socio-economic and environmental dynamics of the oil city at various levels.

Contemplating domestic labor highlighted its critical role in defining the urban landscape

of the oil city, shaped by the demands of the colonial lifestyle in Khuzestan. The dependence on domestic workers, accentuated by the colonial emphasis on racial prestige within gender politics, facilitated the suppression of wages for the oil company staff through the exploitation of inexpensive female labor.

Generally, although women were largely excluded from the formal oil industry workforce, their contributions to the economy of the oil city were profound. Primarily active in the informal sector, their roles were crucial in creating alternative urban environments, highlighting their vital place within the community, the city, and the global oil economy.

Chapter Five: Socio-Ecologic and Geographic Roots of Reproduction of Ethnic Relationships in the Oil City

The focus of this chapter is on the transformation of ethnic relationships in Khuzestan, brought about by the oil industry, and to provide an answer to the research question, “how ethnic relationships are redefined and reproduced in the oil city.”

In the early 20th century, when oil was first discovered in Khuzestan, the native Arab population constituted the predominant socio-political group in this region's southern and western areas. A century later, this same group has become one of the most marginalized and impoverished populations in Iran, evidenced by their disproportionately high rates of unemployment, illiteracy, poverty, and imprisonment. What are the causes behind this transformation? How has ecology and the built environment played a role in establishing and perpetuating their marginalization? This chapter aims to provide insight into the socio-historical and environmental processes in Khuzestan after the discovery of oil in an effort to offer some answers to these questions.

Understanding how the oil industry contributes to creating a subaltern group as a surplus population is critical to understanding the global oil flow. I argue that this process involved dispossession, environmental destruction, and unequal distribution of opportunities, which in turn disrupted the social reproduction of subaltern groups, leaving them unable to sustain their communities and vulnerable to political power, environmental disasters, and socio-economic changes.

For this purpose, I investigate the social changes that occurred with the advent of the oil

industry, such as the influx of migrant workers into Khuzestan and the establishment of a racist social hierarchy by the British oil company (APOC/AIOC), along with the restrictions on hiring native Arab people in the oil industry (from 1908 onwards). Subsequently, I examine significant historical events and processes, including the formation of a modern central government and nation-state in Iran (from the 1920s), oil nationalization (1951), the establishment of governmental agribusiness plantations (from the 1960s to the present day), and the Iran-Iraq war (1980-1988). I analyze how each of these processes contributed to the reproduction and perpetuation of ethnic relations, with a particular focus on the socio-environmental aspects of them.

This chapter draws on archival resources, documents, reports, and related studies. In addition to utilizing oral history pieces, diaries, reports, and existing research extensively, I accessed the IOR (Indian Office Records) and British Petroleum archives for the initial sections. The latter half of the chapter (“oil nationalization” to the end) mostly relies on existing studies to analyze the subject further.⁹

In-Migration and Transformation of Ethnic Makeup of the Oil Region

The ethnic composition of the oil region of Khuzestan underwent significant transformation within a few decades, leading to a shift where the Arab population was no longer the absolute majority in southwest Khuzestan. This demographic change affected the power dynamics among ethnic groups in oil cities. However, seeing this transformation

⁹ See Introduction chapter for more detail on methodology.

in conjunction with other factors I will examine in this chapter is important.



Figure 21 Arab oil workers at Abadan Refinery, waiting for their daily wage, Source: Unknown

Before the oil discovery, the Bakhtiari people, a sub-group of the Lor ethnicity, inhabited the eastern and northern regions of Khuzestan, near the Zagros Mountains. They were predominantly nomadic, while the southern area, including Ahwaz, was home to Iranian-Arab people, primarily farmers and fishermen. The Bakhtiari people roamed across a wide area spanning from the Lorestan mountains to the Dezful plain, while the Arab population also had seasonal migrations within their land.

During the initial stages of oil development, to meet its unskilled labor demand, APOC relied on the native workforce from the “surrounding tribal areas tribes” (Floor, 2009). APOC, however, had difficulty in keeping them because their nomad and pastoral lifestyle was not compatible with strict time discipline and coordinated work habits. Villagers and nomads preferred not to leave their pastoral lives to become wage laborers (Atabaki, 2013). As Sir Wilson, British co-consulate in Khuzestan, who was also a surveyor and later became the APOC advisor on local matters, described the reluctance of local farmers to work at APOC:

Food is so cheap that the oil company must, paradoxically, pay higher wages to get people to work at all. Men’s needs are few and they are “lazy”- in other words their standard of living includes a large element of leisure, and who shall blame them? (Wilson, 1942: 140).

Moreover, Arab Sheikhs limited the number of tribesmen whom the APOC could employ. In response to the workforce shortage, APOC advertised and welcomed migrant workers from other parts of Iran, Ottoman Iraq, the Persian Gulf region, and especially India (Lockhart, 1938).

There was a significant influx of men from the Kurdistan and Lorestan mountains seeking employment at APOC once rumors spread about the good wages in Khuzestan (Floor, 2009). As early as 1909, Sir Wilson records the employment of Turks, Kurds, and Lors in the oil fields in Masjed-Suleiman and Ahwaz.

During the 1910s, amid the chaos and famine of World War I that took millions of Iranians’ lives (Edalati & Imani, 2024), the oil region of Khuzestan emerged as a relatively stable

and safe region (Ansari, 1974). Moreover, the emerging oil industry provided a new source of livelihood, making Khuzestan, particularly Abadan and Ahwaz, a popular destination for migrant workers (Wilson, 1942; Ansari, 1974). In 1921, unskilled oil workers had come from cities like Tehran, Kermanshah, Bushehr, Shiraz, Esfahan, and even northern provinces like Gilan and Mashhad, which are considerably far from Khuzestan (Mo'taghedi, 2019). From 1926 onward, the establishment of cheap omnibus transportation throughout Iran substantially increased the flow of workers to Khuzestan (Melamid, 1959).

The arrival of migrants caused a significant shift in the ethnic composition of the oil region, with the Arab population slowly losing its majority status in urban areas. In the oil industry, Arabs were swiftly being outnumbered. In 1914, out of 1,809 Iranian workers at Abadan, 1,200 were Lurs (Zagagi, 2018). By the 1940s, over 60% of the industrial workforce in Khuzestan came from various ethnic backgrounds and other provinces (Lawless & Seccombe, 1993). In 1947, 33% of new hires were from Shiraz and Bushehr, 19% from Isfahan, and 7% from Bandar Abbas. Only 36% were born in Khuzestan cities (IOR, Coll 28/85S (1) 'Persia; Abadan and S.W. Persian Oilfields; A.I.O.C. Indian Employees', 1948). In 1956, the next generation of immigrants born and raised in Khuzestan, the number raised but reached no more than 39.4% of the Iranian workers in Abadan were born in Khuzestan, including both Arab and non-Arab workers (Melamid, 1959). This trend reflected the ongoing influx of people from different parts of Iran, which continued to reshape the region's demographics.

In 1914, Wilson stated, “Our best men were from Tabriz [Northwest Iran, Turk ethnicity] and we have at least a hundred Kurds” (Wilson, 1942. P 82), a praise that ended a few years later when APOC stopped hiring Turks and Armenians for fear of the Soviet influence (Zagagi, 2018). It shows how labor hierarchies were fluid and changing based on the emerging socio-political conditions. Arab people, too, whose Sheikhs were once close allies to APOC, became a population that needed constant control and surveillance after 1925 when Iran’s central government took over (Zagagi, 2018).

Formation of Oil Working Class and Exclusion of Arab People

The alteration in the ethnic composition of Khuzestan did not automatically result in the relegation of the Arab people in Khuzestan. Numerous additional socio-political and ecological determinants emerged in subsequent years (will be explored in this chapter), contributing to the power transition. However, my argument is that the initial establishment of the oil industry as a pivotal socio-political force, wherein the Arab community was predominantly excluded, was instrumental in shaping the ensuing dynamics.

In the early stages of oil development in Khuzestan, the Arab population faced two major hindrances in achieving equal participation in the oil industry. Firstly, Sheikh Khaz'al, who was the ruler of the Arab people in Khuzestan (then Arabestan), imposed limitations on APOC's hiring of Arab tribesmen, and secondly, APOC demonstrated a preference for non-Arab work migrants, possibly linked to the first issue. Consequently, Arabs were largely marginalized within the industry. This initial exclusion proved to be a critical factor in determining the Arab population's access to employment opportunities within the oil industry for many years. Following the overthrow of Sheikh Khaz'al in 1924 and the rise

of Persian nationalism during the reign of Reza Shah Pahlavi (1925-1941), the Arab community found itself facing insurmountable challenges in attempting to gain a foothold in the oil industry.

In 1909, after extensive negotiations, APOC reached an agreement with Sheikh Khaz'al to lease a portion of Abadan Island in the bank of Shat-Al-Arab River for erecting the APOC refinery, paying an annual fee of 650 pounds to him (Shafiee, 2018). Apart from dispossessing indigenous tribesmen of their communal land at Abadan and surrounding, the agreement between APOC and Sheikh Khaz'al also prohibited APOC from employing tribesmen as laborers without the Sheikh's permission, except as guards to protect APOC sites from potential disruptions by the local population (Shafiee, 2018).

Sheikh Khaz'al opposed the employment of unskilled tribesmen as he feared their additional income would undermine his authority. Moreover, during the date harvesting season, he needed landless peasants to work in his palm groves, making it incompatible with the strict labor management required by industry (Zagagi, 2018).

In addition, this restriction may have been motivated by a desire to maintain the tribal structure, which was integral to the *sheikhs'* (Arab tribal leaders) authority. The employment of Bakhtiari tribesmen in the oil industry profoundly affected their societal structures, stripping them of the manpower essential for sustaining their nomadic lifestyle over centuries. The role of pipeline guards, assigned to some within the Bakhtiari, engendered divisions within the community (Atabaki, 2013). In the aftermath of the agreements between APOC and Bakhtiari *Khans* (Bakhtiari tribal leaders), some acquired

considerable wealth, which led them to relocate to urban centers and become absent landlords. Such movements left deep impacts on the fabric of Bakhtiari nomadic society (Lawless, 1993). Arab tribes experienced these issues to a lesser extent, which may explain the persistence of strong tribal affiliations among Arabs today, while such ties among the Bakhtiari have significantly weakened if not entirely dissolved.

As a result of such hiring restrictions, other than a few individual Arab tribesmen, most were hired indirectly through sheikhs, primarily as construction workers, with only tenuous links to the oil industry (Zagagi, 2018). These restrictions also resulted in APOC managers underestimating the abilities of Arabs to work in an industrial setting.

APOC's managing directors exhibited a discriminatory approach towards all Iranians, which was evident in their hiring practices. Iranians were referred to as "incompetent," not solely due to their lack of skills but based on their race and religion. A rigid racial structure was employed within the APOC labor hierarchy, where Indians were recruited for middle-rank and semi-technical positions, while senior staff, engineers, and managers were exclusively white people from the UK or elsewhere. Iranians, on the other hand, were only employed for manual and heavy labor (Elling, 215).

Within Iranian workers, another layer of hierarchical order was in place, e.g., non-Muslim Iranians were viewed as more competent and their chance to be hired in more skilled level was higher: "the more skilled workers were often from minority populations such as Armenians, Jews, and Chaldeans" (Ferrier, 1982:6). Among Muslim Iranians, APOC preferred migrant workers over locals, as the APOC managers believed that local Arabs

were the "less hard-working than any other in Persia" (Lockhart, 1938, quoted in Zagagi, 2018:95). And "for truth to tell, the nomad (Bakhtiaries) has shown a greater willingness and aptitude to take to machinery than has the townsman" (Wilson, 1932:97). Another APOC manager characterized the local Arab workers as having "inferior quality" and expressed his wish to hire more migrants for "they were much more robust than the local inhabitants and therefore much better fitted for the heavy work required in erecting the Refinery Plant"¹⁰ (Thompson, 1931, quoted in Zagagi, 2018:96). These policies persisted at the core of APOC for years to come. In June 1946, the British Council at Mohammareh wrote to the Government of India to discuss their concern for growing sympathy for the Tudeh Party and communist ideas in general among Indian artisans and suggested that AIOC engage native people instead of Indians. Still, in his view, the problem was that "Arabs were very lazy in comparison with Persians" (IOR, Coll 28/85S (1) 'Persia; Abadan and S.W. Persian Oilfields; A.I.O.C. Indian Employees', 1948).

Such policies not only excluded the Arab population from accessing jobs in the oil industry but put them in the lowest rank of the labor hierarchy. In 1956, 30.4 percent of refinery workers had been born in Khuzestan, 28.9 percent in Fars Province, and 19.2 percent in Esfahan Province; Only 9.1% of managerial ranks were born in Khuzestan, while 84% came from Persian majority provinces (Fars, Isfahan, and Tehran). (Table 3). The 1951 report of the International Labor Organization (ILO) admits this fact; "the unskilled

¹⁰ Such effort to divide labor based on race and ethnicity, and even town of origin was one of the most persistence policies of APOC. Such arbitrary policies that had no rational reasoning behind them. For example, in later APOC training program (the 1940-50s), "boys from Isfahan were preferred to recruit, because the town was said to be 'peoples by craftsmen in metal work of all kinds' who would take readily to mechanical work" (Biglari, 2022, 231).

workers employed by the Company, [...] come, in fact, to a large extent from the pastoral nomadic tribes of Bakhtiari [...], and from the Arab tribes of the Persian Gulf. Highly qualified and skilled Iranian employees, on the other hand, come from distant centers of handicraft and industry” (14).

Table 3 Abadan Refinery employees by place of birth and grade in 1956. Source: (Institut d'études et de recherches Sociales, 1964, 366)

Province of Birth	Managers	Employers	Manual workers	Total
Khuzestan	9.1	26.5	41.8	39.4
Fars	14.5	20.5	30.2	28.9
Isfahan	21.3	22.8	18.7	19.2
Kerman	1.5	1.7	4.4	4.0
Kermanshah	9.7	7.5	2.21.0	2.9
Tehran and Mazandaran	24.2	8.1	1.0	2.4
Azerbaijan	11.3	6.5	0.6	1.5
Khorasan	2.8	2.1	0.3	0.5
Outside Iran	5.6	4.2	0.8	1.2
Total	100	100	100	100

Over time, these factors resulted in a shift in the ethnic composition of the workforce and cities, which disadvantaged Arab people. This, coupled with the Persian-exclusive education system that from 1924 onward was imposed on all non-Persian-speaking peoples in Iran, further marginalized Arab people in the industrial workforce. In the oil company, training programs were offered exclusively in Persian, and the pre-condition was the ability to read and write in Persian (ILO, 1951).

Another factor that contributed to the marginalization of Arab people and the development of a discriminatory attitude towards them was the collaboration between Sheikh Khaz'al and tribal guards in suppressing oil workers' protests. Sheikh Khaz'al was a dependable ally of APOC when it came to quelling labor demonstrations. He played an active role as the guard force provider for the APOC in crushing workers' strikes in 1914 and 1922

(Floor, 2009). This led Iranian workers to develop a strong aversion to Khaz'al and his forces, which persisted for years. Even after the fall of Sheikh Khaz'al, workers' patriotism and sense of justice were often measured by their past opposition to him (Yousef Eftekhari Diary, in Bayat & Tafreshi, 2021).

Despite the close relationship between APOC and Khaz'al, it did not always benefit the Arab people. At times, local Arab tribesmen resisted the Company's encroachment on their territories, and Khaz'al's forces were often used to crush such resistance. In one instance, in 1915, a group of Arab tribesmen launched an attack on an APOC pipeline and a consequent halt in oil transportation for four and a half months in the northern region of Ahwaz. The incident resulted in significant air and water pollution as the excess oil was burnt and discharged into the Karun River ("Ahwaz Oil Wells," 1916). The response from the British government was severe and involved Arab villages being "bombarded, burned, and destroyed" (Wilson, 1942).

Additionally, ethnic tension between the local population and oil workers in oil cities was over controlling the means of social reproduction such as food. The local Arab population held exclusive control over the Abadan bazaar, leading to oil workers attributing high food prices to their monopoly. The workers brought their grievances to the governor of Khuzestan, citing the exacerbation of the situation by Khaz'al's taxes on food products (Zagagi, 2016). Under the pressure of the Iranian government, Khaz'al removed the tax on bread. Khaz'al's monopoly extended to all aspects of the living conditions of workers and farmers, as he demanded half of the produce from local farmers and imposed taxes on the

materials used for constructing houses, which drove up housing costs in the oil region (see figure 22) (IOR, 1/C III. Miscellaneous.', British Library: India Office Records and Private Papers, 1921). Only after the exile of Khaz'al, Iranian immigrants from Isfahan and Shiraz provinces could establish two additional bazaars. Within a few years, the retail sector shifted from being dominated by Arabs to being controlled by Persians (Azarbayjani, 2020).



Figure 22 Arab Bazaars in Ahwaz, Abadan, and Mohammareh in the 1920s. Source: Walsh, C. W. Holton 1920s

As resentment towards Khaz'al's forces grew, oil workers in Abadan were eager to see a shift in the power balance in favor of the central government. Residents who were facing eviction to make way for the APOC's new market sent a petition to Majlis, complaining about the mistreatment they endured at the hands of APOC and Khaz'al (Ehsani, 2014;

Zagagi, 2018). With mounting such discussions, Khaz'al, in Iranian newspapers (See figure 23, as an example), was depicted as the legendary fiend Zahhak, in encountering Jam (Jamshid) and Kiyan"—two "world-conquering" Persian emperors, alleged him to be a country-seller (*vatan furush*) and traitor who wanted to threaten the integrity of "thousand-year-old independence of Iran" (Kashani-Sabet, 2011). After Khaz'al was defeated in 1924, Iranians, even in distant cities like Kashan in central Iran, welcomed and celebrated the event (Kashani-Sabet, 2011).



Figure 23 An evil depiction of Sheikh Khaz'al in an Iranian newspaper, 1924. The cartoon shows Sheikh Khaz'al with bags of cash before him to signify his lust for money and his presumed corruption. Source: Kashani-Sabet 2011

The urban environment of oil cities in Khuzestan, where a massive group of people with no kinship ties and from diverse backgrounds get together, who share their destitution and hope for a better life, provided a fertile ground for class solidarity. In the Trade Union

statement for May Day 1946, it was mentioned that “Our demand is Abadan, the city of workers, and ruling over Abadan is our right [the right of self-determination]” (Azerbaijani, 2020:100). Not only were oil workers generally supportive of protests and strike calls, but their family and a wide range of other residents (shopkeepers, housekeepers, students, and others) were also involved (Azerbaijani, 2020).

Over the course of just two decades, the population frictions that had once divided workers along racial and ethnic lines gave way to a sense of working class solidarity, as they were compelled to cooperate and unite in order to survive and make a living in the destitution and toxicity of the oil city. There are numerous accounts of indigenous and migrant workers coming together to organize strikes, protests, and sabotage. For instance, in 1914, two British and Irish staff members helped Iranian workers plan a strike (Azarbayjani, 2020), and an Indian mechanic tried to form a labor union in Masjed-Suleiman (Floor, 2009). The presence of Indian artisans, in particular, due to their political experience, class consciousness, and some subterranean organization that enabled them to lead strikes, was a source of learning the methods of collective bargaining for Iranian workers (Cronin, 2010). Indian workers generally sympathized with the native working movement in Khuzestan and the Toudeh Party in particular (IOR, Coll 28/85S (1) ‘Persia; Abadan and S.W. Persian Oilfields; A.I.O.C. Indian Employees’, 1948). Furthermore, there were several reports of cooperation between Arab and non-Arab oil workers (Azarbayjani, 2020). Together, they organized several strikes (1914, 1920, 1922, 1929, 1946, and those during and after oil nationalization), which secured some of their demands, including wage increases, reduced working hours, and improved sanitary facilities.

