

Regionalization of Environmental regulation for Northern Region of Iran

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ABSTRACT

The northern region of Iran comprises three provinces facing environmental and socioeconomic challenges due to their special and unique ecological and geological characteristics, such as special wetlands, forests, flora, and fauna. A unique environmental regulation system is required for particular traits of the ecosystems of this region, their unique functions and susceptibilities, and interconnections with socioeconomic affairs. It is supposed that one of the leading environmental problems of these susceptible provinces is the need for adapted environmental regulations harmonized with their regional special circumstances. Despite its necessity, few environmental regulations have been passed concerning the special ecological circumstances of this region. However, there still needs to be a framework and integrated regulatory system to protect the environment of this region entirely and be compatible with socioeconomic considerations. This study diagnoses the current environmental regulation regime of the northern region of Iran and its challenges based on legal descriptive and analytical methods; then, it examines how to choose a regional environmental regulation system to harmonize this regulatory system with this region's exceptional ecological and socioeconomic circumstances. The findings showed that besides the absence of an adaptive environmental regulation, the region lacks a legally enforced comprehensive sustainable development strategy to link the environmental and socioeconomic considerations. The article suggests an adaptive regional environmental regulation mechanism empowered with special regulations, local multilevel environmental governance, environmental decentralization, and establishing a regional environmental council to appropriately coordinate the related organizations to protect the northern natural environment.

Keywords: adaptive environmental regulation, environmental regionalization, local environmental governance, north of Iran, proportionality principle.

Article type: Research Article.

INTRODUCTION

In the command and control approach, obligatory statutes are generally enacted for all a country's regions. According to this approach, the legislature enacts general rules to protect the environment. It protects natural ecosystems such as forests, coasts, and public lands through general laws, dominant for all regions of the country. These general environmental laws, under a pervasive unified legal order that prevents divergence among the laws, build up an integrated and coordinated legal system to protect the environment. In this legal approach, the natural ecosystems of every region of the country are addressed by a single law or bylaw enacted by the central government. For example, the Act on Protection and Utilization of Forests and Ranches (1967) protects all of the forests, and the Clean Air Act (2018) controls air pollution in every region of the country. The Iranian legislature, during its half-century of environmental legislation, which commenced with the Environmental Protection and Restoration Act (1974) and continued with many other laws and regulations, has taken all of the regional environments of the country as one and has overlooked the necessity of a special legal order for specific natural, regional, and geographical characteristics of the ecosystems. Although this one-size-fits-all approach may be responsive in some social and economic regulatory areas, its application in environmental regulation needs to be revised. Similar and identical rules for protecting natural ecosystems in different ecoregions discount their

specifics and cannot guarantee adequate protection. Since every ecosystem, according to its nature and environment, expresses specific traits required to be protected effectively, specified regulations are needed (Ruhl *et al.* 2007). For example, vulnerable ecosystems demand stringent conservative regulations, such as protecting endangered fauna and flora. In addition to the natural and eco-regional distinctions of ecosystems, socioeconomic conditions differ from region to region as the main influencers on environmental issues. Due to the interlinkage between the social and natural environments, the legislature has to take account of the social factors in environmental protection, as it hardens the air pollution regulations in crowded cities or prohibits any disturbance in the protected natural refuges. Considering the regional environmental and social differences, specific laws and regulations are required to protect each environmental region efficiently. A good example of this assumption is environmental protection in the northern region of Iran. The north region of Iran, composed of three provinces, provides a special environmental region encompassing some distinctive ecosystems like the Caspian Sea, Hyrcanian forests, numerous wetlands, Damavand mountain, and some endemic faunas and floras. During the last decades, this phytogeographical region of Iran has experienced enormous changes, such as population growth and urban sprawl (Dadashpoor & Salarian 2020), expansion of farmlands, and development of manufactures (Statistical Center of Iran 2021). As a result, nowadays, the region suffers from a high degree of environmental degradation, such as deforestation (Yachkaschi *et al.* 2008), water pollution, untreated wastewater, destruction of natural habitats, and illegal constructions. Therefore, the present environmental regulations can not guarantee efficient protection of the natural ecosystems of the northern region. Thus, the question is: does protecting the north region's environment require some special regional regulations? What are the legal mechanisms of regionalizing environmental regulation in line with this region's particular circumstances, and is this regulation model applicable in Iran's legal system?

This study assumes that coordinating the central and country-wide environmental and regional regulations can better protect the northern region's environment. However, the regionalization of environmental regulation, in addition to the regionalized rules, requires efficient regional and polycentric environmental governance to empower the local institutions to take more responsibility for protecting their region's environment. Polycentric ecological governance refers to the participation of all multi-type and multilevel institutions and the application of diverse instruments for environmental protection. This study opens an initial theoretical debate about the necessity, feasibility, and mechanisms of regionalization of environmental regulation in the northern provinces of Iran, which needs to be paid more attention so far. In doing so, this study probes the necessity of special regulation to protect the northern region's environment, analyzes the reigning body of special regulations laid down to this end, and then examines the applicability and mechanisms of regionalization of the regulatory system in the legal system of Iran and finally suggests how to promote regional environmental law for this region.

