



## Colonial Management of Iranian Kurdistan; with Emphasis on Water Resources

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### Abstract

*Iranian Kurdistan (a region referred to by the Kurds as Rojhelat/East Kurdistan), which possesses a large variety of minerals, oil reserves, dense forests, and massive surface and underground water resources, has for decades supplied the economic, agricultural, and industrial sectors in Iran, mainly benefiting the development of the central parts of the country and bringing significant income to the state. This has occurred while the Kurdish region remains among the most economically underdeveloped and deprived areas of Iran. The Iranian state's economic and developmental approach to Kurdistan's natural resources, and the mechanisms of extractions and exploitation of these resources, have resulted in extensive environmental degradation, affecting the public health in the Kurdish region, and not least de-development and further underdevelopment in this region. Taking into account the extent of extraction and use of Kurdistan's natural resources reveals the Kurdish-state relation as an internal core-peripheral relationship, resulting in the centre's destruction of the natural environment and exploitation of the natural resources of the periphery. This paper sheds light on the Iranian state's economic and developmental activities, with a focus on water resources in the Kurdish region and the consequences of their use on the natural environment.*

**Keywords:** Water Resources, Development, Resources, Internal colonialism, Iranian Kurdistan



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The Kurdish region in Iran is among the most securitized, economically-deprived and underdeveloped regions of the country. This is in spite of the fact of this region being in possession of a large variety of mineral/underground resources, dense forests and massive surface and underground water resources (Soleimani and Mohammadpour 2019; Farangis 2020; Hassaniyan 2020, 2021). An example of this contradiction is that despite possessing massive water resources, drought and water scarcity are serious challenges facing the region's population. In addition to problems such as drought and economic disadvantage and de-development,<sup>1</sup> the irregular and unconsidered extraction of minerals such as gold and aluminium has resulted in various environmental and health issues among the Kurdish people (Farangis 2020). Resultingly, many Kurds criticise the Iranian state's economic and development policies in Kurdistan for being unsustainable, discriminatory and colonialist (Soleimani and Mohammadpour 2019; Hassaniyan 2021). Scholars of Kurdish studies refer to the Kurdish region as an internal colony of the Iranian state, where the Kurdish people and their natural resources are subject to state exploitation and destruction (Beşikçi 2004; Soleimani and Mohammadpour 2019; Erdelan 2019; Sohrabi 2019a; Hassaniyan 2019, 2020, 2021). For instance, Erdelan (2019) claims that since the last century, a condition of "absolute colonisation" has been imposed on the Kurdish people, suffering from multiple forms of suppression and exploitation due to the long-term colonisation of their land. The socioeconomic and political condition of the Kurds reveals that this people suffer from a combination of national, class, racial, environmental and developmental discrimination and injustice.

In the words of Soleimani and Mohammadpour (2019), the Islamic Republic of Iran's "treatment of Kurds has undoubtedly been a colonial one" (Soleimani and Mohammadpour 2019: 5). They argue that the Iranian state's colonial approach to the Kurdistan region has destroyed the economic foundation of livelihoods of the people of this region where, for instance,

the local economy of Kurdistan—which was mainly centred around agriculture and raising livestock—was devastated during the Iran-Iraq War. Under the pretext of removing the enemies of the revolution's safety net, the state banned Kurdish farmers' access to the mountains, turning major agricultural and pastoral areas into minefields. (Soleimani and Mohammadpour 2019: 5)

Elling claims that "Iranian Kurdistan has been administered from military bases and through martial law, and economic investment has often focused on military infrastructure...these circumstances further cemented a feeling of being under occupation among [Kurds]" (Elling 2013: 1). The Kurdish-state relationship in Iran and the extent of state's exploitation of the natural

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<sup>1</sup> According to Roy de-development is perhaps best understood when compared to underdevelopment. In which both processes describe a structural relationship between a stronger (dominant) and weaker (subordinate) economy. Though, while most definitions of underdevelopment allow for structural change and reform within the weaker economy, de-development not only distorts the development process but undermines it entirely. The first category of de-development relates to expropriation, dispossessed of key economic resources critical to the formation of productive capacity. Nevertheless, Roy (1999) claims that the de-development of an economy does not mean that individual production cannot be increased or individual living standards improved.

resources of Kurdistan give reason to characterise this condition as “eco-colonialism.” According to Crowe and Shryer (1995), in a system of eco-colonialism, without significant economic returns for the indigenous population, the ecosystem is overwhelmed by mining and other commercial interests and activities. These activities happen without consideration of the damage they inflict on wildlife and the sustainability of the subjected society. Another hallmark of an eco-colonial relationship is the existence of sharp difference between the centre’s and periphery’s approaches to wildlife and socioeconomic sustainability.

This condition has resulted in the emergence of a unique form of Kurdish ecological and environmental opposition to the state in Iran, conceptualised by Hassaniyan (2021) as the “environmentalism of the subalterns,” on the one hand opposing destructive state’s so-called developmental activities, and on the other hand contributing to the emerging counter-hegemonic discourse on development, security, identity and citizenship in Iran, within the country’s peripheral and disadvantaged people and communities such as the Kurds, Arab, Azeri, Baluchi, and so on. Egan (2002) equates subaltern environmentalism with a struggle for achieving environmental justice; arguing that by subaltern,

I mean to draw on a body of literature that explores the adoption of grassroots environmental activism by marginalised or subordinated groups such as peasants, urban slum and ghetto dwellers, farm workers, and groups oppressed by race, class, and gender. (Egan 2002: 22)

When a group of people is faced with both social and environmental subordination, they are the victims of environmental injustice. Nevertheless, environmentalism in Iran, especially among the country’s peripheral populations, and non-Persian regions as Kurdistan<sup>2</sup> and Khuzestan, is a growing trend. Over the last two decades, in peripheral regions and provinces such as Kurdistan and Khuzestan, dozens of environmental NGOs have been established, claiming environmental justice and fair and inclusive socio-political, economic, and cultural treatment.

In the Kurdistan region in Iran (Rojhelat/East Kurdistan), the focus of this research, every Kurdish city has established its own environmental community. While campaigning for the preservation and protection of the natural environment are at the heart of the activity of environmental NGOs in Kurdistan, denouncing and challenging the state’s environmental and developmental policies in the Kurdish region is another aspect of Kurdish environmentalism. The environmentalism, and the environmental and ecological struggle in Iranian Kurdistan can be classified within conceptual frameworks of “environmental justice” and “eco-Natioanlism” (Bullard 1993; Dawson 2000; Jamieson 2007; Reed 2009). But also borrowing from Dawson (2000) this movement has become a platform for Kurdish eco-nationalism, cherishing of Kurdish national identity and culture. In the Islamic Republic of Iran, an authoritarian regime where many

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<sup>2</sup> Iranian Kurdistan (Rojhelat/Eastern Kurdistan) is composed of the Kermashan, Kurdistan, Lurestan, Ilam and Western Azerbaijan provinces. In Western Azerbaijan, cities as Urmia and Naqhadah have a mixed ethnic composition, consisting mainly of Kurds and Azeri/Turks. Iranian Kurdistan (Rojhelat) as discussed in this paper refers to all these provinces.

aspects of civil society have been securitised, Kurdish environmental groups have been highly targeted by the regime's security and judicial systems (Soleimani and Mohammadpour 2019; Hassaniyan 2020, 2021).