Oil workers eventually realized that aligning themselves based on socioeconomic class rather than ethnicity would be more beneficial for their collective interests. One example to illustrate this shift in social identity was an incident following the harsh repression of the 1929 Abadan Refinery strike. Zahra, a member of an oil worker family and a vocal leader of the stick, sought a meeting with Yosef Eftekhari, a labor union organizer who had been imprisoned. When questioned by an officer about her relation to Eftekhari, Zahra claimed to be his sister. When the officer asked why she wanted to see him, Zahra replied that she was his sister. The officer questioned how that was possible since the leader was a Turk and Zahra was Lor. Zahra responded, “the kind that Lors and Turks are brothers and sisters in [i.e., working class].” (Eftekhari Diary in Bayat & Tafreshi, 2021:51).

Migrant workers, in particular, found themselves integrated into the proletariat, contributing significantly to the formation of this class solidarity, thanks to their lack of ties to land or tribal affiliations. In contrast, Arab tribesmen faced substantial exclusion from the class solidarity that blossomed in the oil regions due to limitations on their independent hiring. Since Arab contract workers were hired through their community elite and Sheikhs and received their wages directly from them, the control of these notables over their tribesmen had actually strengthened as a result of their dealings with the AIOC (Zaggai, 2018).

The initial stages of oil development, during which the Arab population largely remained disengaged as an urban-industrial working class, played a pivotal role in shaping power dynamics for years to come. As anti-colonial nationalist sentiments began to rise in Iran

and among oil workers, Arab people found themselves marginalized and excluded from these movements and, consequently, as a social group, remained peripheral to the oil industry.

Built Environment of Oil Cities and the Organization of the Social Order

Racial hierarchy based on race and rank within the APOC was mirrored in exact terms in urban space. This hierarchical order continues to shape the production and reproduction of space and life in Khuzestan's oil cities. Similar special orders were implemented in other Middle Eastern oil cities, such as Dhahran, Saudi Arabia; Kirkuk, Iraq; and Baku, Russia (now Azerbaijan) (Vitalis, 2006; Mitchell, 2013; Bet-Shlimon, 2019). Mitchell (2013) argues that the system of racial segregation and corresponding inequality in pay and housing conditions in Saudi Arabia's oil cities were imported from the United States oil and other extractive enterprises.

By the 1920s, Khuzestan's oil cities had become dual-spirit cities with unequal distribution of environmental advantages and risks. On one side, a modern city emerged at the intersection of domestic and global oil infrastructures, equipped with modern urban amenities such as tap water, sewage systems, electricity, clubs, and entertainment facilities that were unprecedented in Iran, albeit described as mediocre by European employees (Kemp, 1953). On the other side and outside the formal territory of APOC, shantytowns expanded, housing thousands of indigenous and migrant workers in deplorable living conditions, lacking drinkable water and sewer systems, and grappling with the pollution of

the oil industry¹¹. Figure 24 depicts such neighborhoods in 1943, 35 years after the beginning of the oil industry. Indian clerks and semi-skilled workers occupied a housing lane in between (Elling, 2015). Within the Indian lane, which was only slightly better than spontaneous slums of Iranian workers, there were other layers of hierarchy and socio-spatial division for each group. Only in the slums was no ethnic or occupational division in place (BP Archive, ArcRef 70209, 1924). A third space existed beyond the city, the indigenous villages where the residents were involved in city affairs as workers, shopkeepers, guards, servants, and so on. This space occasionally served as a meeting place for workers to gather and organize protests outside the watchful eyes of the APOC (Azarbayjani, 2020). Some of these villages also grew to become new workers settlements (Mortaheb, 2020).

Slums, as spontaneous alternative spaces, emerged to meet the needs of the growing number of local and migrant workers in oil cities. These spaces consisted of makeshift and permanent housing constructed from whatever materials were available, such as tin drums, reeds, and tents, without adequate provision for sanitation and highly polluted (Ehsani, 2014). It wasn't until the 1930s that APOC expanded its urban development and housing initiatives to incorporate semi-skilled Iranian workers and staff. In the following decades, especially after World War II, the company intensified its housing projects and began to provide housing for unskilled Iranian workers (Ehsani, 2014).

¹¹ See chapter 3 for more detail on this subject.

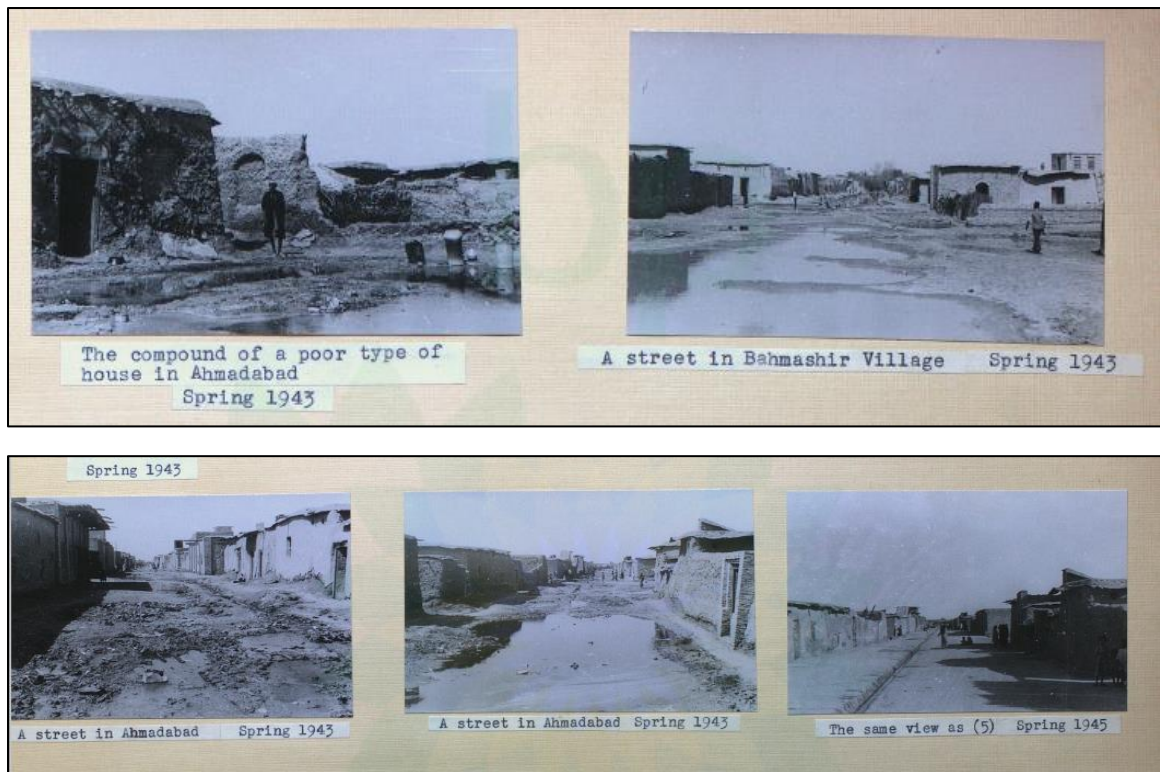


Figure 24 Living condition of workers in Abadan, 1943, Source: BP Archive, 36506

For APOC, the growing population of oil cities was an asset, as their despair and destitution was a source of creation of a “surplus population” (Davis, 2018), awaiting employment opportunities and a necessity to keep downward pressure on wages. That is why, in 1929, unskilled labor earned less than what they earned in 1924 (Floor, 2009). Humiliation and maltreatment towards workers were reported in numerous sources.

At APOC, workers were exposed to another kind of abuse: considerable discrimination between various segments of workers. One important aspect of it that I briefly discussed above was racial hierarchies, which posited Iranian workers of any ethnicity at the lower bottom of the labor and wage hierarchy. In addition, there was a further division among Iranian workers between salaried staff, wage earners, and contract laborers, with the latter

being the most disadvantaged. Norman Kemp, a British journalist, on his visit to Abadan in 1951, writes contract workers get low wages even compared to the lowest rank of wage earners. He describes them as “scrawny, wild-eyed people, fighting depressingly for survival on a handful of beans and lentils” (Kemp, 1953:46).

Labor hierarchies eventually translated into urban space. For example, APOC housing (from the 1930s) was granted only to some sections of the salaried laborers. Contract laborers were not qualified for any services provided by APOC. In addition, contract workers could not benefit from any urban facilities provided by the oil company, including hospitals and subsidized grocery markets. Such division has become an inseparable tradition in Iran’s oil industry, even after the oil nationalization in 1951 and the 1979 revolution.

The majority of contract laborers were native Arab people who were hired en masse through sheikhs. They were paid per job, did not receive any benefits, and were dependent on their sheikhs for their salary (Zagagi, 2016). The living conditions of the contract labor force are poorly documented, and few accounts depict their situation (Floor, 2009). The dire circumstances and meager pay may have contributed to an Arab flight, where Arab workers left Khuzestan for Basra, Iraq, and Kuwait on a scale that worried APOC managers. They feared oil production would decline if Arab workers kept migrating on such a large scale (Ehsani, 2014).

A comparison between Abadan and Masjed-Suleiman, two significant early oil cities in Khuzestan, highlights the extent to which the built environment played a crucial role in

determining the marginalization of the indigenous population within these burgeoning urban spaces. Located in the northern oil fields of Khuzestan, Masjed-Suleiman is home to the Bakhtiari people. In contrast to Abadan, APOC's housing policies in Masjed-Suleiman were more inclusive. It provided rent-free housing and access to the oil company's healthcare and educational facilities to all employees, including contract workers (Mortaheb, 2020). Moreover, the hiring of local people in Masjed-Suleiman, from the beginning, was much higher than in Abadan since, in contrast to Arab sheikhs, Bakhtiari Khans (tribal leaders) facilitated the recruitment of local tribesmen as laborers by the oil company. As a direct consequence of such policies, the Bakhtiari people, in spite of enduring the same levels of poverty, dispossession, and environmental degradation as their Arab counterparts, did not become a subordinate population in their own homeland.

Nationalism: Militarization of the National and Elimination of Diversity

In the early 20th century, the emergence of Iranian nationalism served as a reactionary response to imperialism, precipitating a state of turmoil within the nation. It subsequently evolved into a homogenizing and authoritarian force, with the primary objective of bolstering central authority in opposition to the semi-autonomous, diverse, and heterogeneous social landscape of Iran, which encompassed numerous ethnic and linguistic communities. Consequently, the establishment of the modern Iranian nation-state exacted a considerable toll on peripheral communities, notably non-central groups, such as Turks, Kurds, Baloches, Lors, and Arabs.

Iranian nationalism was, to a part, a response to the imperialism and colonialist approach of the Anglo-Russian interventions in the late 19th century that was aligned with the global

trend of rising anti-colonial nationalist sentiments among non-capitalist countries. Although Iran was not formally a colonized country, the level of political intervention and economic control by Britain and Russia, among them the unfair concessions such as D'Arcy's monopoly on Iran's oil extraction and export¹², contributed to similar anti-imperialist feelings. Iranian nationalism began to develop during and after the Constitutional Revolution (1906-1911) and continued to flourish during the interwar period (1918-1939).

Moreover, During the aftermath of the First World War (1914- 1918), Iran experienced chronic instability and a weak central government that was incapable of controlling the country due to the Anglo-Russian rivalry. Thus, Iranian elites yearned for authoritarian reforms that would bring order and stability and free Iran from the meddling of foreign powers and tribal mayhem. Gaining control over the provinces, quelling tribal leaders, and curbing foreign interference were the central debates of the Tehran Parliament -Majles- in Tehran, which was imagined to be achievable through a working central government (Bayat, 2003).

In addition, the idea of Iran as a homogenous nation-state was perceived as crucial in preventing the country from disintegrating. This notion was also influenced by recent archaeological findings about the centralized Sasanian Empire, which succeeded the weak feudal state of Parthians (Ansari, 2012). This discovery closely mirrored Iran's status quo

¹² See Introduction Chapter, Context section.

in the early 20th century. The glorification of pre-Islamic Iran as an era of “national grandeur” before “Arab intrusion” further contributed to the idea (Matin-Asgari, 2014).

Amid such an urge, Reza Khan, commander of the Cossack Brigade, showed potential to fulfill this task. After a successful coup, he became the Minister of War and then Prime Minister in 1923, and finally, in 1925, Reza Khan established the Pahlavi dynasty and became the Shah of Iran.

The process of nation-building always involves violence and force (Cole & Kandiyoti, 2002). Likewise, the modern state of Iran after Reza Shah implemented an authoritarian modernization policy with the slogan "one country, one nation" (Atabaki, 2014). In 1936, The idea of a homogenized nation was taken to such an extreme that it involved imposing a uniform dress code for both genders by force¹³. Other policies were direct taxation, the forced settlement of migrating tribes and relocation of others to transform their tribal way of life, promote a unified language -i.e., Persian- and a combined "national" history, as well as creating conscript armies that mix young men from different regions, fostering strong bonds between them (Bayat, 2003; Cole & Kandiyoti, 2002). This was all to achieve the goal of "one nation, one country."

In the aftermath of nation-state building, the concept of homeland (*Vatan*) was reframed from *motherland* to “the country of fathers.” During the Constitutional Revolution (1906-

¹³ This policy made some Sunni Arab tribes in Southern Iran to migrate to Arabic countries where they were not bounded to the dress code policy of the Iranian state (IOR/ Coll 30/145, Entry of Persian subjects into the Arab Sheikhdoms of the Persian Gulf, 1936).

1911), *Vatan* was associated discursively with women's nurturing and protective roles in motherhood (Najmabadi, 2005). In the subsequent decade, *Vatan* became a concept associated with a hegemonized territory on the path to progress and construction (Kashani-Sabet, 2011). In this discourse, the “center” (military, political, economic, and cultural, often a synonym for the Capital City) assumed a representation of the “official” homeland, determining the criteria of patriotism and instruments of unity (Kashani-Sabet, 2011).

When the new central government extended its influence to Khuzestan in 1924, where oil resources loomed on the horizon and homogenizing nationalist sentiments were prevalent, it led to a situation of continuous violence, land seizure, and the imposition of colonial-like control within the country, i.e., domestic colonialism.

Centralized State in Khuzestan: Displacement, Dispossession, and Famine

Tribal communities across Iran were apprehensive about the growing power of the government in Tehran. They took various measures to resist it, including armed revolts and sabotaging infrastructure that would strengthen the central government's control (Cronin, 2007). They were aware of the colonialist objectives of the central government's power. Wilson's summary of the Lor tribes' apprehensions about the government's expanding power through railroad construction was that it "would increase the power of the Central Government in southwest Persia to levy taxes, which would be spent elsewhere, mainly in the Capital, by men with no interest whatever in the welfare or interests of the people of southwest Persia" (Wilson, 1942).

During this period, Sheikh Khaz'al had established almost complete autonomy in

Khuzestan, formerly known as Arabestan, and refused to pay taxes to the central government. With the British government's assurance to protect him, Khaz'al was guaranteed that the Iranian government would not disturb the status quo for himself, his heirs, or his successors (Shafiee, 2018). However, the oil revenue generated in the region was crucial to the central government, and it was deemed incongruous to let it remain solely under Khaz'al's control, especially given his separatist tendencies (Fateh, 1956). At the same time, recognizing the need for a stable and powerful government aligned with its interests, the British government supported the central government's efforts. For example, in January 1924, the Iranian government renamed Arabestan to Khuzestan, its pre-Safavid Persian name. By June of the same year, the newly elected British government changed the name of the "Arabestan consulate" to the "Khuzestan consulate" in Mohammareh as a gesture toward the Iranian central government (Zagagi, 2018). In 1935, AIOC voluntarily adopted the new Persian name of cities in their formal letters and addresses¹⁴, without any pressure from the Iranian government (IRO, Coll28/6, Diaries: Khuzistan (Ahwaz) Diaries 1931-1937).

Khaz'al was compelled to surrender to Iran's army in December 1924, as they had arrived in Ahwaz to enforce the central government's authority. He was then exiled to Tehran, where he passed away a decade later. His arrest had catastrophic consequences for the inhabitants of Khuzestan, especially for the Arab tribesmen. Having already lost part of their communal lands due to oil agreements, they were once again dispossessed and

¹⁴ For example, the British Consulate in Mohammareh, changed its name to Khorramshahr COUNSULATE

forcibly evicted from their towns and villages (Zagagi, 2018).

The central government feared the resurgence of tribal rivals and thus implemented a set of policies aimed at destroying the structure of tribal life. One of the most effective policies was the compulsory settlement of migrant tribes, restricting their movements and breaking tribes up into smaller groups. Lower-ranked Sheikhs, who were incentivized with land and positions, assisted the government in implementing these policies. This policy had a disastrous effect on tribal society, as the lands assigned to tribes were often in “unhealthy districts,” unsuitable for agriculture, and they were left without adequate training, equipment, or healthcare. Consequently, the tribes became highly impoverished communities (IOR, Coll 30/9 'Persian Gulf: Administration Reports 1926-1938).

In 1925, famine became widespread in Khuzestan as a result of the displacement of Arab tribesmen, coupled with a bad harvest that affected all residents, including those in Ahwaz and Abadan (IOR, Coll 30/9 'Persian Gulf: Administration Reports 1926-1938). The migration of Arab tribes to Iraq, seeking refuge from the abuse of Iran's military forces, left agricultural lands with a lack of labor and added to the bad harvest. In 1933, the British Consulate in Ahwaz reported: “Some Arab tribes are in a hopeless condition and are practically starving” (IOR, Coll 28/6 'Persia; Diaries: Khuzistan (Ahwaz) Diaries Jany 1931 – 1937:1431). Arab tribesmen would trade the cash crop in the market for their basic needs. Therefore, despite the “sufficient rainfall,” only 6% of the arable land around the Karun River was cultivated, whereas in other regions such as Dezful and Ramhormoz (Bakhtiari lands), all the arable land was cultivated (IOR, Coll 28/6 'Persia; Diaries:

Khuzistan (Ahwaz) Diaries Jany 1931 – 1937). Moreover, the new government increased taxes on date trade, almost ruining its market (BP Archive: 68419). The severe food shortage forced tribesmen to migrate to Mohammareh and Abadan, with many eventually moving to Iraq and Arabia (IOR, Coll 28/67 'Persia. Annual Reports, 1932–1933; IOR, Coll 30/9 'Persian Gulf: Administration Reports 1926-1938).

Following the arrest of Sheikh Khaz'al, the newly established government implemented policies whereby all lands in Khuzestan, encompassing both urban and rural areas, were designated as Crown Land (Khaleseh). Subsequently, the government announced its intention to sell these lands to individuals capable of purchasing, cultivating, or constructing housing upon them, thus potentially excluding the incumbent beneficiaries, namely the poorest Arab tribesmen. Furthermore, the government expressed plans to relocate settlers from regions such as Isfahan, among others, to the area (IOR, Coll 28/6 'Persia; Diaries: Khuzestan (Ahwaz) Diaries January 1931 – 1937). Even palm trees were categorized as Crown properties and slated for redistribution. No provisions were made for compensating individuals whose lands and properties were dismantled as a result of centralized urban development schemes, specifically in Ahwaz, where residents could not register their properties (IOR, Coll 28/6 'Persia; Diaries: Khuzestan (Ahwaz) Diaries January 1931 – 1937).¹⁵

The Times described the actions of Persian officials towards Arab people in Khuzestan as "almost criminal" and "their corruption is said to be unimaginable, their only aim

¹⁵ Many Ahwazi residents to this day do not have legal documents for their properties.

apparently being to retire opulence by reducing the peasants to utter poverty" (The Times, 19-01-1928). As a result of such prevalent abuse and numerous skirmishes between Arab tribes and the Iranian security forces, many families fled Iran to take refuge in Iraq. This exodus continued for several years, and sometimes the whole tribe decided to move out (IOR, Coll 28/6 'Persia; Diaries: Khuzestan (Ahwaz) Diaries Jany 1931 – 1937).