MATERIALS AND METHODS

This inquiry uses qualitative and document-oriented legal analytical methods to investigate the main environmental regulation problems in the northern region of Iran. In doing so, it examines the appropriateness of reigning environmental regulations in the three northern provinces and the feasibility of a proper regulation model. This study finds two environmental and socioeconomic reasons for regionalizing ecological regulation in this region. Regionalization of environmental regulation here means a model of environmental regulation aiming to harmonize the rules with a region's particular ecological and socioeconomic circumstances. This study provides two main pillars for this model of regulation: first, the adoption of special regulations according to the proportionality and proximity principles and distinctive environmental and socioeconomic characteristics of a region, and second, administrative decentralization and empowerment of the local institutions and communities in environmental governance of the region.

RESULTS AND DISCUSSION

The necessity of special regulation to protect the distinct environments

One of the main problems with environmental regulation is that the complexity of natural ecosystems practically complicates their protection process. Besides their various similarities, the natural ecosystems have many differences in sensibility, specific geographical and climatic characteristics, structure and function, diversity of elements, and relationship with the other ecosystems (Dickinson & Murphy 2007). The ecosystems, as nature's alive, complex, and dynamic elements (Lazarus 2004), interact with their surrounding environment and coordinate themselves with the local conditions. Consequently, each ecosystem operates according to its unique ecological

conditions; hence, the ecosystems are distinguished through their regional traits. Due to this trait, regulation of environmentally heterogeneous regions with country-wide homogeneous rules is technically challenging. Each ecosystem may call for adaptive and regionalized regulations to protect it according to its regional characteristics (Brooks 1992). Prescription of the same regulations for regionally diverse ecosystems may ignore their diverse conditions and socio-economic-related matters. Based on this issue, the preamble of the Convention on Biological Diversity (1992) notes that "the fundamental requirement for the conservation of biological diversity is the in-situ conservation of ecosystems and the maintenance and recovery of viable populations of species in their natural surroundings," emphasizes on taking account of the regional conditions and characteristics of the ecosystems. Also, Article 1(3) of the World Charter for Nature (1982) states that "All areas of the earth, both land, and sea, shall be subject to these principles of conservation; special protection shall be given to unique areas, to representative samples of all the different types of ecosystems and to the habitats of rare or endangered species." These two basic international documents confirm that diverse and adaptive instruments should be implemented to protect natural ecosystems efficiently. This harmonization in regulation provides proper protection for ecosystems in all regions. Thus, the environmental regulations should address each regional ecosystem's specific characteristics, considering its vulnerabilities and local conditions (Karkkainen 2003). Environmental regulation requires regulatory instruments, and to choose the best instrument, multiple legal, social, and economic instruments at regional and national levels considering the specific environmental and socioeconomic circumstances of the given region should be examined (Spagnuolo 2011). With this in mind, regional ecological regulation can be based on the proportionality principle, according to which the regulator should take all the suitable instruments proportionate to the particular local situation of any ecosystem because appropriate protection of every ecosystem requires specific instruments and actions based on its ecological in-situ conditions such as temporal and local situations, special vulnerabilities, social and economic aspects, and threats. Thus, according to this principle, the regulator must proportionate its regulatory instruments with the vulnerability and susceptibility of ecosystems. According to the principle of subsidiarity, the regional administration should be empowered with proportional instruments to take the necessary actions to provide appropriate devices for regional environmental regulation. The local administrative bodies are able to recognize problems and respond to them faster than the central ones. The northern region of Iran is a suitable example of this issue. The area needs an adapted and proportional regional environmental regulation model due to its special regional environmental and socioeconomic characteristics. The three northern coastal provinces, as the green region of Iran, enjoy specific ecological features that are distinguished from the country's other provinces. First, they encompass vast biodiversity, numerous natural parks and habitats (Statistical Center of Iran 2021), and special natural ecosystems such as forests, mountains, wetlands, scenic landscapes, abundant flora and fauna, coastal land, and the Caspian Sea. Such vast biodiversity is almost unique to other regions of the country. For example, Hyrcanian forests in this region are one of the unique forms of forests in Iran and the world (Sagheb *et al.* 2014). Furthermore, as the preamble of the Protocol for the Protection of the Caspian Sea against Pollution from Land-based Sources and Activities (2012) recognizes, the Caspian Sea has a unique ecological and hydrological nature. However, due to its enclosed ecosystem, this sea is extremely vulnerable to negative changes caused by human activities like pollution (Yousefi 2008; Korshenko & Gul 2005), wastewater, damming, habitat destruction, and overfishing (MRC 2014). On the other side, the diverse and abundant natural resources of this region provide considerable jobs and economic opportunities for the local people, such as fishing, agriculture (Emadodin & Bork 2012), forestry (Yachkaschi *et al.* 2008), and environmental tourism. For this reason, economic activities in this region, especially in the villages, highly depend on natural resources (Sagheb *et al.* 2014; Department of Environment 2015). As the northern provinces enjoy more desirable indexes of sustainability than the country's other provinces (Hosseini *et al.* 2021), this region has been an interesting spot for tourism and migration in Iran. Nevertheless, during the last decades, the northern region has undergone sweeping changes due to massive agricultural activities, logging, precipitous urban sprawl, housing, construction, and tourism. One root cause of vulnerability to these changes refers to the geographical shape of the region: the three northern provinces are geographically restricted lands, which are enclosed between the Caspian Sea coast to the north and the Alborz mountain ranges to the south. Thus, limited land area, on the one hand, and high demand for socioeconomic development, on the other hand, heavily distress the diverse natural resources and environmental features of this region. Limited and semi-enclosed land has highly made the natural environment of northern provinces vulnerable to socioeconomic development. However, the environmental problems of this region stem from more than just the very northern provinces. Due