This growth in environmentalism in Rojhelat can be explained through the context of the immense degradation of the region's natural environment and the state's exploitation of the land and natural resources. Some elements of this degradation are evidently observable through observing the extent of pollution, drought, deforestation, the damage to biodiversity, soil erosion, and so on (Rasouli 2020). To some extent, the root causes of this multifaceted degradation of Kurdistan's natural environment can be found in global climate change. However, diverse human activities seem to be the *main* factors in this regard. In fact, environmental documents and scientific research relevant to the challenges facing Kurdistan's natural environment suggest a combination of a controversial state-centric approach to development, and the government's mismanagement of environmental issues and catastrophes as among the main factors behind the wide-ranging degradation of the natural environment of Kurdistan. Through recent decades, Kurdistan's natural environment has been subject to massive degradation, and Kurdistan's natural resources—which should have been the source of wealth and prosperity of the region's population—have been comprehensively exploited by different state institutions, among them the Islamic Revolutionary Guard Corps (IRGC) and its sub-organisations and contractors. The intertwined issues of environmental degradation and resource exploitation, resulting from the government's economic and development policies, are some of the issues faced by the Kurds in Iran. This study attempts to shed light specifically on changing Iranian governments' approaches to the water resources of Rojhelat. This choice has been made due to the fact that currently, as result of the government's unsustainable development and environmental policy, drought, soil erosion and deforestation are among the issues facing the Kurdistan and its human and natural environments. The exploitation of natural resources by repressive states for their economic values is not limited to Iran. The Turkish state's Southeastern Anatolia Project (GAP), a multi-dam project that so far has included construction of 22 dams in Kurdistan is another form of exploitation of Kurdistan's natural resources, with huge degrading and adverse impact on the landscape, culture, and not least environmental and biodiversity in the Kurdish region (Conde 2016; Bilgen 2018). Nevertheless, such an approach can also be identified on a global scale. For instance, as stated by Gurses, in Indonesia “the Indonesian military under Suharto (1966–1998) played a significant role in the exploitation of forest resources as a part of the ‘regime’s plan for economic development and the extension of its political control across the nation” (Gurses 2012: 226).

### **Research Method and Conceptual Framework**

This study employs content analysis as a research method. Content analysis seeks to analyse data within a specific context in view of the meanings someone attributes to them. These data constitute “texts, images, and expressions that are created to be seen, read, interpreted, and acted on for their meanings, and must therefore be analyzed with such uses in mind” (Krippendorff 2004: xiii).

According to Krippendorff, content analysis is a research technique for making “replicable and valid inferences from texts (or other meaningful matter) to the contexts of their use” (Krippendorff 2005: 18). This method allows a rhetorical analysis and the drawing of conclusions about the communicator, the message or text, the situation surrounding its creation, and (sometimes) the sociocultural context of the communication. A key factor in this regard is that the data communicate a message from a sender to a receiver. Through this process, the analysts are required to consider the seven criteria of cohesion, coherence, intentionality, acceptability, informativity, situationality, and intertextuality, as the measures for defining a text (White and Marsh 2006).

In this study, the Kurdish-state relationship in Iran has been framed as a colonised-coloniser relationship, from which springs the exploitation of Kurdistan’s natural resources. Colonization has in this case taken place internally, where the sovereign and the dominated communities are both populations of the same territorial entity, Iran. This relationship can also be conceptualised as a core-peripheral relation, resulting in subjugation, de-development and exploitation of a peripheral population by the core. Even though the theory of core and periphery is often used to discuss international relations, in explaining an asymmetrical relationship between different communities within a given nation-state, this approach is also applicable (Smith and Steel 1995). Framing the core-peripheral relation as a matter of internal colonialism, Adeola (2009) argues that the internally colonized region will not benefit significantly from its own resource endowment, but also suffer from economic and environmental degradation resulting from the extraction of these natural resources. Furthermore, similar relations result in the long run in the emergence and escalation of conflict, violence and human and ecological insecurity (Adeola 2009). A disputed and conflicting approach to development and environmental sustainability in the core-peripheral relationship will leave the peripheral population deprived through environmental injustice. As emphasised by Bullard “Historically, colonies have existed for the sole purpose of enriching, in one form or another, the ‘colonizer’; the consequence is to maintain the economic dependency of the ‘colonized’” (Bullard 1993: 16–17).

Exclusion from the decision-making process on an issue “that affects their [the peripheral population’s] health, environment, and quality of life, such as economic growth and development of communities” (Johnson 2009: 20), has been a major issue generating discontent and conflict in core-peripheral relations. According to the theory of internal colonialism,

national development is conditioned, in part, by strengthening or consolidating the initial spatially unequal distributions of power and privilege thereby creating politically dominant society core and its peripheral ‘colony.’ The elites of the core institutions maintain their power and privilege by incorporating peripheral regions into national economy and polity. (Adeola 2009: 152)

As emphasised by Banerjee (2011), internal colonialism replicates older patterns of imperialism as can be seen in the dominance of neoliberal policies in today’s global political economy. Gonzalez-Casanova (1952) assumes that internal colonialism can be understood as a system of domination and exploitation of natives by natives. Blauner (1969) has, in his study of the

asymmetrical Black/white relations in the United States where the Black population were the subject of white political, economic, and cultural discrimination, deployed the term “domestic colonialism.” Carmichael and Hamilton’s (1967) book *Black Power: The Politics of Liberation* is among the first and pioneering sources to explore the “internal” colonial model as a way to explain the racial inequality, political exploitation, and social isolation of African Americans. Assumed by Carmichael and Hamilton, “the economic relationship of America’s black communities [to white society] reflects their colonial status. The political power exercised over those communities goes hand in glove with the economic deprivation experienced by the black citizens” (Carmichael and Hamilton 1967: 16). Nevertheless, colonialism has always hidden its plunder under the guise of development, and throughout the history of colonialism and imperialism “colonial powers and transnational corporations alike have exploited natural resources for their own profit and power with little regard for the social, political, and environmental impacts on local groups and communities” (Alston and Brown 1993: 179). As emphasized by Horvath (cited in Ziltener and Kunzler 2013), colonialism is a form of temporally extended domination by people over other people and as such part of the historical universe of forms of intergroup domination, subjugation, oppression, and exploitation. Although colonialism—hereafter internal-colonialism—can be exercised as a multilayer dimension, including the political denial of the right to self-determination, to economic exploitation of the workforce, natural resources, and cultural heritage, this paper’s focus is the Islamic Republic of Iran’s extensive and systematic economic exploitation of Kurdistan’s natural resources, water in particular.

Since the early 1960s, the concept of internal colonialism has frequently been used in reference to Latin America, as well as in the works of scholars concerned with the plight of racial minorities in the United States. The concept has been utilized for different historical backgrounds and with various connotations. An internal colony is a colony that exists inside the boundaries of the state which colonized it, dismissing the salt water thesis, which holds that colonies can only exist overseas. Perhaps the best-known use of the concept by political actors comes from the Civil Rights struggle in the United States. In a 1964 speech entitled “The Black Revolution,” Malcolm X argued that “America is a colonial power. She has colonized 22 million Afro-Americans by depriving us of first-class citizenship, by depriving us of civil rights, actually by depriving us of human rights” (Malcolm X cited in Hicks 2004: 1–2).

In their study of the Kurdish-state relation under the rule of Iran’s Islamic regime, Soleimani and Mohammadpour argue that “as a concept, internal colonialism describes how political, cultural and economic inequalities exist between the center and various regions within a given state. These inequalities are often structured along ethno-linguistic, racial and religious cleavages” (Soleimani and Mohammadpour 2019: 927). Within the scholarship on Kurds, Turkish sociologist Ismail Beşikçi (2004) was the first, after the 1965 work by the Kurdish leader and political activist Abdul Rahman Ghassemlou, to refer to Kurdistan as an “internal colony” split between four countries. Beşikçi’s description of the state-Kurdish relation in Turkey, Iran, Iraq, and Syria is the best testimony of the present of an internally colonized condition imposed on the Kurds and their occupied homeland Kurdistan. According to Beşikçi the way the Iranian, Turkish, Iraqi, and Syrian

states have treated the Kurds have left the Kurdish people in a disadvantaged position. This has meant that:

Kurdistan is neither a full nor a semi-colony. The political status of the Kurdish nation is far less than the status of a colony...there is no doubt that, like most colonized regions, Kurdistan's stores of raw materials, its vast natural wealth in petroleum, copper, coal and phosphate, soil, forests, and water are exploited and marketed for industry. (Beşikçi 2004: 19)

