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A multi-level analysis of links between government institutions and community-based conservation: insights from Iran

Razieh Ghayoumi [1], *Anthony Charles* [2] and *Seyed Mohsen Mousavi* [3]

ABSTRACT. Community-based conservation (CBC) is widely recognized as an important strategy (locally, nationally, and internationally) in efforts to conserve biodiversity. This article examines approaches to improve the effectiveness of CBC by resolving tensions between government institutions and local communities, in terms of respective environmental stewardship activities. These tensions are explored in detail within the context of Iran, and specifically how its conservation and protected area policy and practice interact with its history of indigenous and local conservation. A multi-level analysis considers tensions at the national level but also locally, on Qeshm Island, the largest island in the Persian Gulf. The local-level conservation practices of the island reflect its cultural and stewardship traditions, based on reciprocal links of people and nature. Communities on Qeshm Island utilize a range of collective actions to deal with social, economic, and environmental threats, through a multi-faceted approach that includes maintaining traditional practices, initiating culturally-appropriate economic activity, and engaging in conservation efforts, such as those based on sacred species and sites, on coastal community conservation, and on locally-controlled ecotourism. However, tensions arise between these local activities and government initiatives, especially related to economic development, posing a challenge to local-level stewardship and its mutual benefits for ecosystem health and sustainability of livelihoods. There are various possibilities for overcoming these problems and reinforcing community conservation, including through reinforcement of spatial measures, such as community conserved areas.

Key Words: *collective action; community-based conservation; ecotourism; environmental stewardship; protected areas; Qeshm Island*

INTRODUCTION

Community-based conservation (CBC) is a crucial component of global efforts to conserve biodiversity. Participation by local communities and resource users in CBC strategies serves to align the objectives of biodiversity conservation and human well-being (Salerno et al. 2021). In contrary to state control over natural resources, CBC places local people at the center of resource management, often through bottom-up approaches (Baral and Stern 2011).

There have been challenges in defining CBC precisely, not least because it has been applied to a wide range of programs with various goals, governance structures, levels of local decision-making authority, and motivations for community participation in conservation (Ruiz-Mallén et al. 2015). As a result, many broad natural resource management initiatives that enhance the circumstances for coexisting between humans and nature have been described as CBC (Ruiz-Mallén et al. 2015). In reality, CBC is one among many community-centered strategies determined by geographical and political circumstances (Cockerill and Hagerman 2020).

There is widespread support from governments, conceptually at least, for the practice of CBC, i.e., local-level efforts to engage in environmental stewardship. For example, governments of the world have agreed to language in the context of the Convention on Biological Diversity (1993), Article 8(j), stating:

> *Each contracting Party shall, as far as possible and as appropriate... Subject to national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity...*

At the same time, there remains an enduring challenge of ensuring that global targets for conservation and government institutions actually support community-led conservation in practice, and in a manner reflecting the crucial importance of ensuring CBC is in keeping with local customs and values, and with a core focus on sustaining local livelihoods. How is support for CBC to be provided? In what form? To what extent? To whom, exactly? There are significant logistical issues, but there is also a widely felt sense, among local communities, that government support is too limited and not at a level in keeping with the major biodiversity, livelihood, and sustainable development benefits that can come from such community conservation (Armitage et al. 2020, Salerno et al. 2021).

This article reports on a study to investigate the challenges with, and opportunities to strengthen, CBC in Iran. The motivation lies in the need for a comprehensive study on the challenges of CBC and its implementation in that country. The article addresses the CBC situation in Iran and examines the status of Iran's official protected areas and protection practices. It then explores the linking of government institutions and community conservation through a multi-level analysis, looking nationally as well as locally, in particular at the experiences of Qeshm Island, in Hormozgan Province on Iran's southern coast. The paper concludes with an exploration of opportunities for closer future ties, through government-community linkages relating to conservation and sustainable livelihoods, and a potential role of community-based conserved areas in order to promote them.