Investigating the dismantling of tribal structures through violence at the intersection of gender and ethnicity in Khuzestan is crucial. Following the consolidation of control by the central government, coupled with widespread famine and state-sponsored violence, crime rates in Khuzestan, including homicide, theft, and robbery, soared. Archival resources indicate that Ahwaz and Khorramshahr were no longer safe, with numerous reports of violent incidents targeting women. For instance, in 1946 alone, several incidents were documented: "A woman returning from the railway station in Khorramshahr was attacked and looted by armed robbers," "the stabbing of an Indian woman, wife of an APOC employee, was reported, "an Arab woman was found dead in Ahwaz," "an Arab woman was run over near Shush," "four houses in the town were robbed, and one woman was stabbed," "a woman was hacked with knives and houses set on fire," and "an unfortunate woman was killed among camp looters" (Coll 28/85S (2) 'Persia; Abadan situation 1946; Policy to be pursued by H.M.G. (Recommendations & General Appreciation).

Colonial domination is not only based on economic exploitation but also on the moral reduction of the colonized to a psychologically inferior nature (Martins, 2018). In the same vein, the displacement policy in Khuzestan was accompanied by a concerted effort to erase

Arab cultural heritage. As part of this effort, Arabic names of cities and places were replaced with Persian names. For example, Mohammareh was renamed Khorramshahr, Ebbadan became Abadan, and Khafajiyeh was changed to Soosan-Gerd. Even neighborhood names were altered, such as Khaz'aliyyeh in Ahwaz, renamed Khorram Kooshk¹⁶.

Additionally, there were attempts to remove Arab cultural, architectural, and symbolic heritage, including banning Arabic clothing. More significantly, non-Persian languages, including Arabic, were prohibited in print and schools (Atabaki, 2014). The exclusive use of Persian in the education system significantly altered the dynamics of “access relations” (Ribot & Peluso, 2003). This policy hindered the Arab population's access to knowledge and institutions, contributing to the poverty and enduring ethnic discrimination they face today. For instance, in 1963, there was only one Arab person among 170 students at the Abadan Institution of Technology. These students had the opportunity to pursue full-time engineering roles within the oil company (Jafroudi, 2017).

Oil Nationalization and the Domestic Colonialism

During the 1940s, Iranian nationalism was focused on oil as the country's primary

¹⁶ Name change policy (Persianization) was not exclusive to Arab cities. During these years this policy was implemented so intensely that led to a lawlessness. There was an endless competition between military officers, local authorities and even ordinary people to suggest new names. APOC in one case, suggested “Gach Qara Goli” (an oil town in Bakhtiari territories) to be renamed to “Gachsaran” and it was accepted. In 1935, Fasi Farhangestan was formed and granted the authority to make decision about new names. By 1940, names of 107 towns and places changed. Most changes happened in non-Persian-speaking provinces. For more information see Jalalpour, S. (2012). *Tahlil-e Taghir-e Asamiy-e Shahrhay-e Iran (An Analysis of Name Change of Iranian Towns)* and Merritt Hawkes.(1935). *Persia: Romance and Reality*. Ganj-Nameh Asnad.

economic resource. The control of natural resources and the land was viewed as essential to protect Iran's territorial integrity, which had been historically vulnerable. Territorial and economic autonomy was seen as necessary for progress, and the nationalization of oil was a means to gain control over the land and its resources (Kahsani-Sabet, 2011).

Among all groups, Iranian nationalism was most strongly evident among oil industry workers. Signs of nationalist sentiments that were combined with racism towards Indian staff were evident in the 1929 strikes in Abadan, whereas previous strikes had only occasionally contained nationalist discourse and only in the context of complaints about the treatment of British companies. Some of the slogans during the strike included “Down with the foreigners and unbelievers,” “Khuzestan for Iranians,” and “Let the sons of Darius enjoy the fruits of their land” (Floor, 2009). A pamphlet referring to Indian staff contained racist lines stating that the Iranians, as “glorious and noble sons of Darius,” were ruled over by ‘the half-burnt people from the Equator’ (quotes in Elling, 2015, 9:204).

in the late 1920s, the attempts to unionize the oil workers conveyed nationalist messages that yearned for the Iranian state to help them emancipate from “foreigners” and the “cruelty of Sheikh Khaz’al”. Yousef Eftekhari, a member of the Iranian Communist Party and union organizer, in his diary, mentions that when he arrived in Abadan in 1927, he searched for those “who have nationalist sentiments and have fought against Khaz’al in the past,” in addition to those who had the anti-British sentiments (Yousef Eftekhari Diary, in Bayat & Tafreshi, 2021, p. 35). A few years later, one of the first statements made by the newly formed Workers Union in Abadan declared, “We have fought Sheikh Khaz’al and

other traitors, hoping that the state would save us from the claws of foreigners, specifically from the bloodthirsty AIOC¹⁷" (Yousef Eftekhari Diary, in Bayat & Tafreshi, 2021, p. 199).

However, for oil workers, nationalism was also closely linked to their class interests. For instance, during the 1941 Majles election in Abadan, the majority of votes were cast for Ali Omid, the representative of AIOC workers, rather than the National Front's nationalist party candidate (Azarbayjani, 2020; Khosroshahi, 2007).

In 1948, one of the most commonly voiced demands was the cancellation of the oil concession and the expulsion of all British personnel from Iran (Khosroshahi, 2007). Oil workers found that nationalism provided a framework to link their plight with the struggles of the nation as a whole, enabling them to articulate their grievances and demands more effectively. The concept of justice for them was inseparable from justice for the *nation*, which had been subjected to the same oppression as they had, the oppression of foreign powers for generations through unjust concessions, interference, and occupation.

As the oil nationalization movement gained momentum, the participation of the Arab population in Khuzestan was notably absent. While the Stalinist Toudeh Party gained significant popularity among the Iranian working class during the 1940s, it was unable to attract a substantial following among Arab people. One reason for this was the hiring practices of Arab workers, which were predominantly controlled by sheikhs even after the removal of Sheikh Khaz'al.

¹⁷ In 1935 AIOC was renamed the "Anglo-Iranian Oil Company" (AIOC) when Reza Shah Pahlavi formally asked foreign countries to refer to Persia by its true name, Iran.

Nevertheless, the tribal elites perceived a growing threat from the Tudeh Party, which was garnering limited but slightly growing support among individual Arab workers (IOR, Coll 28/85S (1) 'Persia; Abadan and S.W. Persian Oilfields; A.I.O.C. Indian Employees', 1946). Displeased with the Tudeh Party's efforts to exert influence over Arab workers, the tribal elites endeavored to establish an alternative organization for Arab people known as the "Arab Tribal Union" (ATU, Etehadiyeh-ye Ashaer-e Arab), espousing similar nationalist aspirations albeit rooted in Arab nationalism. In the formation of this union, they capitalized on support from the AIOC and the governor of Khuzestan, entities equally reviled by the oil workers.

For both factions, the urban milieu of Abadan emerged as the focal point of contention, perceived as a locus of power dynamics. Although the ATU could have situated its headquarters in Khorramshahr or Ahwaz, locales with greater accessibility to Arab tribesmen, they insisted on Abadan. This decision stemmed from their astute recognition that the locus of power had shifted with the advent of oil development.

On July 13, 1946, a violent confrontation erupted between the Tudeh Party and the ATU, resulting in the deaths of 25 individuals, predominantly members of the Arab Tribal Union, as per BP documents (IOR, Coll 28/85S (1) 'Persia; Abadan and S.W. Persian Oilfields; A.I.O.C. Indian Employees', 1946). Conversely, accounts from the Tudeh Party present a contrasting narrative, alleging 47 fatalities and 170 injuries, primarily among ordinary residents of Abadan (Rahbar Newspaper, 768, July 17, 1946). This incident exacerbated the existing contradictions and encounters within the oil development in Khuzestan.

The tension between the native population and oil development is inherent to oil capitalism because, within the realm of oil development, nature and land are integral components of capitalist accumulation due to its "territorial imperative" (Aborisade, 2010). Successful oil capitalism necessitates access to land for drilling operations, often leading to conflicts with oil-producing communities (Aborisade, 2010). The Arab people owned the land in Khuzestan's southern and western regions, where vast oil reservoirs lay beneath the surface. This area also served as a strategic hub for essential oil infrastructure that facilitated Iran's oil exports to the global market.

Following the removal of Khaz'al, the Arab population experienced a significant decline in their political power, bargaining ability, and support network. The Toudeh Party aimed to target Arab sheikhs and tribal elites, viewing them as cruel feudal rulers who collaborated with the imperialist British and exploited tribesmen and believed that the proletariat class must fight against them. However, the party failed to recognize the crucial role that sheikhs played in maintaining the structure of tribal life and social reproduction, specifically at the rise of hegemonizing nationalism that tended to exclude non-assimilated groups.

In the late 1940s, the recent oil-sharing agreements between the United States oil companies and Venezuela and Saudi Arabia significantly impacted public opinion, leading to pressure on the Iranian government to increase its share of oil incomes (Ferrier, 1988). Although the oil agreement between Iran and AIOC was revised several times, it was perceived as deeply unfair by the public. Soon, the desire for a more equitable share of oil income quickly evolved into a demand for full nationalization. Finally, in March 1951, the

parliament passed a bill proposed by popular Prime Minister Mohammad Mosaddeq for the nationalization of Iran's oil industry.

The nationalization of oil in Iran was a reformist project that aimed to create a national capitalist accumulation without fundamentally altering the composition of the ruling class (Matin, 2013). The government's main goal was to gain control over oil revenue and invest it in restructuring Iran's socio-economic conditions, including the development of infrastructure, education, and healthcare systems. The hope was that these investments would swiftly transform Iran into a modern capitalist nation-state (Fateh, 1956). Mosaddeq believed that the only way to save the country was to increase revenue and improve the quality of life for the Iranian people (Fateh, 1956). The state control of the oil industry was considered essential to achieving this goal of social and economic modernization (Matin, 2013).

Hence, the objective of oil nationalization was primarily to serve the nation's interests as a whole and *elsewhere* rather than prioritizing the needs of those residing in the oil-rich regions, such as the local communities in Khuzestan. Although oil workers were promised benefits from nationalization, there were no explicit plans to address the pressing issues faced by other locals in the region nor to ensure they received a fair share of the oil revenue.

Therefore, the process of oil nationalization and the localization of the oil industry failed to yield favorable outcomes for indigenous communities: Segregation and fragmentation among different factions of oil workers persisted, becoming entrenched practices within the industry. Disparities in spatial distribution and environmental conditions linked to the

oil sector remained unchanged or worsened.

Recognizing the colonial aspect of oil nationalization is crucial to understanding its failure to acknowledge the rights of indigenous inhabitants, including Arabs and other native communities like the Bakhtiari people in northern Khuzestan. This omission is particularly significant for the Arab population, given their history of exclusion and subjugation within the framework of Iranian nationalism characterized by hegemonic tendencies.

Agribusiness Industry: “Asset Stripping” and Making of the Fragile Landscapes

From the 1960s, in Khuzestan, in addition to the oil industry, large-scale agribusiness plantations centered on sugarcane cultivation using foreign investment have evolved into a battleground for what Clyde Woods (2009) calls “asset stripping.” Woods defines “asset stripping” as a practice that involves the systematic deprivation of a community or region's assets for the benefit of a privileged few¹⁸. By limiting the possibilities of sustainable social reproduction, mega projects reduce the resilience of local communities to drought and dust storms that became more frequent and severe due to the “double curse” (Woods, 2009) of the oil and agribusiness industries. The process accompanied by massive property dispossession has profoundly reshaped property dynamics, often paralleled by state-sanctioned violence. The high number of Arab prisoners and disproportionate use of the

¹⁸ This concept is applied in multiple contexts ranging from historical instances like the dissolution of monasteries in Tudor England to modern neoliberal policies that promote the privatization of public assets and deregulation of corporate activities. Specifically, asset stripping is described as the selling or moving of equipment, plants, firms, or property sectors to maximize short-term profits at the cost of long-term community welfare. This process often leaves behind only debts and deteriorated communities, effectively impoverishing the populace while enriching a small elite. Woods notes that asset stripping is not merely a corporate practice but is also embedded in public policy, often leading to increased racial and class disparities (Woods, 2009).

death penalty against them is an emblem of such violence (Amnesty International, 2021).

The agricultural industry must be seen as part of the urban system of the oil region. These projects had a transformative impact on the province's spatial landscape by forcing many villages to be abandoned and their residents to relocate to urban centers. This shift contributed to the expansion of slums on the fringes of Ahwaz (Bahmani & Moltafet, 2020) and the establishment of "model towns" (shahrak), which were inadequately planned and unsuitable for decent living conditions (Ghazi, 1977). Many displaced peasants swiftly transitioned into wage laborers in plantations and the urban industrial sector with exceptionally low wages (Richards, 1975).

Grace Goodell (1986), through ethnographic research, provides a meticulous investigation of how the very structure of life was ripped off in geographies where sugar cane projects were established, argues that the agribusiness project undermined the predictable, corporate integrity of communities' norms and structures, replacing them with an obscure world of laboratories, factories, and multinational investment. She observed how the built environment and social life in the model town were designed to restructure the social reproduction of former peasants through an extreme form of centralization planning and policing, which for decades to come remained external (Goodell, 1986).

At this time, the Arab people, who comprised most of Khuzestan's agricultural landowners, had become so powerless that taking land away from them seemed feasible and required minimal negotiation and monetary force. Therefore, in implementing agribusiness plans,

Arab people were first removed from their land (Richards, 1975). Although the same process of top-down implementing mega projects was enforced in northern Khuzestan, too, Bakhtiari people could better cope with the consequences. Figure 25 shows the location of oil fields and agribusiness plantations in Khuzestan. Ahwaz, in the middle of the map, is observable.

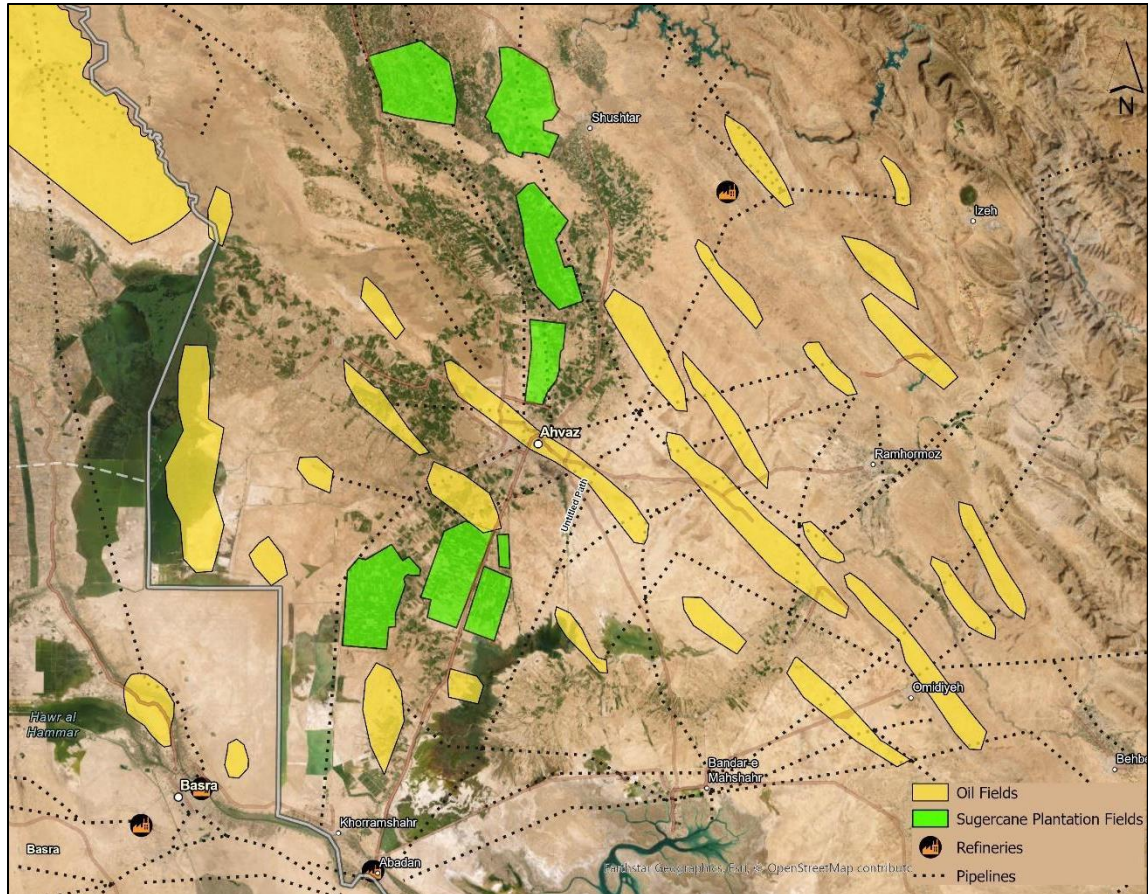


Figure 25 The Location of Oil Fields, Agribusinesses, Pipelines, and Refineries in Khuzestan. Source: (Oil Spill Response Ltd, 2020)

In the 1960s, inspired by the 1933 Tennessee Valley Authority Act (TVA), multi-national agribusiness projects focused on sugar cane cultivation began in Khuzestan, intending to enhance the productivity of agricultural lands and “convert the desert into farmland” (Richards, 1975). Khuzestan Water and Power Authority (KWPA) was established in 1959

as an agency similar to TVA, responsible for a plan to develop the natural resources of the Khuzestan region in a coordinated manner. The plan included the construction of 14 dams, power production of 6,600 megawatts, and hundreds of miles of canals to irrigate an area of 2.5 million acres (Richards, 1975).

The first agribusiness under the KWPA scheme was established near Haft-Tapeh, north of Ahwaz. To make way for agribusiness, the KWPA acquired lands from 58 Bakhtiari and Arab villages within the project, often against their will (Ghazi, 1977). Within a year of the project's inception in 1974, more than 17,000 people were estimated to have been displaced, and this number soon increased to more than 40,000 (Ghazi, 1977). In an attempt to resettle these people, the KWPA constructed five model towns (shahrak) where the displaced villagers settled in dire conditions.

These Shahraks were poorly equipped for urban life, lacking piped water or waste facilities. Communal taps were the source of drinking water, and for every two units there was only one bathroom. The units were extremely small to prevent former villagers from keeping livestock (Ghazi, 1977). These policies aimed to eliminate any alternative livelihoods and control former villagers' social reproduction, transforming them into wage laborers suited to the newly established industrial agriculture. To prevent any resistance to eviction, the KWPA initially removed the most vulnerable communities, who were the Arab communities, and later similarly treated the Bakhtiaries (Richards, 1975). In Shahraks, controlling policies were more stringent against Arab people. For example, keeping buffaloes, traditionally the livestock of the Arab people of Khuzestan, was banned, while

other livestock, such as sheep and goats, became limited but not completely banned. This removal of their primary source of meat and dairy resulted in immediate malnutrition (Ghazi, 1977).