In Iran (as in Turkey, Iraq and Syria) the Kurds are “a nation within a nation,” a phrase used by Martin Delany, a Black American activist, in 1852. Delany's argument was that the Black community was politically, economically, and militarily subjugated to white America, much as colonies in Africa or Asia were colonially subjugated to the direct control of European powers. Colonies need not be external, they could also be internal, like Native American reservations and the urban ghettos inhabited by African-Americans, Latinos, and Asian-Americans (Delany in Allen 2005). Nonetheless, Pinderhughes (2011) defines internal colonialism as:

a geographically-based pattern of subordination of a differentiated population, located within the dominant power or country. This subordination by a dominant power has the outcome of systematic group inequality expressed in the policies and practices of a variety of societal institutions, including systems of education, public safety (police, courts and prisons), health, employment, cultural production, and finance. This definition includes the subordinated population—the colonized—and the land on which they reside within a former settler colony or settler colony system. (Pinderhughes 2011: 236)

### **The Significance of this Study**

This study has benefited from research, studies, and non-academic sources such as magazines and statements issued by environmental organisations and individuals on environmental problems and issues related with underdevelopment and the Iranian state's policies in Rojhelat. Taking into account the extent of the Iranian state's exploitation of the natural resources and its destructive and unsustainable approach to the environment and natural resources in the Kurdistan region, this paper provides a relatively restricted view on this issue. However, considering the limited number of studies on this area, and its conceptualisation within the framework of theories of internal colonialism, this paper is among the first studies that gives its full attention to the relation between the Iranian state and its peripheral regions. This paper argues that an elitist approach to development poses an immense threat to the future sustainability of water, natural and environmental resources, and not least the emergence of conflict and a process of de-development within the effected community. The paper engages with an important question intersecting internal-colonialism and how it exploits natural resources, water in particular. This paper presents evidence for this issue through the colonial relations established by the Islamic Republic of Iran over Rojhelat. In addition it contributes to a further understanding of a matter not only relevant to Kurdistan but also to an overall understanding of how the state-led exploitation and colonial

management of natural resources shape political dynamics. As in the following will be elaborated further, the paper through the study of Kurdish-state relations in Iran, and how the Islamic Republic of Iran is exploiting the natural resources of Kurdistan, provides evidence for the applicability of the theoretical frameworks and conceptualisation provided by scholars of colonial and internal-colonial studies, even though most of these theories have been developed to explain European colonial (and imperialist) behaviors in Africa, Latin America, Middle East, and India.

### **The Fight for Environment and Development in Colonized Kurdistan**

The twentieth century's exploitation of Kurdistan's natural resources and destruction of its natural environment intensified when the four colonialist states Turkey, Iran, Iraq, and Syria "started to plan large energy, mining, agriculture, infrastructure and other investment projects whose implementation led to exceedingly grave ecological destruction and exploitation" (Ayboğa 2018: 3). As held by Weidmann (2009), the territory has an objective value because of the valuable resources located there, the territory has a strategic value because control over it brings a military advantage and territory has a subjective value because it is part of a state's culture and identity. Applying the above-mentioned criteria to the Kurdish case help explaining the reasons for why Kurdistan became an internal colony of Turkey, Iran, Iraq, and Syria. Kurdistan has because of its historically sensitive geopolitical location (as a buffer zone between the Ottoman and Safavid dynasties) and due to it possessing a large variety of natural resources, minerals and sanctuaries, including massive surface water resources, attracted its occupiers' attention, where plundering the natural resources has been a major practice of the colonizing forces.

The political geography of Kurdistan has many characteristics of the center-periphery, whereby the centre has systematically considered how to control and alter the nature of the periphery, and extract and exploit its natural resources for its benefit. The location of Kurdistan has turned it into a center of the regional competition between Turkey, Iran, Iraq, and Syria. Ciment (1996) identifies the current condition of Kurdistan as a product of imperialist, colonial, dictatorial, and theocratic regimes' attempt to subjugate the Kurds for such strategic purposes as access to economic resources and creating a hegemonic national identity. While the poor socioeconomic condition of Kurdistan has been neglected, its geopolitical location has turned into a factor of security concern by states surrounding the Kurds. This geopolitical location of Kurdistan revealed even more significance when the "Kurds played an important role in defining and propagating both state nationalism and the nationalism of other groups" (O'Shea 2004: 19–20) in the different states controlling the Kurdish population. According to O'Shea Kurdistan became the "main theatre for Ottoman-Persian rivalry and a buffer zone" (O'Shea 2004: 71–72), which demarcated the border between the two major branches of Islam (Sunnism represented by the Ottomans, and Shiism by the Safavids). This historical review proves that the status of Kurdistan as an internal colony is not a newly occurred situation, but a condition that ensued in the sixteenth century when Kurdistan turned into a buffer zone of the two competing Ottoman and Safavid Powers, and with some changes, remains until the current day, though Kurds are suffering from immensely.



Deforestation due to wildfires and uncontrolled timber cutting, irregular dam construction, and disproportionate trans-Iranian (inter-basin) water transportation are among the examples of human activities endangering the natural habitat of Kurdistan in an era in which climate change has been highlighted as a serious problem challenging ecosystems and the security of global society. For instance, in recent decades, clear cutting and irregular agriculture activities and cultivation of land have reduced the quality and quantity of the Zagros forests.<sup>3</sup> Over three decades (1987–2015), a large extent of the natural environment and the dense forests of the Kurdistan region have experienced drastic degradation. Two main groups of actors, on the one side the Iranian state and its institutions, and on the other Kurdish society and its environmental groups or NGOs, are involved in a conflict over the natural resources and natural environments of Kurdistan (Soleimani and Mohammadpour 2019; Hassaniyan 2020; 2021). To an extent, this has furthered the historic nation state-Kurdish conflict in Iran. As emphasised by Wood (1993), such an escalation of conflict happens because “the link between natural resource management and conflict is strong. Shortages of natural resources lead to competition which may result in conflict” (Wood 1993: 83). The presence of an internally colonised-coloniser relationship between the Kurds and the sovereign is revealed in the two contrasting approaches to security, wealth, sustainability and development (Jaafar et al. 2020). The Iranian government’s implementation of developmental projects impacting on the environment of Kurdistan, has been the subject of Kurdish environmentalists’ criticisms and denunciations. Pointing to specific activities of the state (e.g., dam construction, water transportation, river diversion, construction of oil refineries, etc.), Kurdish environmentalists argue that on the one hand these activities leave destructive effects on the ecosystems and natural resources of Kurdistan, and on the other uncompensated and irregular extraction of these resources leads to unsustainable development and the furthering of economic de-development and insecurity in a region already suffering from economic underdevelopment.

In addition to the abovementioned activities, the food production and agricultural activities of the state are heavily criticised by Kurdish environmental activists and NGOs for their unsustainability. According to environmental activists, the damage done by the Iranian government’s food and agricultural policies has been comprehensive, to an extent that it has resulted in desertification, for instance around Kamyaran, Hewetoo/Obatoo (a once fertile area between Saqqez and Sanandaj) and, worst of all, the area surrounding Lake Zrebar, located in Mariwan (Rasouli 2020). Mismanagement and neglect of environmental problems related to water shortage and overconsumption has meant that, according to the Kurdish environmentalist organisation Chya (2015), “even the shortage of drinking water has not resulted in [the government’s] taking preventative measures. However, the continuing destructive approach to agriculture has meant that recently land surrounding Lake Zrebar has been devoted to rice cultivation” (Chya 2015: 4). The challenging conditions facing the natural environment of Kurdistan has meant that Kurdish environmental scientists and activists challenge the ruling elite’s

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<sup>3</sup> The Zagros forests, with an area of about six million hectares (3.5 percent of Iran), are located in western Iran. Due to the dominance of a species of oak trees, these forests have also been called western oak forests.

approach to development and demand the rethinking of this approach. In the words of Kamal Koneposhi,

There is a need for reinventing what the term development is about. In fact the country's national security is challenged by serious internal threats, products of the elite's understanding of development and their ambition in the construction of massive dams, the mismanagement of natural resources and their insistence on the destructive policy of food self-sufficiency. (Koneposhi, cited in Chya 2015: 6)