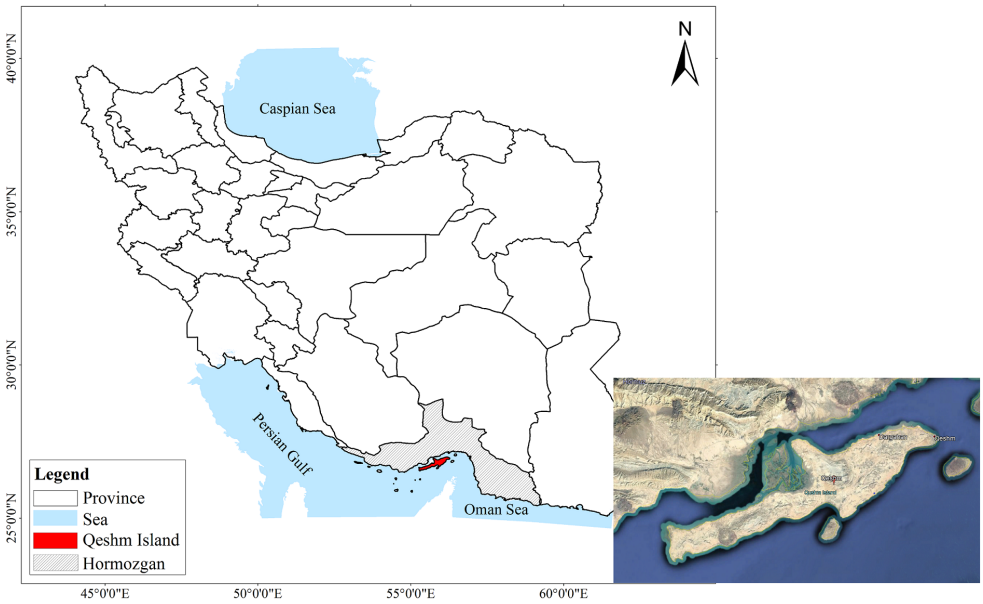
METHODS

Research design

The research methodology reflects the main goals of the research, namely to understand the interactions between government

[1]Research Group of Biodiversity and Biosafety, Research Center for Environment and Sustainable Development (RCESD), Department of Environment, Tehran, Iran, [2]Saint Mary's University, Halifax, Nova Scotia, Canada, [3]Department of Environmental Planning and Design, Shahid Beheshti University, Tehran, Iran

Fig. 1. Hormozgan Province and Qeshm Island.



institutions and CBC, and to explore potential opportunities for closer ties between these, and with sustainable livelihoods. Accordingly, the research strategy adopted was a case study approach, based on qualitative research, considered the most suitable given the nature of the subjective research objectives.

The current study investigates CBC in Iran via a descriptive-applied approach. Additionally, it undertakes a policy analysis in investigating national and local policies and procedures of the government for environmental conservation. The study also investigates the obstacles involved through multi-level analysis based on reviewing previous studies, field surveying, consulting experts, and informal interviewing of local stakeholders. Finally, the study examines the connection between governmental efforts of environmental protection on the one hand and the local community's interests (see below) on the other hand.

Study area

Qeshm Island, the largest island in the Persian Gulf, lies on Iran's southern coast in Hormozgan province (Fig. 1; Mohammadi Mazraeh and Pazhouhanfar 2018). The island, about 130 km long and 11–35 km wide (United Nations Educational, Scientific and Cultural Organization [UNESCO] World Heritage Centre 2007), has a population of 148,993 (Islamic Republic of Iran 2016a) who speak the Pahlavi dialect (Farsani et al. 2012). This island has a desert climate with long hot summers, short mild winters, and a humid climate along the coast to about 30 km inland (Mahmoudof et al. 2011). The main livelihood activities are fishing, trade, maritime transport, and tourism. This region attracts thousands of tourists each year because of its historical significance, the presence of mangrove forests, turtle hatchery sites, coral reefs, marine creatures, and a variety of ecological features.