Many peasants who were dispossessed and displaced soon became wage laborers, but wage rates for unskilled labor remained extremely low. Despite this, KWPA managers blamed the workers for the project's failure. According to a senior executive at KWPA, peasants did not want to work for the agribusinesses because they were not faced with absolute economic necessity and could "pick and choose" (Richards, 1975). This attitude was reminiscent of the British APOC managers' assumptions about local nomads and farmers in the past. The scheme managers frequently referred to dispossessed peasants as "lazy" because they were reluctant to conform to the plan's labor requirements in the model towns (Goodell, 1986).

As previously noted, from the 1920s, the concept of a powerful central government that enforces social policies became synonymous with development, progress, and patriotism. In Khuzestan, the political impetus behind large-scale projects was to establish the modern technocratic order of the central government as the sole legitimate authority to enforce social policies in the form of public welfare (Ehsani, 2009). The decision to introduce sugar cane plantations to Khuzestan was partly motivated by an ideological and nationalist drive to revive the region's former glory as a major sugar cane producer in the pre-Islamic era. However, many experts had skepticism about this policy, and indeed it has proved disastrous in terms of socioeconomic and environmental aspects (Ehsani, 2017).

Despite its failure to achieve productivity (Zargar, 1999), the policy was continued by the central government after the 1979 Revolution, leading to the dispossession of local farmers, particularly Arab people, through the establishment of several sugar cane plantations throughout Khuzestan. In 1989, a decade after the revolution and by the end of the 8-year Iran-Iraq war, seven sugar cane agribusiness units were planned to be established around Ahwaz. There were 49 villages in only one of these units, 48 of them were Arab majority (Zargar, 1999).

These projects received resistance from villagers who complained about the unfair compensation of the Sugarcane and By-Products Development Company (SBPDC) for their lands. They were rightfully concerned about the contamination that the sugarcane development would bring into their lands and water. A concern that proved correct later. There was no environmental provision attachment to Sugarcane agribusiness plans. Thus, the environmental impacts of the plans were unknown for years after implementation. The farmers who did not move found their water and lands contaminated and salinized due to the intense use of chemical fertilizers, pesticides, and industrial sewage (Hardani et al., 2018). The mono-crop plantation diminishes the soil fertility for the cultivation of traditional products like dates.

Dispossessed and displaced farmers who, if lucky, settled in newly constructed towns, and if not, settled themselves at the margins of Ahwaz and other cities, led to what Goodell (1986) describes as “the destruction of the elementary structure of social life.” During the very first plantation projects in the 1960s, local farmers gained little to nothing since they

were already deeply in debt. The meager compensation (if any) went to buying a house in assigned *shahraks* (Richards, 1975). In after-Revolution agribusiness schemes, there were also many legal disputes between farmers, who most often lost their property against their will without fair competition (Zargar, 1999).

The War and After War: Post-Industrial Oil Cities and Reforms in Labor Policy

The war began shortly after the 1979 Revolution before Khuzestan was fully equipped to handle the massive dispossession caused by mega projects. The Iran-Iraq war, lasting eight years until September 1988, had a profound impact on Khuzestan's social, economic, and environmental structure, as it was the main battlefield. The war left lasting scars, with destroyed farmlands, contaminated soil, and water from toxic military residues. Around five million people were displaced from their homes, and major cities such as Abadan, Khorramshahr, and Susanger were almost completely destroyed, along with 523 small towns and villages leveled to the ground. Ahwaz was a target of several bombings during this period (Pourahmad, 1998).

Numerous inhabitants of Khuzestan were uprooted from their homes, with an approximate figure of over 500,000 individuals seeking refuge in other provinces and the remainder relocating to safer areas within Khuzestan. Those with ties and family members in other provinces could escape the war zone. On the other hand, the indigenous population of Khuzestan, who had lived in the region for generations, had no viable escape route and consequently bore the worst outcome.

Following the conclusion of the war, those who had sought refuge found returning to their

homes a difficult and exasperating process. Their once-thriving homelands were now destroyed, contaminated, and, in some instances, mined. The government's slow reconstruction plan only added to their struggles.

Refugees from Khuzestan's rural regions and small towns who relocated to Ahwaz had a chance to integrate into the new urban society if they had social and economic networks and resources. However, those without such resources were pushed to the city's margins and became part of the growing numbers of the unemployed "surplus population" and the labor reserve army. Despite four decades passing since the war, there still exist war refugees who are unable to return to their destroyed hometowns or enhance their living conditions in Ahwaz (Master Plan, 2018).

Abadan's refinery suffered severe damage during the war and was not rebuilt adequately. This was on a scale that caused refined product exports to cease for several years (Long, 1984). Ehsani and Elling (2018) compared the post-war Abadan and post-industrial decayed cities in the United States, such as Detroit and Gary.

The devastation wrought by the war, combined with the subsequent structural adjustment policies started in the 1990s, altered labor relations within the oil industry and further restricted employment opportunities for those who were already marginalized by other processes, including a great portion of the Arab population. The post-war policies involved the privatization of state assets and the casualization of the workforce. In 1990, only six percent of the Iranian workforce was employed on temporary contracts, whereas today, approximately 90 percent are (Maljoo, 2017).

Within the oil industry, too, many workers were being made redundant, and new hires were only offered temporary contracts. Between 1997 and 2005, more than 65000 salaried workers in the oil industry were laid off or retired involuntarily (Maljoo, 2012). The hiring process was outsourced to newly established "Workforce Contractor Agencies" (Maljoo, 2017), resulting in a massive casualization of the oil industry workforce. Only in Abadan did about 200 human resource contract firms mushroom that were involved in recruiting temporary contract labor in a matter of a few years after the war (Maljoo, 2017). As a result, a larger portion of the oil industry workforce became deprived of the advantages that the oil industry once offered. To this day, the growing body of contract workers in the oil industry remains at the bottom of the labor hierarchy, with the lowest rate of pay, least job security, least job benefits such as healthcare insurance, and most hazardous assigned tasks.

Once again, the Arab population bore the worst outcome of this process. Although there is no official data on the ethnic makeup of the oil industry, it is widely believed that contractors (whether domestic or international) prefer not to hire Arab people, instead opting to bring in migrant workers from other parts of Khuzestan and even other provinces. As a result, a dangerous idea is growing that targets migrant workers as "job stealers," which has become the new source of social conflict and resentment. There have been reports of conflicts between migrant workers and indigenous Arab people who expected to be hired as wage laborers as oil infrastructures and agribusinesses continue to encroach on their land (e.g., TABNAK, 2017; "E'teraze Javanane," 2020).

Conclusion

Although the effects of the oil industry on communities residing near oil infrastructure have

been studied to some extent in academic literature, there remains a significant gap in knowledge regarding its influence on the transformation of social relationships related to race and ethnicity. This is a critical topic as it can enhance our comprehension of social reproduction under the oil industry and its association with larger geographical concerns such as ecological devastation and land expropriation.

In this chapter, I endeavored to show the racialized/ethnicized geographic dimension of oil capitalism by investigating the transformation of social relationships that took place from the early 20th century in Khuzestan and, as a result, the Arab population being relegated to the lowest rung of the social hierarchy. This is evidenced by their higher rates of poverty, unemployment, school dropouts, imprisonment, and living in slums. The transformation was made possible by the oil industry's hiring practices, land expropriation, and ecological damage throughout time, which disrupted the social reproduction of native Arab communities.

In addition to being rooted in the legacy of APOC/AIOC's colonialist approach, this can be seen as a form of *domestic colonialism*, whereby land and its resources are exploited for wealth accumulation *elsewhere*. However, examining the condition of the subaltern population in Khuzestan through the lens of domestic colonialism alone would be oversimplified and incomplete without considering the role of urbanization in fostering anti-colonialist nationalistic sentiments, which could not avoid another form of colonialization. Today, the built environment of oil cities, such as Ahwaz, is both a manifestation and a factor in perpetuating domestic colonialism.

I argue that the restriction of Arab participation in the oil industry during its initial stages, leading to their exclusion from the urban oil working class, was a pivotal factor that heightened their vulnerability to future oil encroachments and events such as agribusiness expansion and war. The transformation of ethnic relations was inevitably accompanied by environmental destruction. The oil industry plays a central role in creating ecological and economic vulnerabilities for the native population in Khuzestan through the pollution of resources, dispossession, and unequal distribution of access to resources. Environmental destruction is a means through which such unequal social relationships are sustained and reproduced on a daily basis.

In the next chapter, I delve more into the current condition of social reproduction in Ahwaz amid the environmental pollution and ecological destruction of the oil industry and how various segments of the population navigate their daily lives under such conditions.

Chapter Six: Flash-Forward: Social Reproduction and Everyday Ecology of Surplus Population in the Oil City

In this chapter, drawing upon the narratives of 35 in-depth interviews with residents of Ahwaz¹⁹, reports, newspaper reports, and existing studies, I examine the aspects of life and social reproduction within this urban environment to answer, "How are hierarchical socio-spatial relationships in the oil city perpetuated through practices of everyday life?". This chapter investigates the continuation of the colonial heritage of APOC/AIOC to the present time and shows how international petro-colonialism and domestic petro-colonialism follow the same logic.

The assessment is approached through the perspectives of environmental justice and urban political ecology with attention to everyday life and social reproduction. In addition, I utilized the theory of access (Ribot & Peluso, 2003) in explaining urban political ecology, addressing why environmental harms are distributed so unevenly in this oil city. This discussion also explores the varied strategies employed by different segments of the population in coping with the environmental challenges posed by the oil industry in their everyday lives, considering the cumulative advantages and disadvantages inherent in the oil city.

In this chapter, the primary focus will be on the city of Ahwaz. However, as previously elaborated, the concept of oil urbanization in this study is comprehended as a regional phenomenon. The drying out of rivers and marshlands and displacement of the rural

¹⁹ See the methodology chapter for more details.

population due to oil industry encroachment are as integral to oil urbanization as slum expansion and company neighborhoods. Cities represent dense networks of interwoven socio-spatial processes, simultaneously embedded in both local and global contexts (Swyngedouw & Heynen, 2003). Throughout this intricate process, the trajectory of power, in conjunction with urban infrastructure and sacrifice zones, is configured, contributing to the reproduction of the unequal distribution of costs and benefits associated with environmental changes in the oil city. Figure 26 shows the location of ecological features Around Ahwaz.

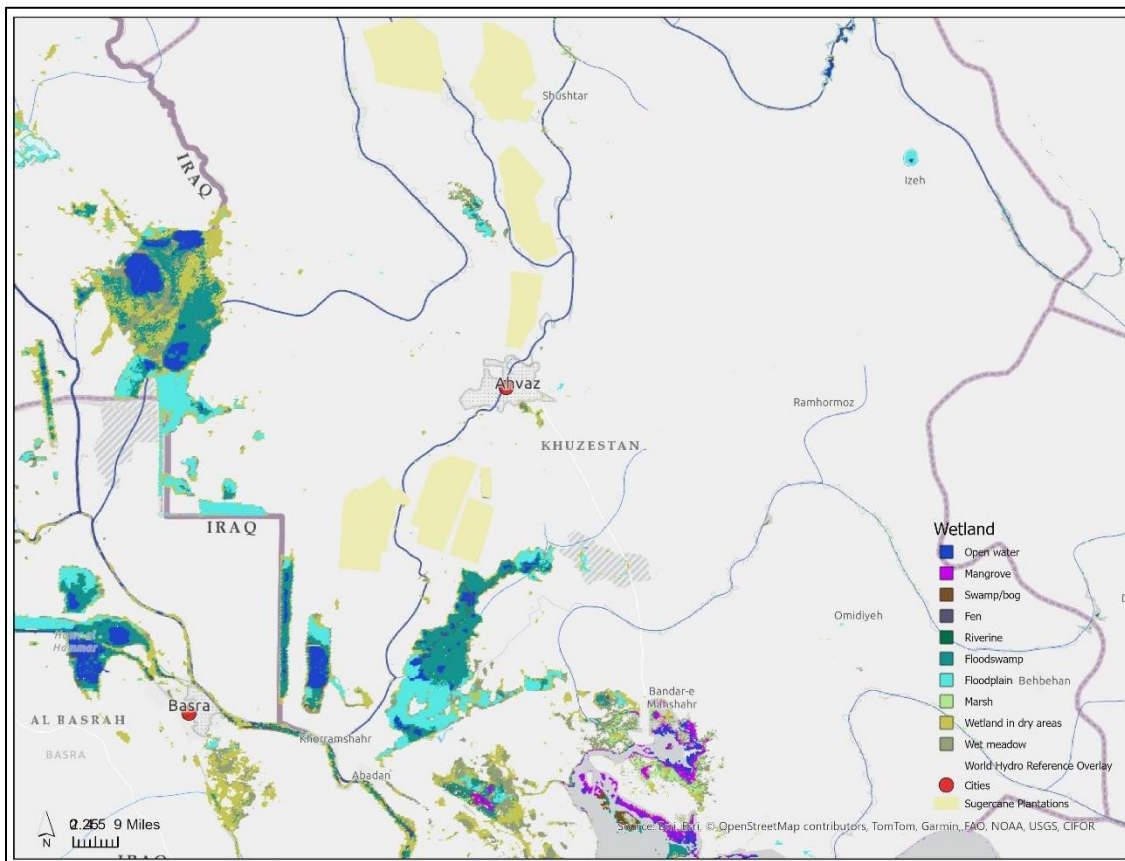


Figure 26 Ecological Features Around Ahwaz

To structure this chapter, I begin by narrating a story from one of the interviewees in this study, providing insight into life on the fringes of the oil city. This narrative serves as a

foundational element for the subsequent sections of the chapter and is revisited multiple times. Following this, I examine urban and regional environmental pollution, highlighting the contributions of the oil industry to the ecological degradation within its area of influence. Then, I analyze contemporary oil-driven urbanization and its perpetuation of colonial characteristics, which I discussed in the preceding chapters. Next, I elucidate how such ecological degradation, occurring at various scales, has resulted in the marginalization of certain populations. Finally, I investigate the intersectionality of gender, class, and ethnicity in Ahwaz, exploring the environmental harms experienced by marginalized communities.

Layla, 50 years old, the mother of two young boys living in Khorusi, one of the several Arab-majority slums of Ahwaz, worries about her sons' unemployment. They have been searching for a job for several years now, with no luck, except for some temporary wage labor here and there. Layla has a small grocery shop as the only income source for a family of seven. The boys are married, one of them has a little girl, and all live together. Layla bitterly says, "There are plenty of jobs in Ahwaz, but they do not hire Arabs." She thinks that if her sons had Persian names, they could have found a job long ago. She mentioned some of their neighbors and relatives who had changed their last names to more Persian-sounded names in order to get a job. Although there are no official statistics to support this claim, it is a widespread belief in Khuzestan that Arab people have a slim chance in the oil industry.

During hot summer days and when dust pollution hits the city, Layla does not let her sons

go out for heavy, open-air physical labor because of health concerns. She recalls cases of relatives and neighbors who collapsed or even had heart attacks while working in hot temperatures. Temporary wage jobs do not offer insurance or any type of social support, making Layla more concerned about her family's health. The money her sons can possibly earn from day-to-day jobs is not worth the risk. In the summer of 2022, when I interviewed Layla, they could earn 150k Tumans (~5 USD) per day, which could buy two pounds of ground beef.

Layla and her husband fled from Mahshar in 1980 after the Iraqi Air Force bombed their home. They ended up living in a cramped three-bedroom house with Layla's brother and two other families. Layla's husband tried to get a job somewhere in the oil industry, but his efforts were unsuccessful, and he eventually found work in a bakery. He had to retire early due to health problems caused by standing for long hours and carrying heavy objects.

Layla herself suffers from chronic respiratory issues and feels short of breath after a small walk. When I asked if she had seen a doctor, she said she had, but because she does not have any health insurance coverage, she could not afford the cost of hospitalization and medical treatment. Thus, the doctor gave her three instructions to at least control the issue from worsening: do not go out when there is dust pollution, do not go out when it is too hot, and do not eat spicy food. Layla bitterly smiled when she told me, "I avoid spicy food, but how can I manage the lives of seven people if I stay home?"

Despite their poverty, Layla and her husband saved enough money to buy a small house in Khorusi, although they lack the documents that prove their ownership. Occasionally, they

face the threat of evacuation by the municipality. However, their dream is to exchange their current residence for a larger home so their second son can marry and bring in his bride to live with them.

Layla's ultimate dream, though, is for her sons to get jobs at the oil company. She even once sold her jewelry to bribe an oil company employee who promised to arrange a job as a truck driver for one of her sons. The promise turned out to be false. Unlike her sons and husband, Layla has never tried to get hired in the oil industry. When I asked why, she said it was obvious that she couldn't get such a job as a woman.

Khorusi is situated adjacent to the city's cemetery and, like many other slums in Ahwaz, is characterized by muddy streets, open sewage canals, and overcrowded schools. Despite being developed in the 1960s, the residents of Khorusi do not possess title deeds, and their houses are officially considered state-owned, putting them at constant risk of eviction ("Be Dalile," 2020). Ahwaz has the second-largest slum population in Iran after Tehran, with more than 90% of its inhabitants being Arabs (Ahwaz Master Plan, 2018). According to the 2016 census, Ahwaz's urban population is nearly 1,200,000, with nearly 400,000 (one-third) residing in thirteen slums or *informal neighborhoods*, as preferred by city authorities (Bahmani & Moltafet, 2020). The harsh heat, dust pollution, air pollution, and lack of clean drinking water are more acutely felt in slum areas.

Slum dwellers are particularly vulnerable to the increasingly severe and prolonged dust storms. This is because they are more likely to engage in physical labor, which poses a higher health risk in the case of heavy dust pollution than those working clerical jobs.

Access to clean drinking water is a significant concern in marginalized neighborhoods, as tap water is not safe in Ahwaz, and water purification devices are often unaffordable for slum residents. Layla says that her grandson occasionally drinks the contaminated tap water and becomes ill. She laments that this is common among children in the area, who often drink whatever water they come across when feeling thirsty.

Layla's narrative unveils a portrayal of life in the oil city, offering insights into living at the periphery of the logistics of petro-colonialism. In the subsequent sections, I will delve into various aspects of socio-environmental everyday life in Ahwaz to understand how life is organized within the oil city to serve the interests of the global market.

Environmental Pollution in Ahwaz and the Way People Make Sense of It

Environmental issues in Ahwaz are numerous and act at various geographical scales, from bodily scale to city, regional, and global scale. As most bothering environmental issues, participants of this research pointed out dust pollution, water contamination that includes undrinkable tap water, and visible pollution of the Karun River that passes through the city, air pollution as the result of gas flares and industrial activities and sugarcane agribusinesses around the city. Central to these concerns is oil, with Khuzestan hosting over 80% of Iranian oil extraction and 24 petrochemical plants (IRNA, 2023). The Ahwaz oil field, home to 500 wells, and the extensive operations of oil and petrochemical companies have introduced numerous pollutants into the environment (NIOC, 2020). A 2017 report from Iran's Department of Environment revealed that the oil industry accounted for over 60% of air pollution in Ahwaz, including emissions from continuously burning gas flares (Sahme Naft, 2017). Regionally, oil extraction operations significantly contribute to Khuzestan's

environmental degradation, directly affecting Ahwaz's residents.

The commencement of oil extraction in the Ahwaz oil field dates back to the 1950s and is under the ownership of the National Iranian Oil Company (NIOC). Over the years, oil infrastructure has expanded into the city, both in terms of geographical coverage and environmental consequences. Currently, there are over 200 oil wells and gas flares situated in the northern (adjacent to the airport), eastern (near Chahar-Asb Square, Figure 27), and western (near Al-Ghadir Stadium) areas of the city (Pedram Khoo, 2018), which have made Ahwaz a focal point of pollution in Khuzestan (Borna et al., 2021). Approximately 75% of all pollutants generated by the oil industry are directly emitted into the air. Key air pollutants encompass sulfur oxides, nitrogen oxides, hydrocarbons, ammonia, and suspended particles. Hydrocarbons, in particular, contribute significantly to elevated levels of air pollutants during the oil extraction and refining processes (Borna et al., 2021).