As proven in Pulido's study of *Sustainable Development at Ganados del Valle*, "most environmental problems result from economic activities" (Pulido 1993: 123). While growth and development are sources of both wealth and destruction, the Iranian state's development policy has (re)produced chronic environmental and communal destruction. For instance, borrowing from Hamilton's (1993) terminologies, the Kurdish-state relationships, in this context can be articulated in several ways, including (internal)colonialism, imperialism, and institutional racism. While for the government sustainable development is tantamount to its ability to supply agricultural and industrial activities in the core with resources such as water, oil, timber, and such transferred from fertile peripheral regions, for Kurdish environmentalists and their society, sustainability means an equal share of and access to power and wealth. The state-centric approach to development in Iran is shown in the so-called development activities of the state, such as the trans-Iranian (inter-basin) water transportation projects. As the central parts of Iran are suffering from drought and water shortage, the government, concerned with maintaining economic activity in the centre, has been transferring water mainly from Kurdistan to these regions (Chya 2017: 4). However, Kurdish environmentalists argue that, as this water transportation and the exploitation of other natural resources in Kurdistan such as timber has been continuing for years, this has resulted in environmental destruction in the region (Financial Tribune 2019). Kurdish environmentalists consider development and the natural environment as interdependent, and argue that disregarding environmental well-being will ultimately hinder sustainable development, but also contribute to de-development in Kurdistan. Criticising the Iranian elite's approach, Kurdish environmentalists claim that the state's developmental policy in Kurdistan and other peripheral regions of the country should be in accordance with local knowledge and potential. In the words of Setodeh,

In fact, decision-making related to developmental project in this region [Kurdistan] should consider the regional potential [risks and possibility]. For instance, this region needs investment in manufactories dealing with food/fruit conservation, as the region is rich in fruits such as grapes and pomegranates, and not polluting manufacture and industries such as cement works or oil refineries (Setodeh, cited in Chya 2016: 3).

### **The Iranian State's Water Policy**

Iran has historically relied largely upon groundwater resources for development purposes and is one of the world's largest consumers of groundwater (Nabavi 2018). According to Noori,

Maghrebi, Mirchi, and Madani (2021), groundwater provides about 60 percent of the total water supply in Iran. Ashraf, Nazemi, and AghaKouchak's (2021) findings show that 70 percent of Iran's land is under severe groundwater overdraft, where human uptake is more than three times of the normal recharge. A vast majority of the country's population lives in areas that are highly dependent on groundwater for drinking and irrigation. However, in recent decades it has experienced a drastic decline in the water levels of aquifers across the country. Groundwater policies and measures to control over-abstraction have largely failed to restore the groundwater balance (Nabavi 2018). The extensive water shortage in Iran, according to the head of Iran's Department of the Environment Isaa Kalantari, may pose a greater threat to the country than its traditional enemies Israel and the United States in the future, a crisis that may make Iran uninhabitable. Highlighting the critical nature of Iran's water shortage, Kalantari recognises that "this has happened due to the government's mismanagement of water resources and failed development policy" (Kalantari, cited in Radio Farda 2019). Continuing the business-as-usual approach with the depleting aquifers will expose Iran to food and water risks as well as socio-political and economic insecurity. As highlighted in Nabavi's (2018) study of the water shortage and changing Iranian governments' failed and mismanaged policies on this issue, demand for groundwater in Iran is dominated by agriculture, which uses about 90 percent of the country's water, 52 percent of which is currently supplied from groundwater resources. Water scarcity in Iran is a serious problem, challenging the concepts of environmental sustainability, development and economic sustainability. However, some areas of the country are more challenged by water shortages than others (Nabavi 2018; Noori et al. 2021).

In peripheral regions such as Kurdistan, Khuzestan and Sistan and Baluchistan, the experience of water shortage is somewhat different than in the central regions of the country (Water Fanack 2016). Nevertheless, in Tehran, Isfahan, and the central regions of the country—home to some of Iran's vital industrial and economic activity—shortages have affected households, industry, agriculture, and other economic activities. While climate change and decreased precipitation is one explanation for water scarcity, mismanagement of water resources, especially within Iran's food and agricultural sectors may also explain the country's critical water shortage. Iranian policymakers have aimed at overcoming water-related crises in the country's central regions by investing in projects designed to diversify water sources. This includes inter-basin water transfer projects, construction of mega-dams and desalination plants, diverting water flows, and water recycling projects (Karami 2018). Not all these state-led initiatives have been welcomed by the populations of the peripheral regions. For instance, inter-basin water transfer projects and river diversions have been controversial and hotly debated, viewed by populations of donor basins' as unsustainable and resulting in socioeconomic underdevelopment and environmental damage. Heighted in Nabavi's (2018) study, among these large projects, inter-basin water transfer projects have received considerable public attention, mostly because over the last decade they have run into problems at various social and political levels. The most controversial of these projects is a water-diversion project that transferred water from the Karoun River to the Zayandeh-Rood River—a river that flows into the Central Plateau and city of Isfahan and the project of the transfer of water

from Zab to Lake Urmia. For instance the latest example of water transportation not only have no effect on the revitalization of the lake, but will cause great damage to the Kurdistan region of Iraq (Ghanavati, Talebpoor Asl, and Khezry 2016), depending highly on the water flows from the rivers in Iranian Kurdistan to the Iraqi Kurdistan (Chomani and Bijmens 2016). In the following subsections, the environmental outcomes related to such water policies are highlighted.

### **Management of Water Resources in the Kurdistan Province**

The Kurdistan province has seven percent of Iran's runoff and annual precipitation of 455 mm. This province possesses 37 percent of the Caspian Sea catchment basin, 32 percent of the Urmia Lake catchment basin, and 31 percent of the Persian Gulf catchment basin (Qamarnia 2021). The total annual precipitation in the whole province of Kurdistan is 10.93 billion cubic meters. The renewable water resources for this region amount to 4.8 billion cubic meters. Of this, 4.3 billion cubic meters are surface water and the remaining 500 million cubic meters is groundwater. The total amount of water consumed in Kurdistan Province is 1.213 billion cubic meters, with 60 percent of this coming from groundwater and 40 percent from surface water resources. The breakdown of this water usage includes 1082 million cubic meters for the agricultural sector, household usage of 121 million cubic meters, and 10 million cubic meters of water in industry. However despite such as abundance of water and high precipitation volume, this province due to the transformation of its water to other parts of Iran is suffering from massive water shortage. The criticality of the condition proved evident when the MP of Sanandaj, Diwandara, and Kamiyaran, criticized the government for constructing too many dams in Kurdistan, aimed at diverting or transferring the water to neighbouring provinces (ISNA 2014).

Data reveals the mismanagement of water consumption in Kurdistan Province has a long-term damaging impact on the region's underground water basins. This mismanagement has occurred despite scientists warning of the critical condition of Kurdistan's underground water resources. For instance, in order to not place a further strain on underground water resources, according to scientific recommendations the maximum consumption rate of renewable water resources is 40 percent. While the permitted consumed amount from renewable water resources in Kurdistan Province is 1.9 billion cubic meters, the actual consumption is 1.23 billion cubic meters, 60 percent of underground water resources (Sohrabi 2019a). Such as overconsumption has taken place, despite the possibility of supplying consumers with water from other sources, such as surface water (ISNA 2015). The disproportionality of the reliance on underground water resources is evident when considering differences between the precipitation required for renewing underground water resources, the consumption rate, and the actual rate of precipitation (IRNA 2019).

Of the province's total rainfall, only 500 million cubic meters provide groundwater resources, while consumption has been 727 million cubic meters, leaving an annual deficit of 227 million cubic meters, and contributing to an unsustainable and non-renewed underground water system. In the long term, the continuation of such a pattern will result in the damage of underground water resources and drought in Kurdistan. Furthermore, this will result in severe environmental

consequences, such as subsidence and erosion of land. Field work and investigations show that despite the presence of huge pressure on Kurdistan water resources, the government has insisted on the implementation of the trans-Iranian transportation of the Kurdistan provinces' surface water resources to non-Kurdish provinces of Iran, among them Hamadan and Isfahan (Sohrabi 2019b).