Qeshm Island provides an excellent site to explore the interactions between government institutions and CBC, given the major influence on the island of both national and regional government mechanisms and processes (described below) as well as the demonstrated willingness of local community members to cooperate with the study, important information provided by the island's Free Zone and other officials, and certain objective environmental and conservation realities (e.g., turtle nesting sites, extent of conservation activities).

A further benefit of Qeshm Island as a study site is the senior author's knowledge of and involvement with the island: more than 10 years of experience in the region through work in the Marine Division of the Department of Environment. This is complemented by considerable experience and expertise of the authors in international research in the fields of community conservation, community governance of social-ecological systems, and environmental science, all of which have helped in the verification of information used in this study.

Data collection

The primary data used in this study were gathered mostly from participant observation and semi-structured interviews. This was compiled through the course of work by the first author, who was engaged in ethnographic research in Qeshm Island over a two-year period from 2017 to 2019. Participants were chosen mostly through snowball sampling, a desirable approach given the lack of random sampling; this is considered as a suitably interactive and responsive way to reach the desired community (Atkinson and Flint 2001). The sample group consisted of members and leaders of villages, together with local fishermen, Free Zone staff, local and federal government staff, and leaders of nongovernmental organizations (NGOs; Table 1). Primary data were complemented by secondary data sources, including reports and documents from government organizations, the Majlis Research Center, NGOs, and international reports, etc.

Table 1. Interview distribution and composition.

Number	Category
3	Village governors
5	Village council members
3	Qeshm Free Zone staff, Environment Office
3	Staff of Cultural Heritage, Handicrafts, and Tourism of Qeshm Free Zone
3	Local fishermen
3	Local women producing handicrafts
2	Staff of Department of Environment Office, Qeshm Island
2	Officers of Department of Environment, Hormozgan Province
4	Officers of Department of Environment, Tehran
2	NGO members

RESULTS

Communities and conservation in Iran

Indigenous peoples and local communities in Iran have a long history of conservation practice, tied together with strong governance over lands and resources (Naghizadeh et al. 2012). For example, Iran's nomadic peoples have displayed unique characteristics relating to sustainable resource use, territory-based conservation, and self-reliance, often producing products that are organic and recyclable (Afsharzadeh and Papzan 2012, Karimian et al. 2015).

Today, there are many forms by which indigenous groups and local communities engage in conservation in Iran across a diversity of ecosystems, including wetlands, marine and coastal areas, rangeland, grassland, forest and desert (United Nations Development Programme [UNDP], Global Environment Facility [GEF], and Small Grants Programme [SGP] n.d.). Naghizadeh et al. (2012) refer to these areas as "the very heart of indigenous and traditional knowledge and revival of cultural and social values" and as "the main testimony for promoting and reviving strong social governance and management systems over IP territories and traditional communities' areas and territories as well as their natural resources." Survival of ecosystems and threatened species has depended on these areas, as has livelihood security for indigenous groups and local communities "through farming, livestock keeping, fishing, tourism, dairy produce etc." (UNDP/GEF/SGP n.d.).

Decision making regarding these conserved areas has shifted over time. Past practices typically involved tribal chiefs, councils of elders, and community leaders making decisions over specific resources, applying traditional rules for which often no written documents existed. This structure also supported cultural continuity, because the elders and those with related skills were able to support the survival of traditional customs and rules. Now, although this structure still stands in some places, according to article seven of Iran's constitution, decision making in most communities is in the hands of elected village councils (Imani Jajarmi and Karimi 2010, Alekajbaf 2014).

Some indigenous and community conservation practiced in the past in Iran is no longer present today, whereas other practices have survived, for a variety of reasons, such as strong local traditional/religious beliefs, or an unattractive climate for investment and development activities, which indirectly helped in avoiding negative impacts. Examples of these will be described below.