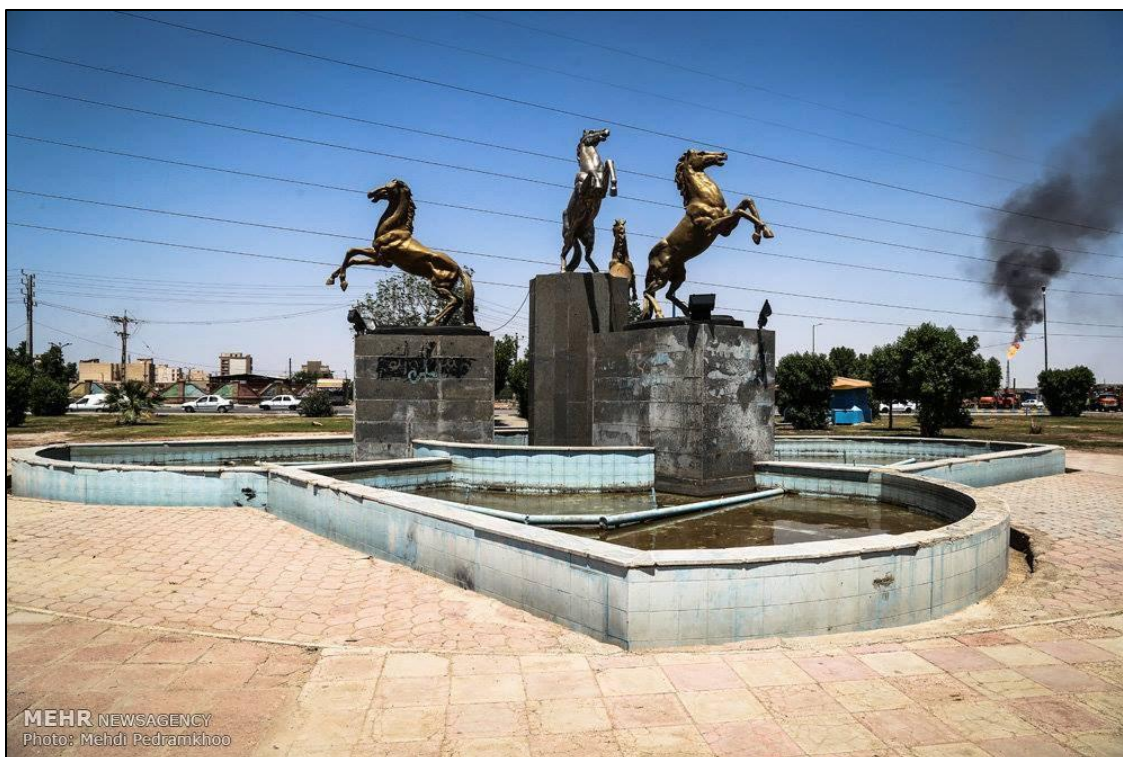


Figure 27 Flare smoke near Chahar Asb (Four Horses) Square, east of Ahwaz, Source: Mehr News

During my initial visit to Ahwaz in 2005, the towering structures adorned with perpetually burning flames captured my attention. I was told that these were gas flares, a process involving the burning of excess gas during oil extraction and transit through pipelines. I came to understand that gas flares had, in the past, held a ceremonial significance for Ahwaz residents who would gather around them to celebrate "Charshanbe Soury," the last Wednesday of the Persian calendar symbolizing the warmth of spring through fire festivities. However, this nostalgic memory does not encapsulate the entire narrative surrounding gas flares.

Gas flaring is both wasteful and environmentally detrimental, primarily because the gas waste could be captured and transported for further utilization instead of being burned at its source. Oil companies across the Middle East opt for flaring over capturing due to

economic considerations (Cossins-Smith, 2023). Studies indicate that the CO₂ emissions from the flares in Ahwaz significantly contribute to the potential warming of the region (Rouzhkosh et al., 2022). Moreover, these emissions impact rainfall patterns and exacerbate drought conditions (Rouzhkosh et al., 2022).



Figure 28 A gas flare in Ahwaz from a distance, Source: Mehr News

Gas flaring occurs extensively across the Persian Gulf, releasing toxic pollutants that disperse over hundreds of miles and contribute to the deterioration of air quality throughout the Middle East (Pinnell & Ibrahim, 2023). In 2016, Iran ranked as the third-largest producer of gas flaring globally, following Russia and Nigeria, with the majority of this activity concentrated in the Khuzestan oil region (Mirrezaei & Orkomi, 2020).

Furthermore, the toxic fumes emitted from the flares pose severe health risks to residents

living in proximity. These risks include exposure to harmful concentrations of carbon monoxide (CO) and sulfur dioxide (SO₂) (Ismail & Umukoro, 2012; Mousavi et al., 2021). Elevated levels of these pollutants are associated with cardiovascular hospital admissions (Dastoorpoor et al., 2018) and have been linked to various health issues such as strokes, cancer, asthma, and heart disease, particularly in children, according to international health organizations, including the World Health Organization (Cossins-Smith, 2023).

Despite the significant environmental and health ramifications associated with gas flares in Ahwaz, I observed that many participants did not perceive this as a prominent concern, and very few identified flares as a bothersome issue. When inquiring about the environmental problems that concerned them the most, respondents often highlighted dust pollution and water contamination—issues that were more visibly disruptive to their daily lives. It shows that the direct negative impacts of the oil industry are effectively obscured in both time and space. Even a 38-year-old interviewee went as far as to suggest that I focus my research on Abadan instead of Ahwaz because, in his view, "oil has no presence in Ahwaz!" This sentiment shows the complex perception surrounding the oil industry in Khuzestan. In Ahwaz Master Plan (2018), oil is only mentioned as one of the province's "economic" activities, with no connection to the city.

A minority of the participants, specifically those working in the oil industry, were aware of the detrimental effects of gas flares, likely informed by their work experiences. An interviewee linked the rise in Ahwaz's temperatures to these flares, commenting, "The continuous operation of flares in Ahwaz raises the air temperature by two or three degrees."

Ahmad, male, Aran also noted,

Flares are the worst of them all. They cause the biggest damage, but we don't feel it, unlike dust and dirt, which we can see. But the rate of cancer and diseases has skyrocketed in Ahwaz. My uncle got cancer because of the flares.



Figure 29 Gas flares in Ahwaz, Source: Mehr News

Environmental pollution from agribusiness, like that of the oil industry, has regional and urban aspects. It finds its way into cities, impacting urban environments and residents. Heavy smoke from the pre-harvest burning of sugarcane plantations is felt in Ahwaz (figure 30). Eighty thousand hectares of sugarcane farms in the north and south of Ahwaz produce smoke for more than 120 days during the months from October to April. Water shortages have become a problem in cities, specifically in marginalized neighborhoods, as industrial

agribusinesses consume a huge amount of water. Water problems have become the source of significant social unrest and urban riots, such as the Abadan revolt in 2000 and the Ahwaz revolt in 2021.



Figure 30 Pre-harvest burn of sugarcane fields produces colossal air pollution, Source: Mehrnews, 2016

As detailed in Chapter 4, in addition to the oil industry's impact, sugarcane agribusinesses constitute a persistent source of environmental pollution in Khuzestan. In Ahwaz, the adverse effects of agribusiness operations manifest in the pollution of air, water resources, and soil (Habibi Nia & Dashti, 2018; Hardani et al., 2018). The residents of Ahwaz experience heightened air pollution during specific periods of the year, typically in October and April, coinciding with the pre-harvest burning of sugarcane plantations. This practice poses significant health risks for both workers and residents exposed to the smoke and particles emitted during the burning process (Adegboye, 2022). There is "no safe level" of

exposure to toxic particles resulting from this practice (Wilkin Brutus, 2023). An Ahwazi woman vividly described the situation, stating,

The entire city becomes filled with smoke. Black particles enter my courtyard, and it is also said to be harmful to the respiratory system.



Figure 31 Several Sugercane Argibussineses around Ahwaz, Source: Google maps

One of the highly debated oil policies in Khuzestan involves the deliberate drying of Hoor-Al-Azim, a vast marshland in southern Khuzestan, driven by the imperative of cost-effective oil extraction for the state-owned National Iranian Oil Company (NIOC) (Madani, 2021). Substantial portions of this marshland have experienced desiccation, which is attributed to the development of the Azadegan Oil Field and the proliferation of heavy metal pollution within its ecosystem (Albaji et al., 2022).

The commencement of oil extraction in Hour-Al-Azim dates back to 2008 (Waeli-Zadeh, 2021). Research indicates that from 2002 to 2012, the expanse of Hour-Al-Azim wetland within Iranian borders shrunk by over 38,000 hectares (Figure 30) (Waeli-Zadeh, 2021). More than 300 oil wells have been in operation within this wetland, contributing to its desiccation (Waeli-Zadeh, 2021).

Despite the alternative option of extracting oil without desiccating the wetland, the oil company chose the more cost-effective approach of drying out the wetland (Madani, 2021). To garner public support, the oil company leverages nationalistic sentiments and often asserts that these oil fields are shared with the Iraqi side, justifying expedited oil extraction by Iran. However, this claim has been refuted by the Iranian Institution of Environment (Waeli-Zadeh, 2021).

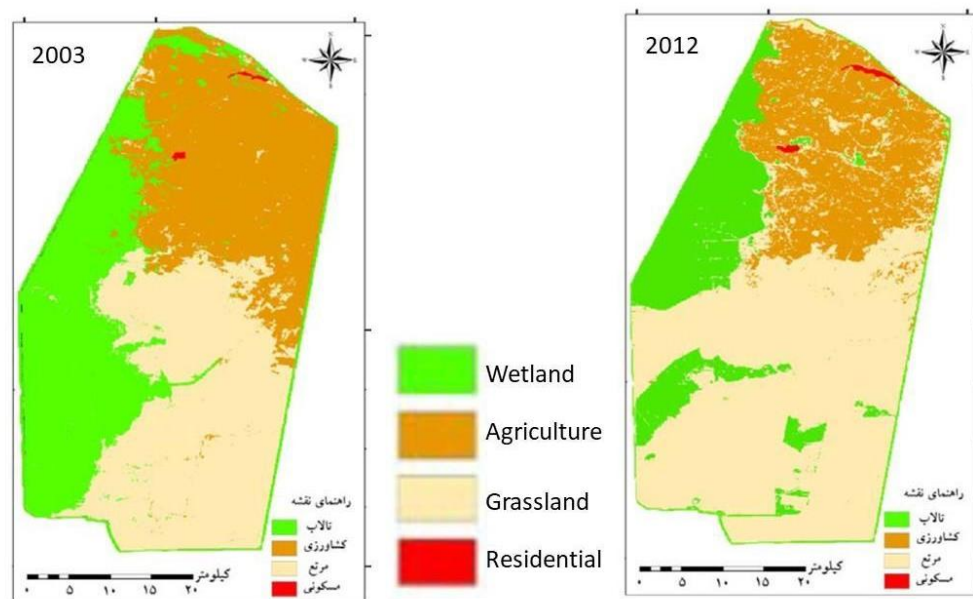


Figure 32 Landuse Around Hur-Al-Azim Wetland Between 2003-2012; Source: (Makrouni et al., 2016)

This model was repeated in Shadegan marshland, southwest of Ahwaz, and it is too under

the threat of drying out and becoming a new source of dust pollution. The breaking and leakage of oil pipelines have caused severe pollution in the Shadegan Marsh. Wildlife fires in the area are frequent as a result of underequipped oil facilities. The disposal of 35,000 cubic meters of toxic waste containing sulfur, sulfur compounds, and heavy metals like vanadium in an area known as the "waste pit" in the western part of the Shadegan Marsh adds to the grim condition (Tahmasbi & Rezaie-Moghadam, 2009).

The ongoing oil extraction activities have contributed to soil and water contamination due to the discharge of toxic materials from oil operations and spills (Saeedi & Dashti, 2018). The continuous discharge of pollutants into the Hoor Al-Azim wetland poses a significant risk of a rapid and cumulative increase in the concentration of metals, particularly vanadium and cadmium (Albaji et al., 2022).



Figure 33 Location of Hoor-Al-Azim at the Iram-Iraq Boarder in West of Ahwaz, Source: Google Map



Figure 34 Several Well-Pads in Hor-Al-Azim Marshes, Source: Google Map

The comprehensive examination of the full consequences of the dried Hoor-Al-Azim wetland is still underway, but existing limited research suggests significant impacts. The reduction of cultivated lands due to soil contamination and water shortages, coupled with the destruction of the environment suitable for buffalo breeding, has substantially increased poverty, unemployment, and workforce migration. Numerous villages have been deserted, with only a few young men and women remaining in the workforce (Farzi & Azkia, 2016).

Qualitative self-reported data also reveals that these communities are grappling with heightened health issues, including respiratory and cardiovascular diseases, as well as mental health problems, such as depression and anxiety. Moreover, the social fabric of these communities has weakened, leading to diminished trust networks. For instance, community members are less inclined to lend money to one another or actively participate

in village matters (Gharni Arani et al., 2017).

The drying of Hoor-Al-Azim has led to considerable ecosystem damage, transforming the wetland into a major source of dust pollution in the region, occurring regularly from mid-summer to early autumn and mid-winter to early spring (Akbari et al., 2022). The dust travels to far distances of the province and reaches cities. This has adversely affected the lives and health of the people in Ahwaz during prolonged episodes of dust storms.

For many participants in this study, dust pollution emerged as the primary environmental issue, being the most noticeable form of pollution in Ahwaz and directly affecting their everyday lives. They recognize the oil industry as a significant contributor to dust pollution. Below are some remarks from participants regarding dust pollution:

The draining of the Hoor al-Azim wetland was a betrayal to this already suffering province, marking the start of an environmental catastrophe. The extent of our suffering from dust and sandstorms is unimaginable.

**

A couple of days ago, when I was at home, I felt like dust was entering my mouth. The air was so filled with dust that it could enter the house even with the doors and windows closed.

**

I feel sick and get severe headaches from the dust. Sooner or later, we will suffer from strange diseases.

This environmental impact directly affects urban residents, underscoring the multi-scalar

nature of oil operations and their environmental repercussions. This emphasizes the importance of comprehending oil urbanization as an expansive phenomenon, as discussed in the literature review of this dissertation.

Frequent and significant sources of soil contamination in Khuzestan stem from oil leaks originating from aging pipelines (Ghorbani et al., 2020; Heidari-Farsani et al., 2013; Nazarpour et al., 2017). Examples of such incidents include the 2012 pipeline explosion in Gachsaran (southeast of Ahwaz), which resulted in the leakage of "thousands of oil barrels" ("Nashte Gostarde Naft" 2012), pipeline explosion in the north of Ahwaz, in 2015 (Khizan, 2015), and an extensive oil leak in the northeast of Ahwaz in 2017 ("Terekidegi Khate Loole dar Ahwaz," 2017).

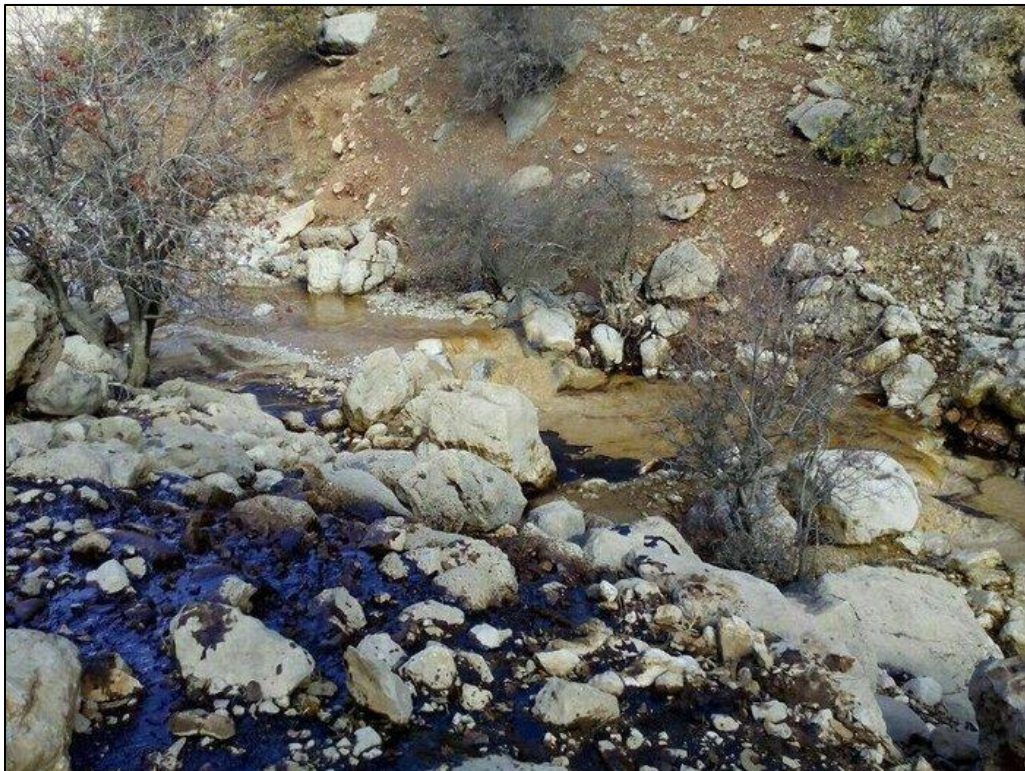


Figure 35 oil polluted area in Mian-Kouh, northeast of Ahwaz, Source: IRNA, 2020

The primary cause of these incidents is the wear and tear of oil infrastructures, coupled with a lack of investment in their renewal. Authorities justify the lack of investment, as they can easily externalize the costs onto nature and local communities. For the National Iranian Oil Company (NIOC), the perceived lower risk of incidents, whose worst consequences are imposed on nature, local communities, and oil workers, is considered less than the cost of renewing investments (Khizan, 2015).

Social reproduction in the geographies of oil production is intricately connected to the global logic of oil circulation. In Khuzestan, the economic sanctions imposed on Iran targeting the oil industry over the past four decades have intensified the environmental catastrophe.

Iran was the most sanctioned country in history before 2022, when the sanctions against Russia came into effect (Vaez et al., 2024). The trajectory of sanctions against Iran began in 1996 with the U.S. Iran-Libya Sanctions Act, targeting foreign investments in Iran's petroleum industry. In 2010, sanctions intensified with the U.S. Comprehensive Iran Sanctions, Accountability, and Divestment Act, which targeted entities involved in Iran's energy sector and nuclear program along with parallel EU measures. These were further amplified by secondary sanctions that pressured global companies to cut ties with Iran, significantly impacting Iranian oil exports. A brief respite came with the 2015 Joint Comprehensive Plan of Action, which eased some sanctions in exchange for nuclear restrictions. However, the U.S. withdrew from the agreement in 2018, reinstating and expanding sanctions to include Iran's financial sector, marking a significant escalation in

economic pressures (Sen, 2018).

These sanctions were ultimately ineffective and counterproductive, significantly impacting citizens' daily lives without meaningfully achieving their intended objectives (Vaez et al., 2024). Reducing Iran's oil exports dealt a severe blow to the economy, reducing household spending across various income levels (Salehi-Isfahani, 2023). The sanctions also contribute to an increased exploitation of natural resources as an economic alternative (Madani, 2019). Effectively limiting Iran's economic growth, the sanctions hinder its ability to diversify its economy away from natural resources, thereby reinforcing the use of natural resources in Iran's economy (Madani, 2019).