### **The Drying of Lake Urmia**

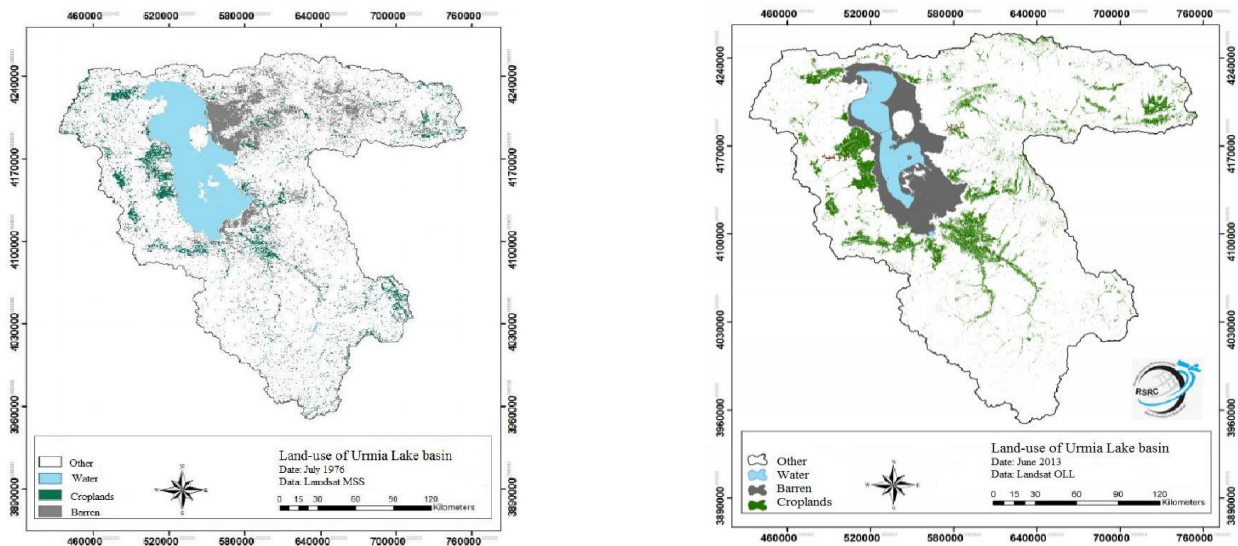
The drying of Lake Urmia (located in Urmia) has been a result of the mismanagement of water resources, mishandling of the degradation of natural environments, and the state's approach to economic and food development. The current conditions of Lake Urmia are also a result of an uneven, unsustainable and elitist approach to development, overconsumption, and the deployment of water resources from the renewable water resources. Comparing Lake Urmia with the Aral Sea, an endorheic lake lying between Kazakhstan and Uzbekistan, and using the term "Aralism" in describing the drying process of Lake Urmia, Karami claims that:

It is noteworthy that the drying of the Aral Sea and Lake Urmia [occurred in both cases] due to the environmental impact of the implementation of specific agricultural projects. In the Aral Sea case, the development of vast cotton farms in the Karakum Desert and in the Lake Urmia basin has led to an increase in the area under crops and changed the traditional cultivation pattern. The projects have been planned and monitored at the highest level of government. (Karami 2018: 43)

One of the environmental effects of the drying of the Lake Urmia has been that the decrease in the water level has left a salt bed exposed to wind and sun, creating what Karami call a "salt tsunami," polluting surrounding regions. The model by Hassani and colleagues (2020) shows that resulting airborne saline particles emitted from desiccated parts of lake could reach other countries in just few hrs causing environmental disasters. As emphasised in Karami's study (2018), government policies and the denial of environmental issues related to drought have accelerated the environmental degradation resulting from the drying of Lake Urmia. The former Vice-President and former head of the Environmental Protection Organization, Mohammad-Javad Mohamadizadeh, rejected the possibility of a salt tsunami around the lake, and stated in 2016 that "we hope that, starting next year, the process of the Lake Urmia's revival will begin and that it will return to its previous state and we believe that within five years, the Lake Urmia problem will be solved" (Mohamadizadeh, cited in Karami 2018: 50). According to officials, climate change has been the main reason for drying of Lake Urmia, though the scientific reports, agricultural policies and the ambition for food self-sufficiency reveal that the authorities, despite their awareness of the critical condition of the lake, instead of reducing cultivation and changing the cultivation model, have preferred to focus on increasing the efficiency of water usage. The disproportionate increase of cultivated areas in the land surrounding the lake has had a severe effect on environmental sustainability in the area. The satellite images included in by Karami's study show that during a period of 30 years (1976–2006), agricultural land in the basin increased by more than fourfold (Karami 2018: 51). Furthermore, published studies and data estimate the

current irrigated land within the watershed of Lake Urmia to be 500,000 hectares, an increase of 200,000 hectares from the 1970s (see Figure 1).

**Figure 1: Land Use in the Lake Urmia Basin, 1976 vs Land Use in the Lake Urmia Basin in 2013, Showing an Increase of 30 percent in the Area of Agricultural Land in the Period 1976–2013**



Source: Karami 2018: 59–60

### Trans-Iranian (Inter-Basin) Water Transportation and Dam Construction

An element of Kurdistan’s ecological and environmental movement is related to its opposition to the Iranian and Turkish states’ construction of mega-dams and revealing its damaging and threatening impacts on the lives and security of the people and communities affected by these state-centric activities. As demonstrated in previous studies the state-centric approach to development in Iran reveals evident in studying mega engineering projects such as the trans-Iranian water transportation projects. While such projects have benefited the central parts of Iran, these have resulted in massive communal disintegration and environmental degradation in the donor regions in Kurdistan and Khuzestan (Hassaniyan 2020). The state-centric approach to development and security, also known as the traditional approach to security (Wæver 1995; Buzan et al. 1998) refers to methods where governments have an absolutely dominating role to govern in the society. Within such an approach power and practices are exercised through strengthening top-down or hierarchical governance, where local communities, the general civil society, and NGOs are mainly excluded from decision-making or active partnership with state institutions in order to achieve collective goals. On the opposite side of the state-centric approach to security threat lies the societal or human-centric approach. According to the human-centric approach, threat to security occurs from chronic matters such as hunger, disease and repression. Therefore “the threats to human

security can be categorised, according to the report, under seven headings: economic security, food security, health security, environmental security, personal security, community security and political security” (Kerr 2003: 9). However, in the state-centric approach, state security and territorial integrity are the main focus, also states are considered the only relevant security actors, and therefore this approach ignores the security of people, and communities in a variety of dire situations. Nevertheless, as stated by Page and Redclift,

in terms of environmental issues, which can clearly be seen as affecting the lives of individuals, including such matters into the rubric of security from a substate referent point does not mean that the state’s role in addressing such concerns is invalidated. (Page and Redclift, cited in Christie 2010: 178)

According to Doyle, in every country where mega-dams are being built “there is an environmental movement which opposes it” (Doyle 2005: 126). Movements against mega-dams have grown in stature since the early 1980s. Such opposition is a reaction to disproportional destructive and degrading impact of mega-dames. Comprehensive report of the World Commission on Dams (WCD) published in 2000 reveals that the electricity generation, flood mitigation, and water provision of large dams has not lived anywhere near up to developers’ claims. In addition, the WCD report concludes:

Large dams have forced 40 to 80 million people from their homes and lands, causing extreme economic hardship, community disintegration and an increase in mental and physical health problems. Indigenous, tribal and peasant communities have been particularly hard hit. People living downstream of dams have also suffered from increased disease and the loss of natural resources upon which their livelihoods depended. (WCD Report 2000: 126)

While the exact numbers of displaced persons are obviously difficult to estimate, though Indian state’s building of mega-dames and the way these have resulted in displacement and deconstruction of communities can be used as an evident for the destructing impact of such state-considered developmental activities. Arundhati Roy’s (1999) book *The Greater Common Good*, published in 1999 as a major publication on this topic proves the destructive impact of this activities. Roy (1999) estimates that at least 33 million people have been displaced by mega-dams in India over the past fifty years (since the 1950s). Roy describes the environmental and ecological impact of big dams:

Big dams started well, but have ended badly. . . . They’re undemocratic. They’re the Government’s way of accumulating authority (deciding who will get how much water and who will grow what where). They’re a guaranteed way of taking a farmer’s wisdom away from him. They’re a brazen means of taking water land and irrigation away from the poor and gifting it to the rich. Their reservoirs displace huge populations of people leaving them homeless and destitute. Ecologically too, they’re in the doghouse. They lay the earth to waste. They cause floods, water-logging, salinity, they spread disease. (Roy, cited in Doyle 2005: 129–130)

As mentioned earlier, the trans-Iranian transportation of water has been deployed as a solution to overcoming water shortage and/or maintaining economic and agricultural activities in the central part of the country. Areas falling within the provinces of Khuzestan and Kurdistan possess most of the country's surface and underground water resources (Rahmati et al. 2015). However, the state's water and developmental policies of maintaining the development and wealth of one community at cost to the others, has been shown to result in protests in the supplier regions. One instrument in implementing trans-Iranian water transportation has been the state's massive investment in the construction of mega and semi-mega dams through regions rich with surface water resources. While water transportation from one region to others has been justified by the government as a matter of maintaining development, from the perspective of the population and environmental activist of peripheral regions such as Kurdistan and Khuzestan, this strategy is considered unsustainable, threatening the socioeconomic integrity and security of the supplier society. For instance, the water transportation projects established on the main sources of the Carron River via the Golab Tunnel and every three Koohrangs (I, II, and III), has resulted in drought and destruction of agricultural land around this river, and massive displacement of the people of the Lurestan, Khuzestan and Chahar Mehal and Bakhtiari regions (Bahrami 2016). In the Kurdish case, drilling tunnels, diverting river flows, digging canals and the irregular construction of dams are among the construction activities causing environmental and economic damage in these regions.

The dam industry has proliferated in different parts of Iran, particularly in Khuzestan and Kurdistan. For example, there are plenty of dams constructed around Lake Urmia basin and on its estuary of rivers in West Azerbaijan, East Azerbaijan, and Kurdistan provinces since the 1970s (Sevinc 2016). Recorded in Kokabian's (2022) study the extensive number of dams constructed across different regions of Iranian Kurdistan and diverting/transferring water behind these dams to other (mainly the central) parts of Iran is evidence of Iran's Islamic regime's colonial approach to Kurdistan and its natural resources. Disproportional dam construction has been shown to be among the main root causes of desertification, and the most threatening governmental development activity endangering biodiversity and harming the quality of the ecosystem (Taylor et al. 2020). Soil erosion, landslides, land subsidence, drought, and depopulation of certain regions and forced immigration are some consequences of the current Iranian development policy related to water in the Kurdish region (Chya 2015). The high number of dams constructed throughout Rojhelat reveal the state's attachment to maintaining economic activities in central regions by exploiting the resources of regions such as Kurdistan, regardless of the socioeconomic and ecological consequences for the supplier regions. There are already 54 dams in Kurdistan, some already in full function and other under the process of construction. Such policies of the state in Kurdistan have provoked the reaction of the native population. For instance, according to the Kurdish environmental scientist and activist Haq Morad the main objections of Kurdish environmentalist groups relate to irregular dam construction. The water that is transformed is far more above the capacity of the waters reserves in Kurdistan, and local authorities have no real impact on the



decision-making process related to water resources. For instance, in Kurdistan, management of dams has been given to the government officials of neighbouring provinces (Haq Morad 2018). Thus, what Kurdish environmental NGOs are fighting for is a combination of political, economic, and environmental justice; the feeling of exclusion and deprivation resulting from the state's economic and development policies in Kurdistan is immense.<sup>4</sup>

In an act of resistance against these activities, Kurdish environmentalists launched protests and awareness campaigns in 2015, bearing names such as “The Destructive Impact of the Dam Industry on Nature” or “The Dam's Environmental Damage” (Chya 2015), expressing their opposition to the disproportionate construction of large dams in Kurdistan. Environmental activists argue that in addition to the negative environmental effects, these dams destroy cultural heritage and the character and identity of the Kurdish region. As highlighted by activists, the so-called promoters of *Tawsa'e* (development), referring to the state's elite and officials, have for the last six decades supported the construction of dams all over Kurdistan. This has happened without consideration of the environmental consequences of such steps, and has resulted in the drying out of 40 major lakes, marshland and ponds, among them Lake Urmia (Chya 2016).

With the deceptive slogan of development, dam builders have exposed not only the environment but also human society to insecurity, crisis, poverty and anonymity. Aggressive development policies and the excessive construction of dams in Kurdistan (but also in Khuzestan) have destroyed different cultural heritage (Sedayepayeab1 2016). The negative impact of dam construction in the Kurdish region of Iran has also been experienced in the Kurdistan Region of Iraq (KRI). As noted by Chomani and Bijmens (2016), Iran's construction of the many mega-dams in the Kurdistan region will present significant challenges to the KRI's biodiversity and socioeconomic integrity. The impact will become evident in the coming years, as droughts caused by decreasing water levels in the Sirwan River could lead to social unrest. Agricultural areas will be destroyed, and a decrease in agricultural output will jeopardize food security in the KRI. Should a water crisis occur in the territories of the KRI, “people will be obliged to resort to groundwater, which is not safe to drink, and could in turn lead to health issues and an increase in diseases” (Chomani and Bijmens 2016).

Furthermore, the Islamic Republic of Iran has deployed water as a method of increasing its leverage over the Kurdistan Regional Government (KRG) in Iraq. The Iranian government has built a range of dams on rivers flowing from Iranian Kurdistan into the KRI, and diverted rivers, among them the Zab River, away from their natural courses into the KRI. This has been done under different pretexts, including using the water from these rivers to revive Lake Urmia. However, this strategy has not made any contribution to Lake Urmia; for instance, the Zab river will at most provide 600 million cubic meters, while Lake Urmia requires 15 billion cubic meters to be fully replenished. The diverted water from the Zab not only fails to make any significant contribution

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<sup>4</sup> Environmental justice includes the ability of communities to have a “voice” in the decision-making process that affects their health, environment, and quality of life, such as economic growth and development of communities.

to the revival of the Lake, but also results in environmental destruction, degradation and drought in the downstream areas of the Zab in Iranian Kurdistan and the KRI.

## **Conclusion**

The resource-based relationship between the Iranian government and peripheral regions of the country reveals that in a political and economic system characterised by core-peripheral relationships, the notion of development has different and competing connotations. For the center, development is reduced to maintaining economic activities and economic growth, and heightening productivity. However, the approach to development and natural resources provided by Kurdish environmentalists suggests that from the view of native (peripheral) population, sustainability comes before development, and development itself has wider and multi-layered meanings that go beyond the state-centric interpretation of the term. In Rojhelat, this condition has created a counter-hegemonic discourse in centre-peripheral relations. With the emergence and rise of tension and the establishment of widespread feeling of deprivation among peripheral populations, resistance to the core's socioeconomic and development policy will become institutionalised. The core frequently deals with this sort of resistance by securitising them and using hard security measures to suppress them. From the Kurdish perspective, the Iranian government's mechanism of extracting and exploiting natural resources is perceived as colonialist. As highlighted in this article, the management of water resources in Iranian Kurdistan is destructive management, and even though Kurdistan has sufficient water resources, due to the transfer of water from Kurdistan to other regions and the mismanagement of water resources, Kurdistan is threatened by desertification and land subsidence. The state-centric approach to socioeconomic development, exemplified through dam construction, water transportation, deforestation, the location of polluting industries such as oil refineries in or close to natural sites, and so on, are among the governmental initiatives that pose an extensive threat to environmental sustainability and the socioeconomic integrity of different communities in Rojhelat.