The same mix of lost and enduring practices may be seen locally on Qeshm Island. Notably, the island has a number of sacred species and sites. Among the sacred species is the Sacred Fig Tree (local names: Loor or Lool), which has a deep connection to indigenous life and culture. This is a large tree that is respected for the shade it provides, which is very important in hot weather. Individual trees are sometimes named for a nearby village or region, and some may be seen as "Wish Trees" that are considered to grant people their wishes (Negahban and Jamadi 2012, Nikbin and Karami 2012). In terms of sacred sites, Tala or Tela (Tel+a = "mass of water") wells and some trees around them in Laft Historical Port are sacred. Although there are now around 100 of these wells (Dashtizadeh 2012), it is said that in the past there were 366 wells, with each having a specific name, and with each used on only a single day of the year (Dashtizadeh 2012, Yazdi 2013). A female Mirab (water guardian, or water master) carried out traditional water management (Dashtizadeh 2012), reflecting the importance of effective water use to ensure sustainable use of natural resources. Although the number of these wells has decreased because of storms and earthquakes, a decrease in water resources (likely as a result of climate change), and cultural changes in water uses (notably the modernization of lifestyles and consumption patterns), the use of wells by local people is still found in the island.

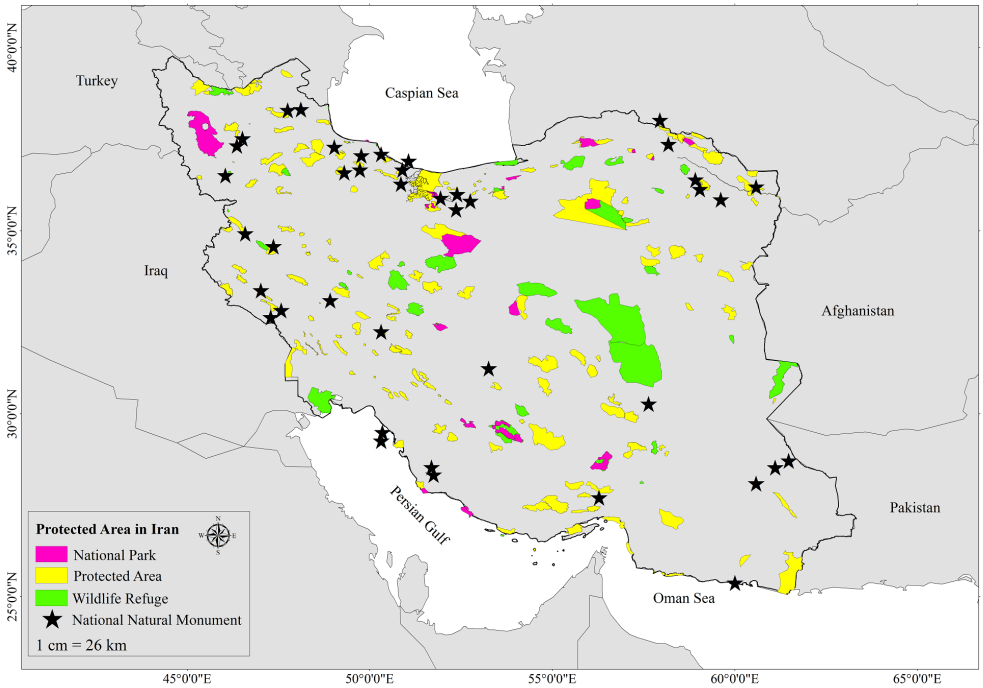
These enduring practices of indigenous and community conservation in Iran today face a range of threats. These threats include the lack of formal recognition by government (see below), ecosystem degradation, shifting land use, unsustainable tourism, and climate change (Naghizadeh et al. 2012, Kolahi et al. 2014a). Such threats will be addressed later in this article.