Disinvestment resulting from the sanctions led to the temporary cancellation or loosening of safety precautions in the oil industry. Oil worker participants in this study observed an increase in occupational and environmental hazards, including toxic exposure, leaks, and improper disposal of industrial waste, following the imposition of the most severe global sanctions between 2006 and 2016 and their resumption in 2018. They believe the oil industry's outdated and aging infrastructure is contributing to more pollution than it should. Kiarash, a 41-year-old Persian oil welder with years of experience working with oil-sector contractors, has noticed these changes, stating,

In 1999, I was an intern; at that time, if there were adverse weather conditions, the employer was required to cancel work to minimize the possibility of hazards. Nowadays, contractors have taken on all projects, and occupational hazards are not a concern for them at all. There is no monitoring from the NIOC.

Similarly, Ali, 45, an Arb veteran oil worker in Ahwaz, says:

So, we've been hit with sanctions, making it tough for us to get our hands on some crucial industrial components and materials needed for oil operations. These things are not easily replaceable and are pretty worn out. Our bosses told us, 'Well, we can't get these new parts, but it's no big deal if carbon and oil end up in people's throats.' Right now, there are rigs in Iran that have been around since Noah's time – some of them are ancient. Old rigs can crank out more pollution due to their wear and tear. I mean, if we could upgrade them, their pollution would be lessened.

He explains in simple terms how the aging infrastructure contributes to increased pollution:

When the drill penetrates the ground, the loosened soil must be removed. Imagine the drill goes three thousand feet below the ground; as the pipe descends, some chemicals are injected down the pipe, reaching the bottom and bringing out the soil and clay that has been loosened around the drill. This, known as drilling mud, is an industrial substance that reaches the wellhead in powder form and is mixed with water there. Mud pumps then pump this mud through the pump pipe, removing the soil from the ground. If the pipes are old and worn out, there's a risk of them cracking (which I've witnessed many times), posing dangers to both workers and the environment. The high heat involved also generates pollution that can't be easily washed away, and alternative actions are often impractical. Near the well, they create a large pit, like a massive pool with a depth of one to two meters. This is where the drilling mud is, unfortunately, absorbing the soil. This practice used to be quite common.

Drilling mud, a chemical substance used in oil extraction, is another significant source of soil contamination in Khuzestan. This substance contains a mixture of heavy minerals and chemical additives. Once the drilling process is complete, the drilling mud becomes spent,

transforming into waste products. Even if treated before disposal, this waste threatens the environment, affecting both soil and water quality as well as public health and wildlife. Upon disposal on the ground, the liquid components of these chemicals infiltrate the soil, causing harm to living organisms in the ground and leading to groundwater pollution (Antia et al., 2022).

In addition, ground and underground water resources face contamination from unregulated industrial activities and the oil industry. The Karun River in Ahwaz has become polluted with industrial and chemical substances originating from both oil and agricultural waste. An analysis of pollutants in the sediments of the Karun River reveals a consistent rise in various physical, chemical, and biological contaminants in the water. This escalation is because of the direct discharge of diverse industrial, urban, and untreated domestic effluents and sewage. The concentration of microelements such as iron, copper, cobalt, cadmium, and lead in drinking water surpasses permissible limits (Tahmasbi & Rezaie-Moghadam, 2009).

Karun River holds significant cultural, symbolic, and emotional value for the people of Ahwaz. For many participants in this research, witnessing the shrinking and contamination of the Karun River represents the most distressing environmental harm. Sana, 40 year-old Persian woman says “when Karun was dried out, I feel like I lost a friend. You may find it reduculieus to you, but I am deeply grieving”. She says one incentive for her immigration was the condition of Karun River that she could not bear witnessing. She currently lives in Mexico City. Another interviewee, emphasizing the religious connection of the minority

Mandaean community, states:

The situation of the Karun River is really saddening. Specifically for the Mandaean community in Ahwaz, whose life and religious rituals are closely tied to the river. Their prayers, weddings, and mourning ceremonies all take place by the river. [...] They baptize their baby boys in Karun. And, in the morning, before prayers, they used to drink water from a special bowl filled with Karun River water. But now, the water is hardly drinkable. Nevertheless, due to their faith, they are compelled to consume it. I've seen them mix the water with their hands, trying to remove some of the visible impurities and alter the taste a bit so they can drink it. (See Figure 36)

In the realm of political ecology literature, the exploration of emotions has become an increasingly significant focus. Within this literature, emotions are not viewed solely as cultural or immaterial; instead, they are intricately connected to the daily experiences of socio-nature inequalities (González-Hidalgo & Zografos, 2020). Environmental politics has profoundly influenced the contemporary discourse on justice (Swyngedouw & Heynen, 2003). Questions about who benefits and who bears the costs of socioecological transformations intersect with emotions such as a sense of citizenship, humiliation, and a sense of powerlessness, reshaping the understanding of environmental issues.

For instance, Bahar, a young Lor-Bakhtiari woman, highlighted the shock she experienced upon learning that other Iranian cities did not face the drinking water issues prevalent in Ahwaz. For her, it was not just the issue itself, but the harsh realization that Ahwaz was lagging behind and the accompanying sense of injustice that proved to be the most frustrating emotions:

Ahwaz's water situation is a total disaster. Here, every household must have a water purification device, or else you can't drink tap water. We used to think it was like this everywhere in Iran, but then we saw people from other cities amazed by our devices. When I first went to Shiraz, I was around 12 or 13, and I couldn't believe people were drinking tap water over there. It was so bizarre for me. That's when I realized we Khuzestanians are an exception. It was humiliating, to be honest. Because I always thought Khuzestan, with all its oil, wealth, and culture, should be leading the way for the other provinces in Iran. Not dealing with this much hardship just to have drinkable water.



Figure 36 Mandaean undergoing baptism (Masbuta) in the Karun River, Ahwaz. With the Karun River getting polluted, their faith practice becomes difficult and sometimes impossible. Source: Wikipedia

The summary above highlights environmental challenges in Khuzestan that are directly or indirectly linked to the oil industry. However, this is not the sole environmental burden the

people of Khuzestan face. The scarcity of drinking and irrigation water has emerged as a significant issue, sparking widespread protests in the past decade, such as the "Uprising of the Thirsty" in 2021 (HRA, 2021). Khuzestan's surface water resources undergo diversion through numerous dams and water transfer projects to central Iranian cities and industrial regions. This exacerbates water scarcity for agriculture in Khuzestan (Abed-Elmdoust & Kerachian, 2014; Hoominfar, 2023; Karamouz et al., 2007). The oppressive heat, with temperatures escalating each year in tandem with global warming trends, is a pressing concern in Khuzestan, and this acceleration is also attributed to oil-related activities (Rouzkhosh et al., 2022; Rajaoalison et al., 2022).

In the next section, I delve into the distribution of these environmental challenges, revealing how they contribute to establishing and perpetuating distinct power dynamics at the local level. These dynamics, in turn, play a pivotal role in expediting the extraction and transportation of oil to the global market. Additionally, I explore how these fundamental power relations, integral to the functioning of the global oil industry, intricately shape the everyday ecopolitics of the people residing near these environmental challenges.

Contemporary Oil Urbanization and Environmental Justice in the Oil Region

As I discussed in the previous chapters, the genesis of Khuzestan's oil cities is rooted in a rigid colonial urbanization paradigm, wherein environmental consequences were dispensed based on racial and occupational stratifications (class) within the oil industry (see chapters 3 and 4). While Iran, and Khuzestan specifically, was not formally colonized by the British and Anglo-Persian Oil Company, the local population perceived these foreign entities' overwhelming power and control as a colonial subjugation. With the

attainment of certain labor rights by Iranian workers within the British oil company and the nationalization of oil in 1951, the racial hierarchy gradually relaxed, giving way to the ascendancy of rank as the primary force shaping the trajectory of oil urban development. This hierarchical structure persists in various forms to the present day. Consequently, despite the complete elimination of foreign dominance following the 1979 revolution, spatial segregation in oil cities endured.

As investigated in Chapter Three, under the control of the British company, Khuzestan's oil urbanization aimed at transforming and modernizing the local community and creating a household model of its employees. This was achieved by imposing infrastructural and housing models designed for efficiency in oil production and transportation to Europe. Following the nationalization of oil under the Iranian state, a similar model was replicated in other regions of Iran and Khuzestan, now under state ownership. For instance, the "model towns" established by state-owned agribusinesses in Khuzestan in the 1960s mirrored the earlier planned oil cities. These model towns followed the same paradigm of enforcing household models, dictating gender relations, and emphasizing sanitation measures through housing design (Goodell, 1986).

The city of Ahwaz did not initially serve as a frontier for oil development in the first few decades. Instead, it primarily functioned as a logistics center and a connecting hub for the oil region, along with serving as a military base for the British forces during the First and Second World Wars. As Ahwaz began its development based on oil exploration, which gained momentum after the 1950s, it had already adopted the colonial logic of oil

urbanization and its hierarchical spatial organization.

The hierarchical urbanization model that originated in Abadan, Masjed-Suleiman, and other oil cities in Khuzestan deeply influenced the spatial logic of oil development in Iran. This model became a pervasive paradigm of urbanization not only in Khuzestan but also in other regions of the country (Ehsani, 2003). What was initially considered a colonial urban space continued its existence as a political-economic tool within the context of the "national" framework.

Consequently, Ahwaz, much like Abadan under British colonial influence, evolved into a dual city. On one side, "company neighborhoods" exist that are endowed with all urban amenities and exclusive advantages. On the other side, there are slums, labeled by city authorities as "urban problems," but in reality, they were shaped by the same underlying logic that gave rise to the company neighborhoods. Despite their apparent contrast, both spaces are products of regional and global oil development.

In Ahwaz, company neighborhoods exhibit a clear division of residents based on their affiliation with the oil company and occupational rank. The high-ranking staff reside in separate neighborhoods from the working class, featuring distinctions in urban facilities, property size, and housing design. High-ranking staff neighborhoods, such as Zeytoun Karmandi (Olive; white collars), New Site, Khorram Kushk, Shahrak Naft (Oil Town), and Kuye Kourosh (Cyrus Neighbourhood), constructed between 1940s to 1980s, boast large bungalows with private gardens, security personnel, gardeners, and access to amenities like schools, clubs, and shopping centers (Mojtahedzadeh & Namavar, 2012). Workers'

neighborhoods exhibit a contrast with smaller houses, simple designs, and fewer urban facilities. For instance, high-ranking neighborhoods were equipped with water pipelines, while workers' houses relied on water from public high-pressure pipes for decades. Additionally, transportation arrangements for employees and workers were separate, with workers not permitted to board the staff bus (Yaqubi-Nejad, 2012).

Participants residing in company neighborhoods depicted their living spaces as "safe, specifically for women," "privileged," "cultural," and "clean." One female Persian participant expressed,

When I enter this neighborhood, I feel the temperature falls by at least 5 degrees Celsius compared to the rest of the city, and that is because of the green space here. People can't believe that there is such a place in Ahwaz. Also, the air is cleaner. I breathe better here. [...] In this neighborhood, we observe animals that were once native to the region but are now long gone in the rest of the city. For example, foxes and hedgehogs and all kinds of birds like parrots. That is because we have more trees here, and nature is better conserved, and population density is low, too.

Such landscape differences reflect the heritage of a hierarchical city structure that persists today. Another interviewee, a 49-year-old woman living in "Oil Town," says,

But it is not like everybody who works in the oil industry gets a house here. You have to be a high-ranking staff member and engineer to be allowed to live in Shahrak Naft.

Figure 37 compares today's canopy cover of high-rank company neighborhoods with a working-class neighborhood (Zeytun Kargari) and an inner-city slum (Hasir Abad).

Although some of these company towns later integrated into the city, and due to the neoliberal labor policies of the Iranian government, these neighborhoods became open to the housing market, their distinctive infrastructure landscape persists.



Figure 37 Aerial photos comparing Ahwaz neighborhoods in green space; Up-left: New Site; up-right: Zeytoun Kargari (workers); down-left: Shahrak Naft (Oil Town), down-right: Hasir Abad (informal neighborhood). Source: Google Maps

In contrast to company towns, there are slums like Khorusi, where Layla resides with her family. The majority of the slum population in Ahwaz are Arab people; some of them are native to the city, and others arrived in Ahwaz at various times and for various reasons. Some are immigrants from the 1920s and subsequent years when the newly established central government made life difficult for Arab people (see Chapter Five). They settled in neighborhoods that are now within the city but still exhibit the characteristics of informal settlements, such as a lack of title deeds, absence of urban facilities, and extreme poverty. Some of these neighborhoods directly resulted from dispossession due to oil development. For instance, according to what one of the interviewees remembered from her family

history, Lashkar-Abad, which today is considered a slum area at the heart of the city, was a neighborhood built to settle Arab people who were displaced from Amaniyeh to make space for constructing oil infrastructure in the 1940s.

Simultaneously, the pulling forces of potential job opportunities created by the oil industry and other related industries (steel plants, petrochemical plants, railroad construction, and agribusinesses) were strong. When asked about their generational story, many participants in this research mention that their grandparents came to Ahwaz hoping to find employment in the oil industry and other emerging industries.

The Iran-Iraq war (1980-1988) added another wave of inter-province immigrants to Ahwaz, who fled the war (Layla's family is among them). Therefore, some people have been at the margin of the city for generations, and the city does not offer them a chance to improve their living conditions. The unemployment rate in Ahwaz slums is 34%, which is 20% higher than the average unemployment rate in Khuzestan (Ahwaz Master Plan, 2018). The most recent influx of immigrants to Ahwaz comprises impoverished individuals, predominantly from Khuzestan rural areas, referred to as environmental migrants (Bahmani & Moltafet, 2020). These individuals have faced challenges such as unproductive land, an inability to provide water for irrigation, and difficulties in fishing and caring for their animals. As discussed earlier, factors such as oil leaks, soil salination and contamination resulting from industrial disposal (primarily from sugarcane plantations and petrochemical plants), water shortages due to dam constructions and water transfer projects, and dust pollution, partly stemming from oil operations in marshlands, have

exacerbated living conditions for these people. Rasoul, 58 years old Arab man, shares his migration experience from a village in Khuzestan to Ahwaz,

We didn't know what to do. The date palms didn't produce dates like before because a lot of dust and sand came from the desert onto them. Vegetables couldn't be grown in the groves like before. It was as if doomsday had come. I had to save my family.

Oil development in Khuzestan has played a pivotal role in the emergence and expansion of informal settlements and slums in Ahwaz. Both company towns and slums are products of the imperative to ensure the smooth production and transportation of oil to the global market. Many of these slums are strategically located in close proximity to oil infrastructure and other sources of pollutants, exemplified by areas like Malashiyeh, Haye-Al-Sourah, and Zoviyeh, which hosts 40 active oil wells. As Auyeno & Swintun (2009) argue, the proximity of these slums to the logistics of oil production is itself a production of dispossession. This close proximity renders them spaces where coexistence with toxins becomes an unavoidable aspect of daily life (Davis, 2018). While it is true that industrial toxins impact other areas of Ahwaz as well, the continual proximity of these places to oil infrastructure exposes them to ongoing everyday hazards.

The expansion of the oil industry and its infrastructure has extended into the urban fabric, actively shaping the production and reproduction of spatial and power dynamics within oil cities (Simpson, 2019). In 2021, this encroachment was exemplified by drilling three new oil wells in northern Ahwaz, in very close proximity to residential areas, specifically Phase 4 of the Kourosh Neighborhood. These wells were a mere 140 meters away from residential

zones, a distance significantly below the stipulated standard of at least 400 meters from residential areas. The primary objective of this project was to boost national-level oil production, prioritizing this goal over the well-being of the local community ("Khatare Mohit Zisti Naft," 2021).

The geographical expansion of the oil industry has led to the gradual erasure of boundaries between everyday living spaces and oil extraction spaces for those who live in its vicinity. The oil industry, spanning extraction, refining, and transit processes, necessitates territorial expansion (Aborisade, 2010). The ecological destruction accompanying such territorial appropriation becomes a pivotal factor in shaping marginalization by restricting oil communities from accessing oil benefits and altering their social reproduction (Lesutis, 2021).

As an example to illustrate how oil development in the peripheries of Ahwaz shapes its urban structure and how this process is vital for the oil industry, the headman of the Arab village of Ruzaneh, forty kilometers southeast of Ahwaz, says:

The facilities and the Karun Oil and Gas Company stationed in the area have seized the agricultural lands and rural properties, conducting oil drilling without obtaining permission or paying any compensation to the villagers. However, we have no right to object because our voices don't reach anywhere." He adds: "They don't even provide employment opportunities in the oil and gas companies. Now, most of the youth in the village are unemployed, or they have sold all their belongings and migrated to the outskirts of Ahwaz, becoming taxi drivers for a living (Neisi, 2015).

These are sacrifice zones, where neglected behavior by industry and government

authorities comes to be seen as tolerable (Colten, 2012). In the context of the oil industry in Khuzestan, sacrifice zones extend to rivers, agricultural fields, marshlands, and the air. Moreover, the people who depend on these resources for drinking, growing food, and breathing are also sacrifice zones. Rather than being unintentional consequences, these spaces are integral to the core operations and functioning of the oil industry.

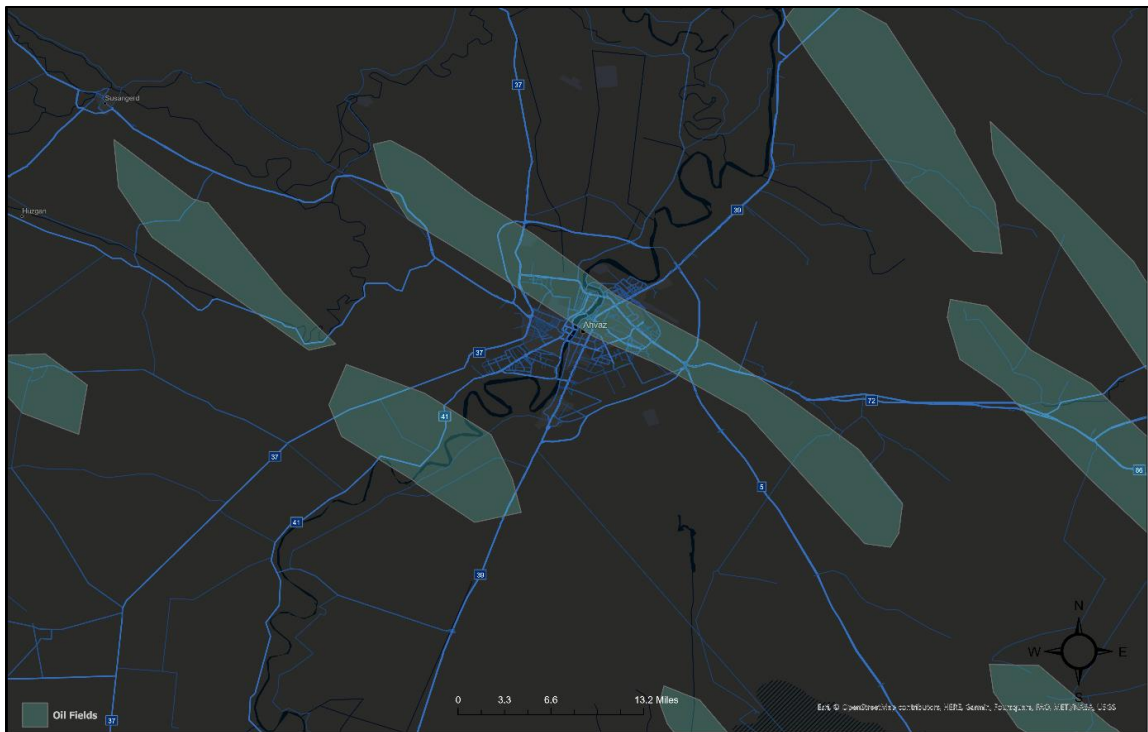


Figure 38 Oil Fields Around Ahwaz; Source: Oil Spill Response Ltd, 2020

Urban Political Ecology of Sacrifice Zones and Access

In the peripheries surrounding Ahwaz, conspicuous signs bearing the message 'Oil-Polluted Area; Absolutely No Stopping' are evident. In the documentary film *Khakzadegan: The Ashen Ones*, a local resident, gesturing toward one of these signs, aptly remarks, “This is our entire share of the oil industry” (Al-Hamoudi, 2004). Over decades, the inhabitants of districts situated within Ahwaz's expansive oil field have grappled with

the pervasive scent and emissions of oil industry waste. The emission of thick smoke and an unpleasant odor resulting from the incineration of oil industry waste has led to significant health problems for the residents of this area. Sizable pools of oil-contaminated wastewater are observable near residences and agricultural fields, rendering the land infertile (Mehdad, 2019). Likely, these people are the prospective inhabitants of one of the slums in Ahwaz.