An important aspect of de-colonialization of life, culture, and politics in Kurdistan is related to allowing the Kurdish people to develop their region by benefiting from Kurdistan's natural and human resources. Furthermore, de-colonizing Kurdistan is equivalent to recognizing the fact that local issues require local knowledge and local solutions, and establishing a radical form of decentralization of the political and decision-making system that allows the Kurdish people to participate in different aspects of socio-political and economic activities determined by their cultural and national values, needs, and preferences. The environmental effects of the Iranian government's internal colonialist approach to the natural resources of peripheral regions, are extensive, though understudied. Deforestation resulting mainly from governmental activities and projects is among the other activities resulting in significant environmental degradation. However, similar to the limited knowledge on the state's water policy in the Kurdish region, the implications of deforestation remain largely unknown. Due to the danger posed to the Zagros Forests, located in the mountainous areas of Kurdistan, the authors of this paper will in future research investigate the relationship between the extensive deforestation of the Zagros terrain and the Iranian

government's military and counter-Kurdish movement's activities in this region, to understand how these cause environmental destruction.

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### References

- Adeola, Francis O. 2009. "From Colonialism to Internal Colonialism and Crude Socioenvironmental Injustice Anatomy of Violent Conflicts in the Niger Delta of Nigeria." Pp. 135–163 in *Environmental Justice in the New Millennium: Global Perspectives on Race, Ethnicity, and Human Rights*, edited by F. C Steady. New York: Palgrave MacMillan.
- Allen, Robert L. 2005. "Reassessing the Internal (Neo) Colonialism Theory." *The Black Scholar* 3(1): 2–11.

- Alston, Dana and Nicole Brown. 1993. "Global Threats to People of Color." Pp. 179–194 in *Confronting Environmental Racism Voices from the Grassroots*, edited by R. D Bullard. Massachusetts: South End Press.
- Ashraf Samaneh, Ali Nazemi and Amir AghaKouchak, 2021. "Anthropogenic Drought Dominates Groundwater Depletion in Iran." *Scientific Reports* 11 (9135): 1–10.
- Bahrami, Azam. 2016. "Iran's Water Policies Triggering Regional Resistance." Retrieved December 15, 2020 (<http://www.payvand.com/news/16/jul/1148.html>).
- \_\_\_\_\_. 2018. "Why are Environmental Activists under Pressure?" Retrieved December 15, 2020 (<https://www.radiozamaneh.com/384089>).
- Banerjee, Subhabrata B. 2011. "Voices of the Governed: Towards a Theory of the Translocal." *Organization* 18(3): 323–344.
- Beşikçi, Ismail. 2004. *International Colony Kurdistan*. London: Taderon Press.
- Bilgen, Arda. 2018. "A Project of Destruction, Peace, or Techno-Science? Untangling the Relationship Between the Southeastern Anatolia Project (GAP) and the Kurdish Question in Turkey." *Middle Eastern Studies* 54(1): 94–113.
- Blauner, Robert. 1969. "Internal Colonialism and Ghetto Revolts." *Social Problems* 16(4): 393–408.
- Bullard, Robert D. 1993. "Anatomy of Environmental Racism and the Environmental Justice Movement." Pp. 15–40 in *Confronting Environmental Racism Voices from the Grassroots*, edited by R. D. Bullard. Massachusetts: South End Press.
- Buzan, Barry, Ole Wæver, and Jaap de Wilde. 1998. *Security, A New Framework for Analysis*. Colorado: Lynne Rienner Publishers.
- Carmichael, Stokely and Charles Hamilton. 1967. *Black Power: The Politics of Liberation*. New York: Knopf Doubleday Publishing Group.
- Chomani, Kamal and Toon Bijnens. 2016. "The Impact of the Daryan Dam on the Kurdistan Region of Iraq. *Save the Tigris and Iraqi Marshes Campaign*. Retrieved January 20, 2021 (<https://www.iraqicivilsociety.org/wp-content/uploads/2016/10/Daryan-Dam-Report.pdf>).
- Chya. 2015. "The Lake Zrebar Basin is the Last Piece Devoted by Potatoes and Saplings." *Sociocultural Monthly* 1(1): 1–8.
- \_\_\_\_\_. 2016. "The Water Problem". *Sociocultural Monthly* 1(9): 1- 8.
- \_\_\_\_\_. 2017. "Tehran, Tehran." *Sociocultural Monthly* 2(18): 1–8.
- Ciment, James. 1996. *Kurds State and Minority in Turkey, Iraq and Iran*. New York: Facts on File.

- Conde, Gilberto. 2016. "Water and Counter-Hegemony: Kurdish Struggle in the Tigris and Euphrates in Turkey." *Revista de Paz y Conflictos* 9(2): 43–58.
- Crowe, Douglas M. and Jeff Shryer. 1995. "Eco-Colonialism." *Wildlife Society Bulletin* 23(1): 26–30.
- Dawson, Jane I. 2000. "The Two Faces of Environmental Justice: Lessons from the Eco-Nationalist Phenomenon." *Environmental Politics* 9(2): 22–60.
- Doyle, Timothy. 2005. *Environmental Movements in Minority and Majority Worlds, A Global Perspective*. New Brunswick: Rutgers University Press.
- Egan, Michael. 2002. "Subaltern Environmentalism in the United States: A Historiographic Review." *Environment and History* 8: 21–41.
- Elling, Rasmus. 2013. *Minorities in Iran: Nationalism and Ethnicity After Khomeini*. London: Palgrave MacMillan.
- Erdelan, Saro. 2019. "Colonialism and Revolution." *Tishk* 21(53): 32–43.
- Fadaee, Simin. 2011. "Environmental Movements in Iran: Application of the New Social Movement Theory in the Non- European Context." *Social Change* 41(1): 79–96.
- Farangis, Baqer. 2020. *Rojhelat's Natural Resources, Studying the Natural Resources in Western Iran*. Berlin: Goethe & Hafis Verlag.
- Financial Tribune. 2019. "Iran's Inter-Basin Water Transfer." Retrieved March 8, 2021 (<https://financialtribune.com/articles/energy/99845/irans-inter-basin-water-transfer-schemes-challenged>).
- Ghanavati, Ezatollah, Dawwod Talebpoor Asl, and Saeed Khezry. 2016. "Assessment of the Impacts of Inter-Basin Water Transfer on the Bed River Morphology in the Origin Basin (Case Study: Zab River Basin)." *Geography and Development in Iran* 14(44): 65–88.
- Ghassemlou, Abdul Rahman. 1965, *Kurdistan and the Kurds*. Prague: Collet's.
- Gonzalez-Casanova, Pablo. 1952. "Internal Colonialism and National Development." *Studies in Comparative International Development* 1: 27–37.
- Gurses, Mehmet. 2012. "Environmental Consequences of Civil War: Evidence from the Kurdish Conflict in Turkey." *Civil Wars* 14(2): 254–271.
- Hamilton, Cynthia. 1993. "Coping with Industrial Exploitation." Pp. 63-75 in *Confronting Environmental Racism Voices from the Grassroots*, edited by R. D. Bullard. Massachusetts: South End Press.
- Haq Morad, Mohammad. 2018. "Environmental Issues have Roots in Ethics and Politics." *Chakar Weekly* 1(3): 1–10.
- Hasan, Mejs, Aaron Moody, Larry Benninger, Heloise Hedlund. 2019. "How War, Drought, and Dam Management Impact Water Supply in the Tigris and Euphrates Rivers." *Ambio* 48: 264–279.