Iran's governmental conservation: policy and institution

Official environmental protection also has a long history in Iran. There is evidence that Iran may be home to the first protected forest area in the world, which the evidence indicates was established in about 500 B.C. by Persian king Xerxes (Kolahi et al. 2012). Over the past century, governmental institutions began with the Iranian Centre of Hunting, founded in 1956 (Darvishsefat et al. 2008, Islamic Republic of Iran 2010), which, following the ratification of the Hunting and Fishing Act in 1967, was renamed the Iranian Center for Hunting and Fishing, with goals including conservation and protected areas (Darvishsefat et al. 2008). In 1974, the body was converted to the Department of Environment (Islamic Republic of Iran 2010, Kolahi et al. 2012). Environmental protection is referred to in the Constitution of Iran, notably Article 50 (Papan-Matin 2014).

Iran has a number of legislative and regulatory tools for conservation, including planning and coordination of natural resource programs, criminalizing environmentally destructive behavior, and developing a green economy (Jahangard 2016). There are also government policies meant to facilitate participation of indigenous people and local communities in conservation plans and sustainable development measures (Naghizadeh et al. 2012, Yazdi 2013). For example, in 2017, legislation was revised on land distribution to local-level peasants in the context of land resources allocation (no. 2626/020, Ministry of Jihad-e-Agriculture; Moaddel 1991, Ashtiani 2017). Recent

Fig. 2. Iran's protected areas.



national development plans refer to the roles of participatory conservation and strengthening local management in ecosystem-based management, natural resource management, and sustainable development broadly (Islamic Republic of Iran 2017). The themes of supporting indigenous cultures, empowering communities, and partnering with communities in developing management plans are also raised in, for example, work of the Ministry of Cultural Heritage, Handicrafts and Tourism (Majlis Research Center 2012), the Department of Environment, and the Forests, Rangelands and Watershed Management Organization (Islamic Republic of Iran 2010, Majlis Research Center 2011, Islamic Republic of Iran 2016b).

Environmental regulation includes protected areas (PAs; Darvishsefat et al. 2008, Dudley 2008, Makhdoum 2008, Islamic Republic of Iran 2010), with 284 such areas in Iran, summing to over 17.7 million hectares (Islamic Republic of Iran 2016c). Figure 2 shows locations and numbers of Iranian PAs. In addition, there are many designated areas where hunting is prohibited, as well as 13 biosphere reserves and 35 international wetlands (24 Ramsar sites; Ramsar Convention on Wetlands n.d., UNESCO 2015, Isfahan-doe 2020). Governance of PAs, Ramsar sites, and biosphere reserves is under the responsibility of the state (Islamic Republic of Iran 2012a, Islamic Republic of Iran 2016b). Along the lines noted above, Iran's protected areas plan pledges that people and local communities will be involved in decision making, in benefit sharing, and in using their knowledge in managing PAs (Islamic Republic of Iran 2012a).

Whereas the above policy and legislative materials support CBC in Iran, some government measures over the 20th century actually undermined governance and conservation efforts by Iran's indigenous peoples and local communities (Kolahi et al. 2014b), negatively affecting "the structures of nomadic tribal society and livelihood systems." Despite this, "the governance systems of these indigenous peoples and local traditional communities have managed to resist and persist to this day" (Naghizadeh et al. 2012).

Looking locally, at Qeshm Island, official governmental protected areas include, for example, the Harra Protected Area in the northern coast of Qeshm, a biosphere reserve that is covered by mangrove forests, notably the largest Avicennia species mangrove in the Persian Gulf. Local people use branches and leaves of mangroves for feeding their herds, usually camels and goats (Dehghani et al. 2010, Esmaeili and Paroon 2010). Another example is Qeshm Geopark, which was designated by UNESCO in 2006 as a member of the Global Geoparks Network (GGN), the only Geo-Park in the Middle East at the time (Global Geopark Network n.d., Sharifi 2017). The designation was lost in 2013 as a result of inappropriate management (World Cultural Heritage Voices 2013), but in 2017 it received again the label for a period of four years by the UNESCO Global Geopark (UNESCO 2017, Sharifi 2017).