The absence of environmental preservation, which threatens residents' physical and mental well-being while constraining their social reproduction capabilities, comes from the fundamental reality that the profits derived from the oil industry are underpinned by unpaid costs, primarily manifested as ecological damage (Ortiz, 2020). Participants in the research echoed this view, contending that the government perceives Khuzestan as a “colonized territory” and as a “cash cow” sustaining the whole country — an oil territory without people. They say, if deemed necessary, all residents would be readily sacrificed to ensure the seamless functioning of the oil industry. Illustrating this perspective, Ali, an Arab oil worker, highlights,

During the 2019 flood in Khuzestan, authorities obstructed the natural water passageway, the Hur Al-Azim marshes, due to concerns about potential harm to the oil infrastructure. Instead, they redirected the floodwaters toward villages and towns, resulting in casualties and extensive property damage.

People, too, embody these sacrifice zones necessary for oil development. As Lesutis (2021) argues, the politics of extractivism align with the creation of profound forms of exclusion

and marginalization. The lives of those in proximity to oil infrastructures and those affected by its ecological devastation are intricately linked to the logistics of the oil industry. For slum dwellers in Ahwaz, oil manifests as the infrastructure that influences their daily lives and impacts their health. Their struggles with asthma, respiratory issues, skin rashes, hair loss, fertility problems, and cancer²⁰ represent the tangible sites of oil development ingrained in their bodies. Feminist geographers assert that the body is an environment, particularly for marginalized individuals (Stein, 2004; Sze, 2006). Bodies must be comprehended as sites that unveil how capitalist social relations are embodied within and through the social fabric in intricate ways (Rioux, 2015).

The premature mortality rate in Khuzestan province stands at 18%, exceeding the overall premature mortality rate in Iran, which is reported to be 13%—a 5% difference (Masa'ebe Zendegi, 2020). Specifically, Ahwaz records the highest mortality rates due to blood diseases, infections, heart diseases, neurological disorders, respiratory diseases, and gastrointestinal disorders (Safaei Pour, 2016). Between 2010-2012, 2667 cardiovascular deaths attributed to exposure to particulate matter less than 10 microns (PM₁₀) were recorded in Ahwaz (Geravandi et al., 2016). The detrimental impacts of the oil industry on quality of life and human health are vividly illustrated in the experiences of individuals living near oil infrastructures:

The head of Meliget, an Arab village located near oil facilities east of Ahwaz, expresses

²⁰ These are the health issues that the interviewees mentioned happened to them and their acquaintances.

the dire consequences:

Our children got sick from these oil facilities, and in our small village, we have five cancer patients, two of whom are children. One of them passed away last year, and the other is 12 years old (Neisi, 2015).

A reporter visiting one of the Ahwaz slums observes, "As soon as you enter the neighborhood, the smell of mud and garbage hits you; the dust here is thicker" (Nesar, 2022). In a poignant comparison, a male resident of Zeytun Kargari reflects on her living conditions, stating,

Death in Zeytun Kargari and Zeytun Karmandi is different. In Zeytun Kargari, we don't live, we only die. In Olive Zeytun Karmandi and Kian-Pars and Shahrak Naft [up-town and company neighborhoods], people first live like humans and eventually die (Nesar, 2022).



Figure 39 A dusty day in Ahwaz, Source: Mehr News, 2018

Environmental Harm at the Intersection of Class, Ethnicity, and Gender in the Oil City

In Khuzestan, the experience of marginalization, in addition to class, is intricately linked to the matter of ethnicity and gender. As extensively explored in Chapter Five, the Arab population has endured historical marginalization perpetuated by the state and the oil industry. This marginalization has manifested through practices of dispossession, state violence, and contamination of vital resources. Chapter Four delves into the gender dimension, revealing how women have been systematically denied access to the advantages brought about by the oil industry, particularly in terms of employment opportunities. These forms of marginalization within the oil industry persist and, in some instances, have intensified throughout the years. The implementation of neoliberal labor policies from the 1990s onward, which further excluded a significant portion of the population, coupled with the escalating ecological degradation, has left lasting scars on both women and ethnically marginalized communities.

Environmental degradation and violence are the exclusionary forces of Petro-capitalism, which also determine the power dynamics in the oil city (Reed, 2009). In Khuzestan, the development of the oil industry transformed the access relationship, as the ability to benefit from things—including objects, persons, institutions, and symbols (Ribot & Peluso, 2003), by altering patterns of power, property, and labor opportunities. As a natural resource, access to oil means who, when, and where can reap its benefits.

Shifting the focus from "property rights" to the concept of "access" in the analysis of natural resources aligns with recent embodied approaches in urban political ecology. This

perspective involves "connecting socio-natures of resource distribution with the intimate, meaningful, and power-laden embodiments of such flows among differently situated groups" (Doshi, 2017:126). In this framework, the ways in which social groups experience the benefits or endure harm from the oil flow are shaped by a complex interplay of temporal, geographic, socioeconomic, and political processes. These processes, occurring at both local and global scales, define the current social relationships in accessing the benefits of the oil industry in Khuzestan.

The concept of "access" encompasses various dimensions. In the context of oil development in Ahwaz, I will emphasize labor opportunities and social identity (Ribot & Peluso, 2003). Access to job opportunities plays a pivotal role in determining who can derive benefits from the available resources, and social identity becomes a defining factor in this process (Ribot & Peluso, 2003). This has resulted in the emergence of a form of labor that is characterized by its precarious and disposable nature. In addition to the factors identified by Ribot & Peluso (2003), I argue that the concept of access in the Ahwaz context also has a geographic aspect. This geographic dimension further shapes how different communities or groups interact with and benefit from the oil industry, adding another layer of complexity to understanding resource access in this region.

Despite hosting various industries and agribusinesses, Khuzestan has the highest unemployment rate in 2020, reaching 12.6%, coupled with one of the lowest literacy rates (Iran's Census Centre, 2020). This economic challenge can be attributed to the nature of the oil industry, which relies less on labor and more on capital and nature (Aborisade,

2010). The substantial unemployment rate exerted downward pressure on wages, further exacerbated by the wide scale exclusion of the Arab population from accessing jobs in the oil industry. This exclusion was perpetuated through means such as police violence, stigmatization, and impoverishment, contributing to the economic hardships faced by the region.

The exclusion of a significant portion of the population facilitated the implementation of neoliberal labor policies within the oil industry. A prominent political-economic strategy adopted by Iranian governments post-war (from 1988 onward) to expand capital accumulation involved a fundamental labor force restructuring. This restructuring was achieved through the casualization of labor²¹ and the reduction of labor costs for those who had previously enjoyed job security to a large extent (Maljoo, 2017). As articulated by Woods (2009), such policies aim to curtail the sustainability of the working class, thereby preserving the class hierarchy within capitalist society.

Achieving this goal involved a complex process that included the implementation of various plans and policies. However, a significant contributing factor to its success in Khuzestan was the precarious living conditions endured by a substantial portion of the Arab population of Khuzestan, which was produced over the years (see Chapter Five) and is reproduced every day. This exclusion created a large surplus labor population, the unemployed segment who have little hope of ever being employed. Furthermore, by

²¹ Casualization of labor refers to the trend of employers shifting towards hiring workers on a casual or temporary basis, rather than providing full-time, permanent employment

restricting the means of social reproduction for communities based on their identity, the preservation of the monopoly profit of oil extraction was facilitated. This is rooted in the fundamental contradiction in capital accumulation and the progressive (let alone stable) conditions of social reproduction for the laboring population (Rioux-2015).

The practices of social reproduction play a significant role in determining the processes of production (Katz, 2001). The precarious living conditions of those residing on oil-rich lands or in proximity to them shape the extent to which the oil industry relies on the "free gift of nature" rather than capital investment (Aborisade, 2010). Consequently, the vulnerability and precariousness of the local population influenced the level of *tolerable* pollution and environmental destruction. A powerless and precarious population becomes more susceptible to dispossession, allowing for the easy contamination of their land and neighborhoods.

As mentioned earlier, even though there is no publicly available data to substantiate this claim, it is widely believed in Khuzestan that the oil company and its contractors are reluctant to hire Arab people. A few years ago, unofficial and undisclosed data came to light, indicating that between 2009 and 2016, out of more than 4000 new hires in the oil industry across all levels, only four were Arabs (Alavi, 2020).

Both Arab and non-Arab research participants concurred that there is discrimination against the Arab population in the hiring process. Hasan, a 35-year-old Arab man, recounted,

When I was looking for a job, they openly stated that they don't hire Arab

workers. Once, the head of a contracting company told me, 'Arab labor is of no use to me.

Edris, who has been unemployed for a while, shared,

Even for basic roles, like service and security, they prefer not to hire native Arab people. Among managers in all industries in Khuzestan, you can see no Arab people.

He lived in another city in Iran for a period and noted,

I feel much better there. People are not as racist as they are in Ahwaz toward Arab people; the history of encounters here is so intense.



Figure 40 A group of Arab people from Geyzaniyeh gathering in front of pipelines near their community, demanding jobs. The placard reads: "We are protesting against hiring non-native labor in the oil industry. In our oil-rich land, getting hired is our absolute right" source: Jamaran News Agency.

The practice of "fathers replaced by sons" (see Chapter Five), inherited from British

colonialism, persists in the National Iranian Oil Company. This policy restricts opportunities for those already excluded from the oil industry labor market, such as Arab people and women. Moreover, the absence of training programs contributes to what Cindi Katz (1994) has termed the "de-skilling of young people," leaving them without the necessary knowledge and skills for success in adulthood. Despite the potential for local individuals to contribute to the workforce of the oil industry, there is a significant shortage of job training programs and educational resources. For example, in Darkhovein, a town situated amidst oil extraction infrastructure, technical schools do not exist at all, and subjects like mathematics and science are not taught at the high school level (Farzi & Azkia, 2016). A study reveals that within Khuzestan, all Arab-majority towns have lower rates of human development based on criteria such as healthcare and educational facilities, literacy rates, urban infrastructures, and economic opportunities (Nazmfar & Alibakshi, 2014).

The exclusion of Arab people, which forms the essence of the oil urban development in Ahwaz, is accompanied by a significant amount of state violence. The creation of such an unequal landscape often involves structural, symbolic, and direct modalities of violence (Lesutis 2021). Dissenting voices are suppressed through threats of violence, patronage networks, and corporate compensations aimed at silencing opposition (Reed, 2009). As Reed (2009) shows in the case of Angola, communities residing in or near oil concessions bear a disproportionate share of the violence that accompanies extractive operations while reaping minimal benefits from the generated wealth.

Meytham Almahdi, a well-known Arab worker activist, recounted that he was first imprisoned at the age of 17, and without any specific accusation, he was detained several times after that. Hashem, an Arab Ahwazi journalist, shares a similar experience. He revealed that he was interrogated several times by the Iranian police without any specific reason, emphasizing that "being Arab is a crime by itself."

The story of Hashem's last name (Jam) is a telling story that illustrates accumulated deprivation and exclusion. The story is that when Hashem's grandfather came to Ahwaz in search of a job, he received advice that changing his last name to a Persian one might enhance his chances of employment. He followed the advice, and the first name that came to his notice was the prime minister at the time (Mahmoud Jam, 1935–1939). Thus, he adopted Jam as his last name, which has persisted in the family for generations.

Hashem cannot speak Arabic, even though both of his parents are Arabs. Aware of the discrimination that an Arabic accent might bring to a child, his parents chose not to speak Arabic to their children. This experience is not unique to Hashem's family, as many of the interviewees share a similar story. In Khuzestan, there are no Arabic language schools, TV channels, and rarely any Arabic cultural centers. The names of cities, neighborhoods, and streets have been changed from Arabic to Persian. For example, street names in Lashkar-Abad, an Arab-majority neighborhood at the heart of Ahwaz, are all Persian. The Arabic identity of Ahwaz is denied, and this denial led to increasing ethnic tensions in Ahwaz, e.g., the bloody urban revolt in 2006. Arab people in Ahwaz understand that their exclusion from accessing the benefits of the oil economy is tied to their identity. Preserving the

racial/ethnic and class hierarchies and inequalities that make monopoly profits possible (Woods, 2009) is a longstanding tradition of capitalist regimes.

The Arab population of Ahwaz faces systematic stigmatization, being associated with crime and perceived as a source of danger. Neighborhoods with Arab majorities are labeled as unsafe and hazardous. Hossein, 39, a resident of Zoviyeh, an Arab-majority informal settlement, shared,

Taxi drivers are often reluctant to drive me to my neighborhood, and other service workers, for example, if I need a plumber, I must make many phone calls until I find someone who accepts to come here.

As argued by McIntyre and Nast (2011), this stigmatization contributes to the creation of a segment of surplus population, referred to by Marx as a *stagnant* labor force. Often racially denigrated within the working class, they face limited employment opportunities; Layla's sons are among them. Simultaneously, their irregular employment, relative poverty, and negative perception contribute to further casting them as predatory, criminal, or dangerous (Mcintyre & Nast, 2011).

In Khuzestan, the stigmatization of Arab people underscores the intricate connection between ecology and the production of surplus lives. This stigmatization results from various forms of dispossession, directly for oil extraction or indirectly through soil and water contamination. Dispossession diminishes the value of life, creating conditions conducive to violence and oppression. Al-Mahdi outlined a process of generating *cheap labor* at the intersection of ethnicity and class, commencing with dispossession and

culminating in police violence during workers' protests:

In our society, there's this tainted discrimination against Arabs. They're labeled as dangerous killers, smugglers, and outsiders. This propaganda and anti-Arab stigma are designed to make them cheap labor. Once you've got cheap labor, they're easily expendable, like in protests and demonstrations, you can easily kill them; because, well, cheap lives are also part of the production line. You see, often our death and suppression even does not get to be reflected in Iranian mainstream media. And all of this roots back to land confiscation and dam construction [that destroyed agricultural lands]; it didn't happen overnight.

Another group that is largely excluded from benefiting through employment in the oil industry is women. As detailed in Chapter Four, this exclusion has a longstanding history and, to some extent, is a characteristic of the global oil industry. Globally and historically, the energy industry has been dominated by men. For instance, in the US, approximately 82 percent of jobs in the oil and gas industries are held by men (McKee, 2014), and in Iran, this number is roughly 92 percent (Petro-Energy Information Network, 2017). As an example, one of the largest petrochemical companies in Khuzestan and Iran had only 12 women employed in 2020, compared to 473 men (Khuzestan Petrochemical Company, 2020).

Job opportunities for women in the oil industry are available, but they often fall into two extremes in terms of pay and job security. These opportunities are either situated at the top of the pay scale, requiring degrees and experience, or concentrated at the lower end of the pay scale, offering little job security or room for advancement (McKee, 2014). In Iran, according to an official report from 2016, only 7% of women employed in the oil industry

hold managerial positions, despite 70% of them having university degrees (*Sahme Zanan*, 2016). Educated Iranian women with degrees in oil-related fields such as chemical engineering, petroleum engineering, and geology express grievances that the oil industry systematically rejects their hiring, even when they meet all the requirements (e.g., a letter from a group of female chemical engineers to the Ministry of Oil: Vaqti Jaygahi, 2020).

Many job postings in the oil industry explicitly state that the positions are only available for men, automatically disqualifying women based on their gender. Sarah, a retired Persian oil engineer in Ahwaz, mentioned that the national oil company has ceased hiring women altogether for more than a decade, even for clerical roles. Another oil worker shared that in 2019, the company they worked for, a contractor with NIOC, laid off most of the female staff, including his wife, who was a geologist. Since then, she has struggled to find a similar job.

Bahar, a young Bakhtiari woman, recalls the bitter experience of women's exclusion from the oil industry. Her husband would belittle her for her limited income, attributing it to her inability to contribute to the household economy. Sara points out the disparity in opportunities, noting,

We both had the same level of education; he got hired in the oil company, while I did not even get the chance to take the entrance exam. At any other job, the income was not even close to what my husband used to make.

She connects her husband's later abusive behavior to this exclusion.

The gender pay gap is accompanied by the deprivation of certain benefits, including those

related to early retirement, child support, housing, and healthcare coverage for their children (“Sahme Zanan az”, 2016). The implementation of neoliberal labor policies since the 1990s, aimed at reducing labor costs, has disproportionately affected oil workers and lower-ranking staff, with women being among those impacted. These policies, which involved lowering wages for workers and contract workers, also led to eliminating or limiting social reproduction support such as daycare centers, transportation, and food (Peyman, 2010). As a result, women were further marginalized and excluded from the oil industry.

Arab women in Ahwaz experience a compounded form of oppression that intersects with both gender and ethnicity. The term *intersectionality* is a proper tool to capture the experience of these women in the oil city and the political implications of that experience. In Ahwaz, in addition to economic class, the experience of the oil industry, its environmental pollution, and its possible benefits are shaped for individuals and communities at the intersection of gender and ethnicity. Shima, a 29-year-old Arab woman employed in a clothes shop in the city center, highlights the challenges she faces, emphasizing the intersectionality of her identity. She believes that the extreme heat of Ahwaz disproportionately affects women, as “we are required to wear hijab no matter how hot it is outside.” Shima recounts a personal experience of collapsing on a bus due to the heat. Additionally, she notes that she must conceal her Arab identity to secure employment, as some employers have discriminatory beliefs that hiring Arab women may lead to potential issues with their male relatives.

This dual discrimination, or, as Crenshaw (2018) calls it, *double jeopardy*, based on gender and ethnicity, adds an extra layer of complexity to the challenges faced by Arab women in the region. "Double jeopardy" is a term used to describe the compounded forms of discrimination that individuals can face when they belong to more than one oppressed or marginalized group. Crenshaw emphasizes that double jeopardy occurs because the effects of discrimination based on race and gender are not just additive but multiplicative, creating a complex form of oppression that distinct groups experience differently. Double jeopardy is best described in the case of Khuzestan by Meytham Almahdi, an Arab worker, during the interview. He said: "Living in the big city empowers Persian women, not Arab women because they have no cultural access to empowering resources."

The masculinity prevalent in the oil industry in Khuzestan also exhibits a geographic dimension tied to the intersectional oppression ingrained in oil urban development. Almahdi, drawing from his personal observations of Arab women in his community, encapsulates the situation as follows:

An Arab woman living on the outskirts of Ahwaz is portrayed as oppressed and unfortunate. This woman, when she lived in the village and with her tribe, she had no dependency on men, was independent, and had power. Because she inherited land and livestock from her father and worked alongside men. This independent woman, now in these slums, has turned into something weak and vulnerable. So, a new social structure is being produced, and something is undergoing change.