to narrow forest cover, water shortage, and disfavor climate in many other regions, the provinces of the north have become one of the most attractive areas for tourism, business, and migration in Iran. The northern provinces have a high population density due to their unique natural landscapes and favorable climate (Emadodin *et al.* 2012) and bear the brunt of tourism, urban sprawling, migration, and other human interventions (Mahmoudian & Mahmoudiani 2018). This high attraction poses an extraordinary impression on the region's environment; issues such as mass accumulation of waste, sprawling tourism services, and construction have made controlling environmental rules difficult. As a result, the three northern provinces encounter a plethora of environmental problems such as forest degradation (Emadodin *et al.* 2012), log smuggling, illegal logging, and illegal timber trade (Nikooy *et al.* 2022), land-use change, flood runoff, and soil erosion caused by deforestation (Kavian *et al.* 2014; Gholami 2013; Gholoubi *et al.* 2019), social disputes over forest tenure (Yachkaschi *et al.* 2008), poaching, encroachment of public lands and illegal public land grabbing (Bahrami *et al.* 2010) and soil pollution (Rashidghalam 2020). The necessity of preserving the unique natural ecosystems of the northern region and the extreme vulnerability of its environment to socioeconomic pressures call for an efficient environmental regulation regime adapted to the special environmental circumstances of this region. Then, it poses this question: Is there any special model of environmental regulation in Iran's legal system to respond to the special challenges of the northern region?

Environmental regulation regime of the northern provinces

The special environmental conditions of the northern provinces and their intricate interconnectedness with socioeconomic affairs support the idea that a special proportional environmental regulation regime is required for this region. Moreover, the number of environmental challenges and increasing social and economic pressures have questioned the efficiency of the reigning regulations in environmental protection in this region. The mentioned environmental challenges derive from several legal and ultra-legal reasons (Roudgarmi & Amoozadeh Mahdiraji 2020). Still, this study concentrates on one of which, i.e. regional adaptability of regulation as a key factor in these challenges. During the past decades, several country-wide environmental laws and bylaws, such as the Act on Hunting and Fishing (1967), Act on Coastal Land (1975), and Act on Forests Protection and Utilization Act (1967), have increasingly entered into force in the legal system of Iran which dominate equally on all regions of the country as the same. Almost all of the ecosystems in the country are protected by these legal statutes, which are concurrently applicable to the northern region. Although these uniform regulations may face some challenges in response to the various regional circumstances:

- a) Some of the leading legal statutes need to be updated. Still, they need to be updated and synchronized to the northern region's ever-changing socioeconomic and environmental circumstances during the last five decades. For example, the longstanding Act on Coastal Land provides no special mechanism for protecting coastal environments, particularly for the vulnerable coasts of the northern region (Rezayan Ghayehbashi *et al.* 2017).
- b) Natural ecosystems in the northern areas, such as the forests, rangelands, natural habitats, coastal zones, wildlife, and also the social environment, have unique characteristics, sometimes dissimilar with their counterpart ecosystems in other regions of the country; nonetheless, the national environmental regulations prescribe a similar disproportionate set of rules for all of the ecosystems. Under this uniform regulation, the regional ecosystems' different socioeconomic and ecological conditions, essential in adaptive regulation, are probably neglected. However, any effective regulation model takes an adaptive approach in which rules are adjusted to changes in various circumstances (Baldwin, Cave & Lodge 2012).

One of the leading causes of this uniformity in regulation is related to the public administration model applied in Iran, which is basically central. Although it accepts some degrees of decentralization (Act on Administrative Divisions, 1982) and decentralization (Principle 6 of Iran's Constitution), the distribution of the administrative powers among the central, governmental, and non-governmental bodies is not equal and balanced. The laws, bylaws, and policies enacted by the central government tend to maintain their competencies rather than allocate them to decentralized local institutions (Abdolmohammadi & Cama 2020). Thus, the local governmental administrative bodies are just executors of the central government's regulations. In contrast, the local non-governmental public bodies need to be empowered with more competencies in environmental issues. As a result, the central government treats many of the environmental issues of the north region as national holistic issues that should be addressed and handled by the central administration. This is justifiable in terms of uniformity and generality of the laws. However, it does not necessarily address local in-site ecosystems' unique features and