Analysis: government-community tensions and trends

Qeshm Island provides insights on the tensions in Iran between government and community. On the one hand, its people have strong stewardship motivations, through (1) a strong connection to the land and sea, with a sense of belonging to their environment; (2) an understanding that traditional conservation has a positive effect on their lives; and (3) spiritual, social, cultural, and livelihood drivers to conserve their environment and biodiversity (Mashayekhi et al. 2017, Ghayoumi and Charles 2018,

Mohammadi Mazraeh and Pazhouhanfar 2018). The local people see the potential to apply their traditional knowledge and tradition of cooperative approaches to meet conservation goals, notably relating to primary livelihood activities of fishing, trade, maritime transport, and tourism. There are opportunities, as well, to motivate young people on the island, based on the leadership shown by the local elders. Partly as a result of these motivations, Qeshm Island has considerable experience with conservation involvement, described below.

On the other hand, tensions arise over government policies that affect the environmental state of Qeshm Island. Here, we consider three examples.

First, the fact that the island was declared a Free Zone in 1991 has effects beyond attracting investors and economic and tourism activities. This produces tensions between organizations, economic sectors, and people, as well as cultural and environmental impacts (Duchaine et al. 2010, Zakeri and Esfandiari Kaloukan 2016). There can be conflicts between the Free Zone in Qeshm (QFZ), which is almost an independent entity (Pak and Majd 2011), and the local government, in implementing policies. For marine conservation, for example, "coastal waters up to 500 m off the mainland are considered part of the sanctuary of free zones" (Petro Energy Information Network 2004), a situation which can affect local-level management initiatives. Broader problems can arise from lack of recognition of local communities by the national government and the QFZ.

Second, over the past several decades, tensions have arisen over substantial land use changes, driven particularly by major human and natural factors. One of these is immigration to the island, including those engaged with the Free Zone and the organizations based there as well as those coming for other industry or mining activity. Other tensions relate to the economy, investments, and drought (Kourosh Niya et al. 2019).

Third, the growth of tourism, attracted by many features of Qeshm Island, produces tensions as well as major opportunities. From a historical perspective, according to Cassells Bible, Qeshm Island may have great significance as a possible location of the Garden of Eden (Duchaine et al. 2010). In terms of ecological and ecotourism attractions, there is a rich variety of mangrove forests, turtle hatchery sites, coral reefs, marine mammals, and a diversity of geographical phenomena. Thousands of tourists travel to Qeshm Island every year, attracted by its natural features, historical places, beaches, and shopping.

The increasing numbers of tourists have led to increasing involvement of local people in tourism activities, drawing on the natural attractions of the island, creating a form of tourism that fits with their culture and maintains their livelihoods. This includes engaging in such ecotourism activities as guiding tourists to observe dolphins and turtle nesting sites; visiting coral reefs; offering both nature and historical tours combined with local food in a local house; and the selling of handicrafts, especially by local women undertaking needlework and henna painting (Zahmatkesh et al. 2015).

These activities produce a combination of economic, social, and environmental benefits. First, communities have a sense of integrity and identity through tourism, because tourists come to the island in part because of community traditions. Second, local people recognize the interests of visitors in seeing the natural attributes of the island and how this provides economic value to the local community. This provides a local incentive to participate in conservation activities, and this direct participation seems to lead to a greater level of concern for the local territory.

That said, the combination of cultural and environmental aspects creates both a need and an incentive for conservation. While tourism potential is not fully realized (Fakouhi 2006), a lack of tourism infrastructure in rural parts of Qeshm Island limits the number of visitors, the motivation of local people to be involved in tourism, and ultimately tourism's economic benefits.

DISCUSSION

Toward the future

Tensions between governmental and community-led conservation activities and initiatives can arise in many different ways around the world. This is an enduring challenge, one that has been examined in this paper within the novel context of Iran. The conservation of biodiversity is important in Iran, the second largest country in the Middle East and 18th largest in the world. Its high levels of diversity in climate and habitats lead to high levels of biodiversity (Kolahi et al. 2012). Diversity is also an important element of the people, with many ethnicities and cultures and more than 75 languages and dialects (Khanlari 1979, Islamic Republic of Iran 2012b, Ghanbari and Rahimian 2020).