- Hassani, Amirhossein, Adisa Azapagic, Paolo D’Odorico, Amir Keshmiri and Nima Shokri. 2020. “Desiccation Crisis of Saline Lakes: A New Decision-Support Framework for Building Resilience to Climate Change.” *Science of The Total Environment* 703: 1–22
- Hassaniyan, Allan. 2019. “Demographic Engineering and Population Alteration in Iranian Kurdistan.” *Contemporary Review of the Middle East* 6(2): 172–190.
- \_\_\_\_\_. 2020. “Environmentalism in Iranian Kurdistan: causes and conditions for its securitisation.” *Conflict, Security & Development* 20(3): 355–378.
- \_\_\_\_\_. 2021. “The Environmentalism of the Subalterns: A Case Study of Environmental Activism in Eastern Kurdistan/Rojhelat.” *Local Environment Local Environment* 26(8): 930–947.
- Hicks, Jack. 2004. “On the Application of Theories of ‘Internal Colonialism’ to Inuit Societies.” *Presentation for the Annual Conference of the Canadian Political Science Association Winnipeg*. Retrieved March 15, 2021 (<https://www.cpsa-acsp.ca/papers-2004/Hicks.pdf>).
- IRNA. 2019. “Irregular Consumption and Overconsumption of Underground Water Resources is the Major Challenge in Kurdistan.” Retrieved January 18, 2021 ([www.irna.ir/news/83602809/](http://www.irna.ir/news/83602809/)).
- ISNA . 2015. “The Water Situation in Kurdistan is Critical.” Retrieved October 20, 2020 (<https://www.isna.ir/news/kordestan-16417/>).
- \_\_\_\_\_. 2014 “Why Kurdistan's Water is Transferred to Other Provinces?” Retrieved July 1, 2021 (<https://www.isna.ir/news/93061207589/>).
- Jaafar, Hadi, Farhad Ahmad, Lauren Holtmeier, and Caroline King-Okumu. 2020. “Refugees, Water Balance, and Water Stress: Lessons Learned from Lebanon.” *Ambio* 49: 187–196.
- Jamieson, Dale. 2007. “Justice: The Heart of Environmentalism.” Pp. 85–102 in *Environmental Justice and Environmentalism The Social Justice Challenge to the Environmental Movement*, edited by R. Sandler and P. Pezzullo. Cambridge, MIT Press.
- Johnson, Glenn S. 2009. “Environmental Justice: A Brief History and Overview.” Pp. 17–46 in *Environmental Justice in the New Millennium*, edited by C. Filomina. London: Palgrave.
- Karami, Nasser. 2018. “The Drying of Lake Urmia as a Case of the ‘Aralism’ Concept in Totalitarian Systems.” *International Journal of Geography and Regional Planning* 4(1): 43–65.
- Kerr, Pauline. 2003. *The Evolving Dialectic between State-Centric and Human-Centric Security*. Canberra, Published by Department of International Relations RSPAS.
- Kokabian, Pejvak. 2021. *Co-Colonialism: Near Colonizer and Far Colonizer*. Arizona.

- Krippendorff, K. 2004. *Content Analysis: An Introduction to Its Methodology*. Thousand Oaks: Sage Publications.
- Nabavi, Ehsan. 2018. "Failed Policies, Falling Aquifers: Unpacking Groundwater Overabstraction in Iran." *Water Alternatives* 11(3): 699–724.
- Noori, Roohollah, Mohsen Maghrebi, Ali Mirchi, and Kaveh Madani. 2021. "Anthropogenic Depletion of Iran's Aquifers." *PNAS* 118(25): 1–7.
- O'Shea, Maria T. 2004. *Trapped between the Map and Reality and Perceptions of Kurdistan*. London: Routledge.
- Pulido, Laura. 1993. "Sustainable Development at Ganados." Pp. 123–140 in *Confronting Environmental Racism Voices from the Grassroots*, edited by R. D. Bullard. Massachusetts: South End Press.
- Pinderhughes, Charles. 2011. "Toward a New Theory of Internal Colonialism." *Socialism and Democracy* 25(1): 235–256.
- Radio Farda. 2019. "We will have More Water Problems in the Near Future." Retrieved January 28, 2021 (<https://www.radiofarda.com/a/klanatri-water-scarcity/30333254.html>).
- Rahimi, Mohammad and Karim Solaimani. 2017. "Remote Sensing and GIS Based Assessment Groundwater Potential Zones Mapping Using Multi-Criteria Decision Making Technique." *Iran-Watershed Management Science and Engineering* 10(35): 27–38.
- Rahmati, Omid, Aliakbar Nazari Samani, Mohamad Mahdavi, Hamid Reza Pourghasemi and Hossein Zeinivand. 2015. "Groundwater Potential Mapping at Kurdistan Region of Iran Using Analytic Hierarchy Process and GIS." *Arab J Geosci* 8: 7059–7071.
- Rasouli, Dawood. 2020. "Landslide in Rojhelat/Eastern Kurdistan." *Tishk* 22(57): 162–169.
- Qamarnia, Hoshang. 2021. "Kurdistan is a Victim of Inter-Basin Water Transfer Projects." Retrieved June 30, 2022 (<https://razipress.ir/News/Item/61734>).
- Reed, T. V. 2009. "Toxic Colonialism, Environmental Justice, and Native Resistance in Silko's *Almanac of the Dead*." *Ethnicity and Ecocriticism* 34(2): 25–42.
- Roy, Arundhati. 1999. *The Greater Common Good*. Bombay: India Book Distributor.
- Roy, Sara. 1999. "De-development Revisited: Palestinian Economy and Society, Since Oslo Author." *Journal of Palestine Studies* 28(3): 64–82.
- Sedayepayeab1 .2016. Supporters of the Opposition Movement to Transfer Water to the Central Plateau. Retrieved February 15, 2021 (<https://t.me/sedayepayeab1>).
- Sevinc, Harun. 2016. "The Role of Dams In Drying Up Lake Urmia and Its Environmental Impacts on Azerbaijani Districts of Iran." *SAUSSUREA* 6(1): 54–65.

- Smith, Courtland and Brent S. Steel. 1995. "Core-Periphery Relationships of Resource-Based Communities." *Community Development* 26(1): 52–70.
- Sohrabi, Mansour. 2019b. "Barriers and Solutions for Agricultural Development in Rojhelat." *Tishk* 20(52): 214-228.
- \_\_\_\_\_. 2019a. "Colonial Management of Land in Iranian Kurdistan." *Tishk* 20(52): 114–123.
- \_\_\_\_\_. 2020. "Eco-feminism." *Tishk* 22(57): 92–95.
- Soleimani, Kamal and Ahmad Mohammadpour. 2019. "The Securitisation of Life: Eastern Kurdistan under the Rule of a Perso-Shi'i State." *Third World Quarterly* 41(4): 663–682.
- \_\_\_\_\_. 2019. "Can Non-Persians Speak? The Sovereign's Narration of Iranian Identity." *Ethnicities* 19(5): 925–947.
- Soleimani, Kamal 2020. "A Green Struggle for Kurdistan, Sharif Bajwar and his Comrades." *Tishk* 22 (57), 34–57.
- Taylor, David I., Candace A. Oviatt, Anne E. Giblin, Jane Tucker, Robert J. Diaz, and Kenneth Keay. 2020. "Wastewater Input Reductions Reverse Historic Hypereutrophication of Boston Harbor, USA." *Ambio* 49: 187–196.
- Water Fanack. 2016. "Water Challenges of Iran." Retrieved November 25, 2021 (<https://water.fanack.com/iran/water-challenges-of-iran/>).
- World Commission on Dams (2000) *Dams and Development: A Framework for Decision-Making: the Report of the World Commission on Dams*. London: Earthscan Publications Ltd.
- Weidmann, Nils B. 2009. "Geography as Motivation and Opportunity: Group Concentration and Ethnic Conflict." *Journal of Conflict Resolution* 53(4): 526–543.
- White, Marilyn D. and Emily E. Marsh. 2006. "Content Analysis: A Flexible Methodology." *LIBRARY TRENDS* 55 (1): 22–45.
- Wood. Adrian P. 1993. "Natural Resource Conflicts in South-West Ethiopia: State, Communities, and the Role of the National Conservation Strategy in the Search for Sustainable Development." *Nordic Journal of African Studies* 2(2): 83–102.
- Wæver, Ole. 1995. "Securitization and Desecuritization." Pp. 49–80 in *On Security*, edited by D. L Ronnie. New York: Columbia University Press.
- Ziltener, Patrick and Daniel Kunzler. 2013. "Impacts of Colonialism: A Research Survey." *Journal of World-Systems Research* 19(2): 290–311.