needs. Since the government considers environmental protection a sovereignty action (Act on Public Service Management, Art. 8), the main decision-making power regarding regional environmental issues comes under the central government's competence. Therefore, many environmental laws and regulations are passed similarly for all regions of the country with the least adaptation to the particular ecological characteristics of the local ecosystems. Due to governmental-based public administration, there is not enough room for the participation of non-governmental bodies and environmental governance of many ecosystems, such as forests (Sotoudeh Foumani *et al.* 2017), and this is legally based on governmental management. Throughout the last decades, special rules have been adopted for specific ecosystems of the northern region in several laws and Council of Ministers' regulations the laws such as the Act on Sanction of Illegal Fishing in the Caspian Sea and Persian Gulf (1979), The Council of Ministers' Bylaw for Lodgment of the Industrial Units on the Northern Provinces (2000), Comprehensive Plan for Protection of the Northern Forests (2003), and The Council of Ministers' Bylaw for Eviction of Illegal Possessed Coastal Area of the Caspian Sea (2008). Among the most important of which was the Comprehensive Plan for Protection of the Northern Forests (2003), which obliged the Organization of Plan and Budget to provide a land zoning plan for the three northern provinces emphasizing the priority of protection and development of the forests (Art. 14). This was one of the rarest legal documents that especially was passed to regulate the various ecological and socioeconomic dimensions of northern forests. There are also some general laws and regulations that have assigned devices for the environmental matters of the provinces of the north; for instance, the Regulation of the Supreme Council for Environmental Protection on Environmental Assessment (2011) determines special criteria for environmental assessment of establishing the industrial plans and projects in the northern provinces. The 6th Development Plan Act (2016) obliged the Council of Ministers to approve a comprehensive plan for tourism in the northern forests. Also, Iran has ratified the Framework Convention for the Protection of the Marine Environment of the Caspian Sea (2003) and some of its protocols such as the Protocol for the Protection of the Caspian Sea against Pollution from Land-based Sources and Activities (2012), Protocol on Conservation of Biological Diversity (2014). Protocol Concerning Regional Preparedness, Response and Cooperation in Combating Oil Pollution Incidents (2011), Protocol on Environment Impact Assessment in a Transboundary Context (2018). In sum, the precedence of regional environmental regulation in Iran demonstrates that special enactments for ecological protection in the northern region are a progressive movement in Iran's environmental law. However, more is needed to address the region's ecological challenges effectively.

c) Effective enforcement and compliance in practice is challenging for the reigning environmental laws and regulations. Numerous factors (e.g., inter alia conflicts between socioeconomic and ecological matters) undermine the effective implementation of environmental regulations. To be implemented effectively, the environmental regulations should be supported by socioeconomic facilitators, incentives, and instruments (Hann & Stavins 1991; Baldwin & Black 2007), an essential trivialized point in environmental regulation for the northern provinces. Since the northern region is susceptible to environmental degradation, land exploitation, and other contaminating activities, any environmentally deteriorating socioeconomic activity should be subject to stringent protective and restorative environmental rules.

This complex situation indicates the necessity of an adapted and regionalized environmental regulation to meet the special circumstance needs of this region. To be updated and efficient, environmental protection should be regulated according to the regional socioeconomic circumstances of this region since, with stringent and effective environmental regulations backed by efficient enforcement mechanisms, sustainability of the northern natural ecosystems will be guaranteed. This situation is dichotomous: there is an urgent need for stringent environmental regulation and a pressing need to address the special socioeconomic considerations on the other. Stringent environmental regulations entail socioeconomic consequences, which are deprived of incentives and feasible instruments and may restrain economic growth in this region and lead to uneven regional development. Thus, any restriction on economic activities in the name of environmental protection may provoke social discontent and anti-environmental approaches in adhesion to economic growth if only the local people have to count the costs for environmental protection. Regional necessities urge the central government to implement special regional environmental regulations in the northern region. However, these bodies of regulation are faced with at least three problems:

First, the current regulations need to provide a coherent and integrated legal system to protect the environment of this region entirely and only create a unique, comprehensive legal order. For example, the northern region's common ecological and socioeconomic issues of pastures, farms, rivers, watersheds, wetlands, and mountains are

not regulated. The environmental regulatory body should consider the north region as an integrated complex of unique ecosystems that are different and at different vulnerability levels from the other regions. Second, a legally enforced sustainable development strategy and plan are needed to reconcile the increasing trends in economic and social development with the requirements for environmental protection in these regions. The current regulations and development plans need to devise a specific program for sustainable development in this region; thus, the current regulations have no special device to reconcile economic and social development plans and environmental protection in the northern region. To pursue sustainable development in this region and reduce the burdens of environmental regulations on the economic sector, a plethora of green instruments and resourceful incentives for green industries and businesses should be provided. However, the current economic and environmental regulations do not include a unique green economy-based mechanism. Third, the imperative necessity of sustainable development and protection of natural ecosystems in the northern region, on the one hand, and the inclusion of various administrative bodies in the environmental-related affairs, on the other hand, require a coordinative administration to collaborate in the management of environmental protection in the northern provinces. While various governmental organizations, such as the Department of Environment and the Agriculture Ministry, operate in the regions of the north, there needs to be a special administrative apparatus to correlate them with the regional environmental issues. In conclusion, the ecological law of Iran needs comprehensive legal mechanisms to provide special mechanisms for the protection of the northern region's vulnerable environment, and the current few special regulatory on-the-ground rules need to be revised to establish a special robust environmental legal order for this region. These mechanisms are explained in the next section.