Access to the oil benefits across gender, class, and ethnicity is intricately linked to the urban political ecology of the oil city. Those with limited access are also at a heightened

risk of pollution. Women in lower-income positions are more likely to face exposure to pollution in their daily jobs. Elham, a young Arab woman working in a beauty salon, laments,

On dusty days, we still have to go to work, while the rest of the city stays at home. If I don't go, I will miss the day wage, plus I will have to pay the fine. I told them that I had a severe allergy, but it didn't matter to them.

In the slum areas, predominantly inhabited by the Arab population, the weather is hotter, and the dust is thicker, yet people cannot afford to take a day off.



Figure 41 An alley in the 400-Dastgah neighborhood, the flow of sludge in the middle is observable.
Source: Mehr News Agency, 2017

The exclusion of communities and individuals based on their identity from accessing the benefits of oil, through employment restrictions and disruption of their livelihoods

contributes significantly to the urban structure characterized by slums and informal settlements. Slum areas, coupled with villages whose residents are on the brink of becoming new slum dwellers in Ahwaz due to dispossession and contamination, serve as a source of surplus population. The existence of this surplus population is essential to maintaining cheap and precarious labor. This underscores how the extraction of oil for global commodity markets is intricately tied to the destruction of local lives (Lesutis, 2021).

Conclusion

In this chapter, relying on 35 interviews with Ahwaz residents and incorporating existing studies, news, and data, I aimed to explain the enabling and disabling socio-environmental conditions—material and discursive, as well as economic and cultural—in the oil city and their spatial implications.

I employed the theory of access to demonstrate how environmental injustice in the oil city manifests across and intersects with gender and ethnicity. To understand internal colonialism in geographic terms, I utilized the concept of a "sacrifice zone," which refers to regions that have been severely environmentally degraded because economic or national benefits are deemed more significant than the well-being of the local, i.e., indigenous populations and residents.

In Ahwaz, the oil city that has inherited the colonial and hierarchical structure of early Khuzestan's oil cities, residents in company towns enjoy more favorable conditions with cooler temperatures, cleaner air, and a lesser likelihood of disruptions to their livelihoods

from environmental issues. In contrast, those residing in slums bear the brunt of environmental harm due to the lack of urban infrastructure, compounded by their socio-economic characteristics and political powerlessness. Water contamination poses a more significant threat to them and their children, given their limited access to mitigation tools such as water purification, which many households cannot afford. The combination of hot weather and dust pollution exacerbates health issues, particularly given the nature of their work, often involving manual labor, and the challenges they face in taking time off. Industrial pollution more readily affects these slum areas due to their proximity to the oil industry's infrastructure.

The lives of individuals residing in close proximity to oil infrastructures and those impacted by its ecological degradation are intricately entwined with the operational dynamics of the oil industry. In the context of Ahwaz, I have argued that marginalization within the oil city is delineated by the ability of individuals to access the benefits derived from oil wealth. This access is intricately linked to factors such as class, ethnicity, and gender identity.

Beyond the factors of access to natural resources delineated by Ribot & Peluso (2003), the concept of access in the context of Ahwaz encompasses a geographic dimension due to the material characteristics of oil itself. The geography of life and work plays a pivotal role in determining the extent to which individuals and communities can access the benefits derived from natural resources. For those whose land and residences are situated in close proximity to oil fields and related infrastructures, the territorial appropriation intrinsic to the oil industry defines their living conditions. This often involves experiences of

dispossession, industrial pollution, and disruptions to livelihoods.

At the same time, these geographies are where the new slum dwellers of Ahwaz come from and, thus, contribute to the shaping of the urban structure of Ahwaz. This structure is indispensable to the functioning of the oil industry in the global economy, as the oil industry is contingent on the detriment of local lives. This necessity arises from the territorial requirements of the oil industry, relying on nature to generate profits, and it is intertwined with national and global capitalist labor policies necessary for producing precarious lives and a surplus of stagnant labor.

The social representation of individuals and communities residing in proximity to oil infrastructure in Ahwaz is negatively affected by the socio-ecological dynamics associated with the oil industry. Despite being geographically close to these operations, these communities are often excluded from the economic benefits that the oil industry can provide, including employment opportunities and prosperity. These populations experience health-related challenges that limit their ability to self-development, and their children have above-average school dropouts that limit their generational social reproduction. Finally, their safety and bodily integrity are jeopardized not only by state-enacted violence but also by an increased incidence of criminal activities within their neighborhoods.

Chapter Seven: Conclusion: The Dynamics of Social Reproduction in Oil-Producing Regions

This dissertation examined the socio-ecological transformations the oil industry instigated in Khuzestan's oil cities from its inception to the current era in the first two decades of the 21st century. The central question guiding this investigation was how the oil industry has redefined social reproduction within oil-producing regions. Specifically, the study sought to understand the effects of the oil industry on social reproduction in three key areas: gender relations, race/ethnic relations, and daily life amidst environmental pollution caused by the oil industry. To address this broad question, three specific empirical questions were posed to facilitate a comprehensive response.

How hierarchical socio-spatial relationships are perpetuated through practices of everyday life

The exploration of how hierarchical socio-spatial relationships are sustained through everyday practices was undertaken in the third and sixth chapters, utilizing historical research and interviews with Ahwaz residents. This investigation revealed the socio-spatial hierarchies within the oil city and examined how urban ecology could influence social relations and perpetuate social hierarchies.

I found that ecological degradation and the unequal distribution of environmental harm, inherent to oil development, contribute to the formation and maintenance of new social orders—marked by racial, ethnic, and gender distinctions. Historically, in Khuzestan, these developments align with the narratives of petro-colonialism and subsequent domestic

petro-colonialism.

The demands of oil production in Khuzestan necessitated the creation of spaces that reinforced hierarchical structures. Urban infrastructures emerged as tools to maintain racial hierarchies, leading to a markedly uneven distribution of the oil industry's environmental harms, such as pollution of soil, water, and air. This environmental injustice extended to the bodily level, resulting in significant health issues among the Iranian residents of the oil cities, including malnutrition, chronic illnesses, and diseases. The discourse around sanitation and health, deeply rooted in a colonial mindset that thrived on the "othering" of the native population, was utilized to control the population's social reproduction over generations through spatial production.

The implementation of these policies aimed to embed the oil industry's exclusive power within the oil city, creating a uniform and hierarchical space where every aspect of workers' lives could be regulated, particularly through control over infrastructure like drinking water and through urban planning focused on sanitation and epidemic control.

During the research, I understood that despite the harsh living conditions in colonial oil cities, these situations are not adequately explained by the concept of "necro-politics," as suggested by some scholars researching the oil industry. While it is true that communities in oil cities were deliberately exposed to life-threatening environmental conditions on various scales, it is essential to acknowledge that workers and residents actively sought improvements in health and sanitation, advocating for measures to meet the urgent needs of their communities and emphasizing respect and dignity in their efforts. Therefore, Henri

Lefebvre's notion of "differential space," wherein residents navigate the contradictions of hegemonic and hierarchical spaces of colonial capitalism to construct their alternative spaces for survival and prosperity. For oil city residents, engaging with sanitary regulations was primarily driven by concerns over social reproduction, threatened by inadequate sanitation and food security.

These colonial logics have persisted into the present day in oil cities, where escalating ecological destruction—partly due to global oil industry politics—adversely affects the socio-economic conditions and physical and mental health of Ahwaz's residents, particularly impacting historically marginalized groups, such as Arabs and women. This ecological destruction follows the trajectory of colonial and hierarchical urban development, with its harm disproportionately affecting certain areas of the oil city, raising questions about environmental justice.

Like Abadan under British colonial rule, Ahwaz evolved into a dual city structure. On one side, "company neighborhoods" are equipped with comprehensive urban amenities and exclusive benefits. On the other side, slums exist, labeled by city authorities as "urban problems," yet they are shaped by the same underlying logic that created the company neighborhoods. Despite their stark differences, both types of spaces are products of regional and global oil development.

Today, many marginalized communities, predominantly Arab, live near oil infrastructure and suffer the most from environmental pollution. These communities and neighborhoods are essentially spaces of dispossession, where living with toxins becomes an unavoidable

part of daily existence. The oil industry's expansion has gradually blurred the lines between living spaces and oil extraction sites for those residing nearby.

These areas have become “sacrifice zones,” a term that describes locations where environmental degradation is most severe, extending to rivers, agricultural lands, marshes, and the atmosphere. Moreover, the people reliant on these resources for drinking, food production, and breathing also embody sacrifice zones. These impacts are not accidental but are central to the functioning and core operations of the oil industry.

For the slum dwellers in Ahwaz, the oil industry's infrastructure significantly influences their daily lives and health, leading to issues such as asthma, respiratory problems, skin conditions, hair loss, fertility issues, and cancer. These health concerns are direct manifestations of oil development's impact on their bodies. Feminist geographers highlight that, particularly for marginalized groups, the body itself becomes an environment, underscoring the interconnectedness of human and ecological health.

How ethnic relationships are redefined and reproduced in the oil city

Chapter Five delves into the transformation and perpetuation of ethnic relations within the oil city, with a particular focus on the Arab population in Khuzestan. This segment of the study examines the social shifts precipitated by the oil industry's emergence, such as the migration of workers to Khuzestan and the establishment of a racial hierarchy by the British oil company (APOC/AIOC), which included restrictions on employing local Arab individuals in the industry from its inception in 1908.

The research reveals that the foundational role of the oil industry as a significant socio-political entity, from which the Arab community was largely excluded, was crucial in forming the subsequent ethnic hierarchies. This initial exclusion meant that the Arab population's engagement with the oil industry was primarily indirect, through contract labor, preventing them from accessing the urban facilities available to other workers, such as housing, healthcare, and subsidized groceries, thereby marginalizing them within the oil city.

Furthermore, the study explores the emergence of the Iranian central government and the prevailing nationalism as a continuation of the colonial order, which evolved into a form of domestic colonialism that has shaped the current socio-ecological landscape of the oil city. This includes the persistence and dramatic expansion of contract labor, the maintenance of labor hierarchies, and the continuation of neighborhood segregation based on occupation, all of which disproportionately adversely affected the Arab population.

The role of oil nationalism, despite its anti-colonialist intentions, failed to achieve equality for all residents of the oil city and did not dismantle the exclusionary practices of the oil industry. This failure is attributed to the limited participation of the Arab population in these struggles due to their previous exclusion from hiring practices and the neglect of the indigenous population's needs and concerns.

The study argues that the transformation of ethnic relations in Khuzestan was intrinsically linked to environmental degradation. The oil industry has been central to creating ecological and economic vulnerabilities for the native population through pollution,

dispossession, and unequal access to resources. Environmental destruction serves as a mechanism to sustain and reproduce these unequal social relations daily.

Adopting a focus on "access" rather than "property rights" in the analysis of natural resources reflects recent trends in urban political ecology that emphasize the embodied experiences of resource distribution among diverse social groups. This approach considers the complex interplay of temporal and geographic socio-economic and political processes at local and global scales, which shape the current dynamics of access to the benefits of the oil industry in Khuzestan.

In this context, the stigmatization of Arab people in Khuzestan highlights the deep-seated connection between ecological factors and the creation of marginalized communities, underscoring the role of environmental degradation in the perpetuation of ethnic inequalities.

How gender relationships are redefined and reproduced in the oil city

In Chapter Four, the focus shifted to the intersection of gender and sexuality within the colonial discourse and how these aspects were instrumental in shaping the early development of Khuzestan's oil cities. The examination of gender politics within the colonial context was approached through three significant perspectives: the influence of gender politics on urban planning and architecture, the role of sexual relations, and the necessity for domestic service in oil cities. These perspectives offered a comprehensive understanding of gender politics' role in the colonial landscape.

The presence of European women in Khuzestan necessitated specific urban developments, as they were seen as emblematic of colonial culture and a higher standard of living distinct from that of the local populace. This necessity led to the construction of an exclusive oil town characterized by spacious residences, private gardens, and advanced urban facilities, including sewage systems, electricity, and exclusive roads, thereby solidifying the social space and unity of European communities.

The chapter also explored the complexities of sexual relations in the oil region, highlighting how the issue of sex, manifested through practices such as prostitution and concubinage, introduced tensions within oil cities. These practices often reinforced racial and gender lines, making the bodies of women sites of contention between the colonial power and resistance. This underscores the critical role of gender relations in the urbanization of oil production, with conflicts along these lines highlighting the complexity of sexual relations in a semi-colonial context.

Furthermore, my investigation into domestic work revealed its significance in shaping the oil city, driven by the demands of the colonial lifestyle in Khuzestan. The reliance on domestic servants, underscored by the emphasis on white prestige in gender politics, allowed for the maintenance of low salaries for Indian and Iranian staff by leveraging the cheap labor of women. These services, which included cooking, cleaning, dressmaking, and laundry, were crucial for the functioning of the colonial household and the broader economy.

Finally, through this study, I understood that despite their substantial exclusion from the

formal workforce of the oil industry, women's contributions to the oil city's economy were significant. Their involvement, primarily in the informal sector, played a pivotal role in shaping alternative urban spaces, underscoring their essential role in the community, the city, and the global circulation of oil.

In chapter six, I touched upon the intersection of gender and ethnicity in Ahwaz, drawn from interviews, and explored Arab women's distanced experience of the oil industry and its environmental pollution through what Crenshaw (1994) calls the *double jeopardy*. This chapter highlights the nuanced ways in which gender within the colonial discourse contributed to the development of Khuzestan's oil cities during the initial phases of oil industry growth.

Contribution

At the scholarly level, this dissertation contributes to the burgeoning discourse within urban political ecology concerning social reproduction. This contribution is achieved by adopting a nuanced and multi-scalar approach synthesizing petro-colonialism and domestic colonialism theories. It posits that a fusion of petro-colonialism and racial capitalism theories, in conjunction with urban political ecology and social reproduction theories, provides a suitable framework for comprehending the intricate spatial disparities instigated by the oil industry. This framework has the potential to illuminate the reasons why certain regions and populations are more vulnerable to exploitation, dispossession, and ecological deterioration than others. Within this paradigm, the focus of analysis lies in the oil industry's dependence on territorial appropriation and ecological devastation.

Moreover, this dissertation advances the understanding of social reproduction and its interplay with the built environment. This research contributes to the burgeoning literature on embodied urban political ecology by bridging the realms of urban political ecology and social reproduction. It explores the layers of historical ecology, social relationships, and everyday life, thereby elucidating their contemporary manifestations within this oil-rich region. Through an exploration of the legacy of colonialist oil development on the present-day built environment, this study illuminates how such historical processes continue to shape social reproduction among residents. Moreover, this study provides a case of the ways in which UPE scholarship can transcend the limitation of “cityism” by embracing a multi-scalar approach.

The broader implications of this research are manifold. Firstly, it stands to furnish novel insights for urban planners and policymakers, enabling them to make more informed decisions in the planning of oil cities by considering the entanglement of socio-economic and natural factors. Secondly, this research offers a historical account of the socio-natural evolution of Khuzestan and Ahwaz, which has been limited, thereby proving invaluable for historians and those interested in understanding urban processes through historical narratives.

Future research

Numerous opportunities exist for further exploration within this field of inquiry. Significant gaps remain in the study of the urban political ecology of Iranian oil development and its interconnections with the global oil system. For instance, future

investigations may delve into the intricacies of land governance and the attendant power dynamics inherent in oil development processes. A fruitful avenue for research lies in examining the historical trajectory of communal land systems that underwent enclosure as a result of oil treaties with local authorities in Khuzestan. Presently, the National Oil Company exerts considerable influence over land ownership in Ahwaz, significantly impacting the city's socio-ecological and economic fabric.

Moreover, comparative studies across temporal and geographical contexts present promising avenues for inquiry. One such avenue involves a socio-ecological juxtaposition between the colonial-era Abadan of the early 20th century and contemporary oil-driven urbanization in Iran, such as the case of Assaluyeh Site on the southern coast. This analysis could shed light on parallels between foreign and domestic colonial logic in shaping urban ecologies and the social reproduction of indigenous populations.

Additionally, a critical comparative examination between oil cities in the global north and south, such as Ahwaz in Khuzestan and Bakersfield, CA, offers another avenue for exploration. By employing a theoretical framework of 'critical comparative analysis,' scholars can analyze urban ecologies of oil cities and elucidate how they organize social reproduction across disparate contexts while sharing a common experience within the global oil complex. This approach promises to offer innovative insights into the ways in which cities have experienced petroleum-based development and how such development has influenced modes of social reproduction. Ultimately, this research endeavor aims to delineate the geographical connections inherent in oil production processes.

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New York Times (English)

Appendix A: Interview Guidelines

I used the following questions as guidance for my interviews. I asked more relevant and follow-up questions throughout the interview.

1. *Family history*: When and why did you or your family move to Ahwaz? What did your parents use to do for a living? (Participants were encouraged to provide more details if their stories are related to the oil industry, environmental issues, ethnic tensions, property dispossessions, and other topics that are closely related to research questions.

2. *Neighbourhoods*: Describe your current neighborhood and the neighborhoods you have lived in in the past. What do you like or dislike about it? (e.g., social life, environmental issues, urban facilities, etc.), Is there any industrial setting near your neighborhood?

3. *Livelihood*: What do you do for a living? Have you ever been employed or tried to be employed by the oil companies? Why weren't you successful? How do you feel about getting hired by oil companies?

4. *Affections*: What do you like about living in Ahwaz? Are you optimistic about your future in Ahwaz? Would you move to other cities if you got the chance?

5. *Ethnic and gender identity*: How do you identify ethnically? How do you feel about the oil industry and the ways it affected your life, whether in your personal life or as an oil worker/employee? Do you believe other people benefitted or harmed more than you from the oil industry?

6. *Environment*: To your knowledge, what are the worst examples of environmental pollution in this city, if any? And how did that affect your life? (Everyday life affairs,

income, health, etc.) How do you describe the current situation of environmental pollution compared to the past? Are they improving or worsening?

7. Is there anything you would like to add about your (and your family's) daily life and your subsistence that you think can be related to the oil industry?

Appendix B: Coding Examples

Coding examples of interview analysis

Text	Code	Comment
In terms of air, it gets worse year by year. When we were younger, the temperature wasn't that high, and it wasn't as polluted to this extent.	despair	sense of danger, harm, and loss. others are better off. The observation that things are getting worse.
There is pollution. We feel it a lot of the time. It's like breathing in smoggy air. But this hasn't stopped us from living, like dust did. People in Khuzestan cancel their activities during certain times of the year due to dust storms. When I used to go play football, I felt like I was having a stroke. Even the doctor would ask me why I was playing.	Dust/ environmental issues	Environmental issues frequently interrupt people's daily activities.
The way is much easier for non-Arabs. My grandfather realized that his last name, "Al-Kathir," was causing him to not be employed. They said he was Arab. We also had a family member who was executed. He went to the registration office and changed his family name. He said, "Give me a Persian name." Myself had a lot of trouble. When I started my career as a journalist, even though I was very young, the Ministry of Intelligence summoned me, but not my Persian colleagues. Why? What difference does it make who I am?	Ethnicity	The code applies if a participant relates their happiness or misery to their ethnicity or the researcher makes such a connection.
I was heavily judged when my spouse and I separated, with people asking why I had such a low salary. I replied, "Do you think you've worked hard for the job you have? [in the oil company] and I haven't worked as hard as you? If there is a difference in salary between us, it's not because of any lack of potential on my part." A test was held for the oil company last year, with thousands of job openings, but they were only hiring men. Even though I had the potential to be hired. My husband later said that I wasn't capable	Women condition	The code applies if a participant mentions that their gender contributes to the benefits they receive by living in the oil city regarding their livelihood, sense of justice, freedom, and discrimination.