Mechanisms of regionalization

The multifaceted environmental matters of the northern provinces of Iran, the demand for more effective protective actions, and the interrelation between environmental and socioeconomic issues denote that there may need to be more appropriate approaches to environmental regulation for the heterogeneous aspects of regional ecosystems of a country. Therefore, the current uniform environmental regulation model is unsuitable for this region's particular circumstances. Then, a degree of regulatory diversification and harmonization in environmental regulation is required to adequately address the regional ecosystems' unique characteristics. Is there any alternative form of environmental regulation to overcome this challenge?

Conventional regulatory systems are based on uniform regulation and do not apply adaptive multi-scale legal instruments to address miscellaneous environmental situations. However, new forms of regulation emphasize harmonization and adaptation more than the earlier forms. Adaptive environmental regulation, consistent with the sustainable development principle, is based on this axiom: the rules should be harmonized with ever-changing environmental and socioeconomic conditions (Ruhl 2005; Frohlich *et al.* 2018). To improve the implementation of regulations, the legal system should authenticate flexible environmental regulations to adopt the rules with different ecological characteristics in light of the general legal order of the country. Adaptive environmental regulation applies specific rules and arrangements harmoniously with the special regional socioeconomic and environmental circumstances. Many regional ecosystems, such as ecoregions, demand adaptive special rules and instruments to be protected according to the region's circumstances. However, devising adaptive rules is just an initial and primary step in regional environmental regulation since these rules are necessary, but more is needed. In addition to adaptive rule-making, regionalization of environmental regulation on a broader scale depends on multilevel and participatory environmental governance, which pursues adequate environmental protection through basic institutional and structural reforms in regulation. Environmental governance is based on better regulation, and a cluster of bases such as participatory dialogue and deliberation, devolved and decentralized multilevel decision-making, and flexibility rather than uniformity (Gunningham 2009) underpin regional environmental governance. Despite the conventional top-down and mono-centric environmental regulation, regional environmental governance considers regional in-the-ground requirements and circumstances more effectively. Hence, the regionalization of environmental regulation is a mechanism for the institutionalization of environmental governance at the eco-regional scale (Balsigera & Debarbieux 2011) through adaptive regional

rules and multilevel and participatory local arrangements for environmental protection (Chaffin *et al.* 2014). With this in mind, regionalization of environmental regulation demands two sorts of mechanisms.

Adaptive regulations

Vulnerable ecosystems in a socio-economically complex region require subtle, responsive, and multi-instrumental regulations for protection. Adopting stringent protective and restorative rules is essential to effectively address the regional ecological circumstances and protect the vulnerable special ecosystems. Due to their susceptible ecological conditions, effective protection of natural ecosystems of the northern provinces demands stringent high environmental standards for exploitation and contamination, rigorous deterrent sanctions for degradation, severe protective mechanisms for natural habitats, requirements for restoration and compensation of the previous degradations, adaptation of agriculture, social and economic sector to probable climate change impacts. The protection of vulnerable ecosystems requires meticulous, resourceful mechanisms. In this regard, Article 187 of the Fifth Development Plan Act (2010) and its executive bylaw (2013) oblige the state to provide an integrated management plan to protect the biodiversity of the susceptible ecosystems. A clear instance of such ecosystems is the northern ecosystems that should be particularly protected under these acts and their bylaws. Based on the proportionality principle, the DOE and its provincial offices should have been authorized to make appropriate decisions and take action for environmental protection in the northern region. However, this functional principle, despite its development in the international and some domestic national legal systems (Peters 2016; Harbo 2010), has not been improved in the environmental law of Iran, and the DOE holds limited powers to take proportional actions for the particular environment of the north region. So, the measures and actions taken are not suitable for the vulnerable ecosystems of this region. According to article 6 (c) of the Act on Protection and Restoration of Environment, the DOE is authorized to "take every appropriate action for protection and restoration of the environment under the laws and respecting for the rights of people." This article and the regulations regarding the environmental issues of the north region mentioned in the second section of this study apply this principle implicitly and can be interpreted in such a way that the DOE legally holds the primary authority to take the required proportional measures for the protection of the environment in this region. Furthermore, according to the proportionality principle, since the law must not impose a disproportionate burden on the right-holder (Möller 2012), environmental regulations can not impose economic or social burdens on the local people unless these burdens have been reimbursed appropriately. Stringent environmental regulations will fail to be implemented without any support from economic and social incentives and facilities. For this, environmental regulation in the northern provinces should be empowered with economic and social support for improved implementation of environmental standards, compensation devices for local communities and businesses to recover the costs of environmental regulations, and green economy instruments such as green industries and waste recycling. Efficient protection of the environment in the northern region requires mitigation of economic and social pressures through various correlated policies for sustainable development. Nonetheless, the present environmental restrictions in the region's north have not been backed by supportive economic and social facilities and incentives. In fact, the regulator imposes restrictions without any ex-ante regulatory economic and social assessment to ensure that the rules are relatively compliant for all. As soon as the regulator poses environmental restrictions in this region, it should provide supportive policies on the other side to facilitate these regulations without any social and economic hurdles or disagreement. For instance, the Council of Ministers' bylaw on the Comprehensive Plan for Protection of the Northern Forests proposed some special compensatory instruments for protecting northern forests, providing fuel for rural households living in the forests, and excluding domestic livestock in the northern forests. However, due to inefficient support and compensation for local communities, such as insufficiency of granted financial facilities and lack of participation, the plan stumbled in its implementation (Azimi & Amiri-Lomar 2008; Mahboobi & Teimouri 2021). In the other case, since there has been an increasing demand for industrial wood in the limited northern forests during the last few years (Azizi 2007), the state has taken some initiatives to conserve the forests by decoupling the wood industries from logging in the forests. The 6th Development Plan Act prohibited logging in forests and charged the Natural Resources and Watershed Management Organization with developing and facilitating wood farming by farmers (Art. 38, f). Although this prohibition is necessary for forest conservation, the Act does not provide enough and certain alternative instruments to log supply for the wood industries of the northern provinces. Despite its several plans for planting and wood farming, this organization could fulfill only 26% of its obligations in the development of wood farming in 2018 due to financial shortfalls (Organization of Plan & Budget 2019); consequently, any stop in log supply chain causes cease in the wood

industries. Indeed, many of these regulations specified for the northern region could not have been implemented effectively due to several factors, such as disharmony, disproportionality, weak administration, and lack of socioeconomic support. These cases clearly denote that good local governance is curtailed in the administrative arrangements and necessitates providing support for environmentally sustainable local development (Shah & Shah 2006).

Institutional empowerment

In regionalization and adaptation of environmental regulation, the best proportional regulations can only be passed and exercised in an appropriate institutional environment. Nowadays, environmental institutions and administrative arrangements play a key role in the functioning of good environmental governance (Widerberg 2016) and, in many ways, have a pivotal contribution to facilitating regional environmental regulations. First, polycentric local governance institutionalizes and facilitates the effective participation of governmental and non-governmental persons in environmental decision-making, implementation, and monitoring. Therefore, the regulatory competencies will not be exclusive to the governmental bodies; the non-governmental ones will be eligible to participate in local environmental co-regulation. Local environmental governance requires appropriate powers; therefore, to govern the local natural resources in a massive land appropriately, sometimes the government must devolve its powers to the local communities and institutions (Berkes 1996). An essential prerequisite to local community participation and oversight in environmental matters is enabling community-based processes of decision-making (Gunningham 2009). With adequate decision-making competencies, the local institutions will be eligible to participate in regional environmental regulation regionalization of environmental regulation which depends on the promotion of self-regulatory capacities and self-empowerment of the local institutions and communities. The fundamental base of this empowerment is the principle of subsidiarity. According to this principle, decisions should be taken at the closest possible level to the regulated subject, especially in environmental administration. The nearest responsible organizations would better administrate the local environmental issues. Then, the supreme organization shall act only if and in so far as the lower organizations cannot sufficiently achieve the objectives of the proposed action. However, this only applies when the lower organizations, i.e., the provincial offices, are authorized with enough power. This principle is entirely related to administrative decentralization and proximity in environmental law. Iran's legal system accepts a degree of administrative decentralization. However, decentralization in environmental protection has not yet developed effectively. The central DOE (Department of Environment) enjoys the leading powers and has exclusive competence over environmental administration at the regional and national levels. Although, according to the directive of the circular (no. 96/28434, 2018) issued by the head of DOE, some of the executive duties of this organization were to be delegated to its provincial units, these delegated powers are not sufficient and determinative to empower the provincial offices of DOE in making necessary adaptive regulations for regional environmental protection. Considering that other provincial organizations deal with ecological issues in the provinces, the provincial offices of DOE need more powers to play a leading role in regional environmental protection. The limited powers of provincial offices of DOE in initiating appropriate regional measures under the development of multiple instruments for environmental protection in the northern region derive mainly from the deficits of the regulatory state in regulating social, economic, and ecological issues. An efficient regulatory state can provide appropriate powers for the regulatory bodies and effective compulsory and non-compulsory regulatory instruments for harmonizing social and economic issues with environmental protection and mitigating environmental problems. Second, local environmental governance increases local public awareness and caution about environmental issues and paves the way for public participation in environmental protection. Local governance boosts vibrant self-governing communities in return for their promise to protect their regional environment (Shah & Shah 2006) and encourages local communities and regulatory bodies to mobilize local collaboration. Third, local environmental governance is a mechanism to mitigate the central government's failures in regional environmental protection, reimburse financial deficits, and mobilize the needed resources. Local communities' interests are usually neglected in environmental regulations, and central officials may not be accurately acquainted with regional matters. Based on these advantages, good local environmental governance enables regional environmental regulation by allowing public participation and awareness-making, inter-institutional collaboration, and proper distribution of regulatory competencies. To this end, nested institutional arrangements for local governance (Shoon & Cox 2018) and a facilitator institutional environment for multilevel environmental governance are needed to let the national and local institutions and communities work together. To

build an enabling environment, local institutions should be empowered in the light of polycentric environmental governance to address the special environmental issues of a region, and their regulatory competencies in environmental protection should be determined based on institutional capabilities and special environmental and socioeconomic features of their located region (Sapat 2004). As mentioned before, despite its crucial importance in the protection of regional ecosystems of the country, the administrative competencies of the local governmental and non-governmental institutions in environmental regulation in Iran need to be more appropriate and adequate to establish a particular regional ecological regulation system. The reigning environmental regulation system needs to employ more effective devices to support the meaningful involvement of local communities in the environmental protection of the regions. Likewise, to enable an effective multilevel and polycentric environmental governance in northern provinces, this region needs to improve institutional dimensions of environmental protection. A meaningful balance should be made between the quality and quantity of the institutions of the north's ecological challenges, threats, powers, and resources. To empower the local environmental governance in this region, some institutional initiatives are demanded:

Increasing local environmental-related institutions' decision-making and executive competencies, especially the discretionary competencies for taking appropriate measures. To respond to rising environmental threats in this region, the administrative competencies of the provincial offices of the DOE should mainly be enhanced. Improving the organizational capacities and resources to take the necessary on-the-ground initiatives for the region's exceptional ecological and socioeconomic circumstances. Modifying and adjusting the reigning environmental regulations to accommodate the special circumstances of the northern region in connection with the other regions of the country. Due to the interconnection of environmental matters in the northern region, defining an ordinary environmental jurisdiction and establishing a regional environmental council empowered with appropriate competencies pave the way for better inter-organizational collaboration among the three provinces. This device has an official precedent in the ecological law of Iran. In contrast, the Council of Ministers previously had established two regional inter-provincial councils in the field of environmental matters (i.e., the Council of Quality Protection of Karun River (2002) and the Council of Quantity Protection of Zayandeh Rud River (2005)). Thus, establishing a regional administrative and collaborative council for the northern region will present no legal obstacles. Empowering the local city councils and especially the provincial councils of this region to undertake more responsibilities for environmental collaboration among the relevant organizations according to their collaborative competencies at hand by amending the Act on the Structure and Duties of the Islamic City and Village Councils and Election of the Mayors (1996). Providing socioeconomic supportive instruments for all activities related to environmental protection in the northern region, such as economic compensation, increasing job opportunities, reimbursement of opportunity costs derived from environmental restrictions, and development of green technologies. The sustainable socioeconomic development of the northern provinces requires a well-designed regional zoning plan based on which social needs, natural potentials, and vulnerabilities can be considered. During the last years, The High Council of Land Zoning approved a special zoning plan for the Golestan (2021) and Mazandaran (2021) provinces in which reconciliation of environmental circumstances and socioeconomic aspects of the provinces has been emphasized. Fig. 1. describes the essential elements of regional environmental regulation for the northern provinces of Iran. Finally, although there is no legal obstacle to the regionalization of environmental regulation for the northern provinces, this process faces some challenges:

The administrative law of Iran does not define the region as an administrative division; rather, it outlines provinces. This creates some coordination problems in the administration of inter-provincial environmental affairs, such as inter-basin rivers. As mentioned before, to solve this problem, the state has established some inter-provincial councils. The central institutions are the main functional participants in environmental administration. They can play an important role in harmonizing regional policies and reducing parochial interests in local units (McBeath & Rosenberg 2006). Thus, one should not ignore their significant standing in the comprehensive environmental protection of the country. The challenge is distributing the responsibilities between the central and local institutions. Environmental governance considers every ecosystem and institution an interconnected unit. Therefore, regions are not separated, independent geographical entities are not accessible, and dividing national and regional ecological matters isn't possible. Adopting special laws and regulations to protect a given region may result in inconveniences and disharmony with national laws and regulations or with the other regions. To prevent this challenge, the Department of the Environment should collaborate to ensure the coherence and orchestration of the regional regulations. Regionalizing environmental regulation may require more competencies, capacities,

technical resources, and professional experts (Bonfiglioli 2004; Wilson 2000). To this end, the institutional structure of the local and regional bodies should be enhanced to empower them in environmental administration. Finally, it is not expected that regionalizing environmental regulation in the northern provinces will be a panacea for the region's dichotomous environmental and socio-economic problems. Rather, it is only a mechanism to enhance the quality of regulations and mitigate their negative socio-economic impacts on the regional scale.

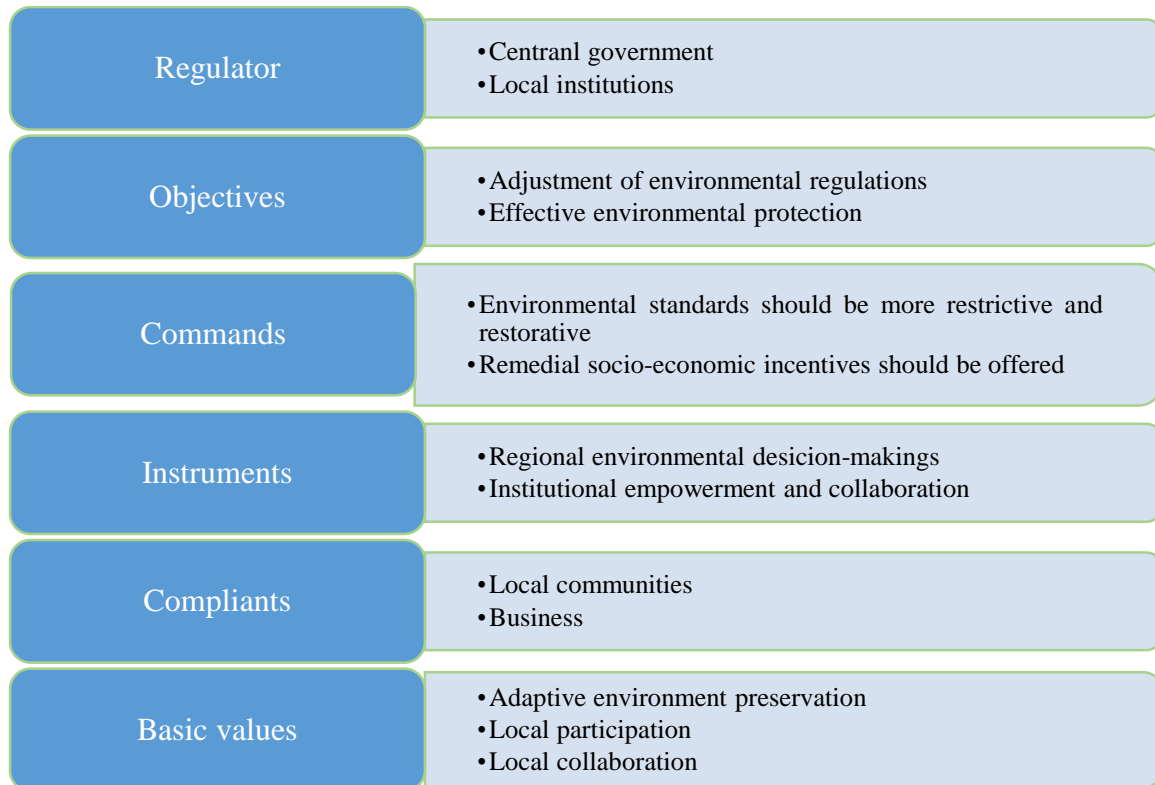


Fig. 1. Elements of regional environmental regulation for the northern provinces.

CONCLUSION

The northern region of Iran is a unique phytogeographical ecoregion, enriched with various outstanding natural ecosystems. This region faces enormous economic and social pressures such as land-use change, degradation, and pollution and requires special protective regulations due to its susceptible ecological conditions. Therefore, several socio-economic and also legal deficits have contributed in a high degree of environmental degradation in this region. One of the main legal deficits that leads to the misimplementation of environmental laws in the north region is lack of proportionality between these laws and especial ecological circumstances in this region. Despite numerous reigning environmental laws and regulations in the legal system of Iran, many of these general legal instruments should be adapted and compatible with the special features and needs of the northern region to be effectively exercised. Since the general environmental regulations in Iran are mostly lenient, soft, and empowered with moderate sanctions, they are inappropriate to resolve the ecological and socio-economic challenges of this region effectively. With respect to the socio-economic demands, to overcome the environmental challenges of the northern region, more stringent and rigorous legal devices are required. These should be facilitated in implementation by socio-economic incentives and backed by local communities. Such a task can not be achieved by the traditional form of environmental regulation; rather a special model of regulation is required in order to cover the ecological and socio-economic characteristics of this region, simultaneously. The proposed model is regional environmental regulation which was defined in this article as a structured regulatory process that enables modification and adjustment of environmental regulation to special ecological and socio-economic circumstances of a region. To apply this model of regulation in the northern region, two sorts of mechanisms are required: taking adapted regulations compatible with the ecological and socio-economic circumstances of the region, and promoting local environmental governance through institutional empowerment, development of discretionary competences based on proportionality and subsidiarity principles and local participation to exercise the regulations

effectively. Adopting such a distinctive regulation model for a region in the legal system of Iran may encounter some challenges at the first step. Regional environmental regulation is not stabilized as a procedure in this legal system of Iran, and the concept of region as an administrative division has yet to be accepted; local non-governmental institutions hold insufficient environmental powers, and the central organizations essentially orient environmental administration. Also new regional environmental regulations may lead to hyper-regulation and conflict among the regulations. Conversely, for other reasons environmental law of Iran is potentially competent to pave the way for regionalization of environmental regulation for the northern region: first, there is essentially no significant deterrent legal obstacle to regionalization of environmental regulation for this region rather, the Act on Protection and Restoration of Environment authorizes the DOE implicitly to take any appropriate action for environmental protection; second the urgent demands for protection vulnerable environment of the northern region are convincing enough to establish a special regulatory system for this region; third, in practice some previously passed regional regulations for environmental protection in legal system of Iran, especially land zoning regulations, indicate that adoption of the other regional regulations is acceptable; fourth, the present local governmental and non-governmental institutions have the necessary preliminary capacities to participate in local environmental governance of this region effectively, only if they are empowered with proper administrative competences. Establishing a regional environmental council can be instrumental in promoting inter-organizational coordination and avoiding duplication and dispersion among the regulatory institutions. Finally, the regionalization of environmental regulation for the northern region is just one solution among the other legal and ultra-legal solutions for mitigating environmental problems in this region. Indeed, efficient regionalizing environmental regulation in the northern region of Iran, utilizing adaptive, stringent, economically modest, and community-based regulations and multilevel and polycentric local environmental governance, will be a great step toward efficient protection of the vulnerable environment of this region.

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