In approaching the challenge of moving to closer ties between governmental and community-led conservation, Qeshm Island provides some lessons. Consider the various ocean conservation activities around the island, building on traditional cultural practices but combining with higher-level initiatives. Two examples are described here.

First, in Salakh village, on the south coast of the island, local people celebrate the Fisherman's Nowruz ("Nowruz-e Sayyad") in late July each year, considered the "new year" for the fishery. Fishing stops and no seafood is eaten on this day, reflecting a belief that fish resources need a break from exploitation to allow for reproduction. This community conservation effort is combined with swimming in the sea for health, preparing traditional foods, and traditional music and dance (Besharati 2017, Bakhtiari 2021). These practices are combined with funded marine conservation programs, including some supported by the GEF and involving voluntary community participation in conservation and restoration projects.

The participation of Qeshm people in GEF conservation programs shows that NGOs can be a link between the government and the local community. This reflects the case described by Baral and Stern (2011) in which two CBC models in Nepal were compared, finding that NGOs out-performed government agencies as a result of building trust, creating a positive mindset, and increasing living conditions (Baral and Stern 2011).

Second, consider a multi-level conservation initiative for Hawksbill Sea turtles, carried out in Shibderaz Village. This is a collaboration of the village council and the Qeshm Free Zone, with the declaration of around 25 km of the south coast as a breeding and hatchery area and involving local people patrolling, tagging turtles, collecting eggs to transfer them to special safe sites, and engaging in public education. There are also ecotourism

activities (UNDP/GEF/SGP n.d., UNDP/GEF/SGP 2003) in which local women sell handicrafts with symbols of sea turtles to tourists, and conservation activities in the Salakh community in which new habitat for fish is created by local people dropping old furniture into the sea to form an artificial reef (UNDP/GEF/SGP 2005).

These initiatives demonstrate the capability of communities to work at multiple levels and, with external funding, to take on conservation actions. Because of the uniqueness of each community in terms of needs, experiences, and resources, capacity varies from place to place, as does the location-specific diversity (Quiroz-Ibarra et al. 2020).

These examples reflect the strong local motivations for conservation on Qeshm Island, coming from a sense of belonging to the island, local spiritual and social values, and livelihood needs. In addition, from a social perspective, two decades after the creation of a free zone in Qeshm Island, the local people are demonstrating resilience to the many changes they have faced, engaging in efforts to maintain their traditions through innovation. One avenue they have found for this, in conjunction with meeting conservation goals, is to strengthen tourism activities that directly contribute to people's livelihood and increase their motivation to preserve natural resources.

The potential of tourism in this regard is in keeping with the study of Yergeau (2020), a multi-level analysis of Nepal's protected areas. That study demonstrated how the increase in tourism activities and the subsequent increase in the welfare of the local community have led to greater protection of natural resources. That study, as with many others, concluded with a recommendation that governments ensure local community involvement in tourism development in order to increase conservation. At the same time, some research suggests that material benefits should not be the only focus of conservation (Robinson and Sasu 2013), although overall it seems that the local community's economic interests significantly influence the success of CBC (Galvin et al. 2018).

At the core of CBC success is an understanding of the nature of communities, together with culture, rights, and economic interests (Mugisha and Jacobson 2004, Balint 2006, Waylen et al. 2010, Armitage et al. 2020). Furthermore, because local communities often face challenges to their livelihoods (Ribeiro et al. 2020), it is important for government to pay attention to sustainable community livelihoods within all community-oriented conservation programs.

One direction that seems promising for the future, given the Iranian government's interest in official protected areas and the people's experience with sacred sites, is the development of further area-based conservation measures, perhaps jointly by the people of Qeshm and the Iranian government. This could be through a system of community-based conserved areas, whether inland, coastal, or marine.

Indeed, there has been some examination of "Indigenous and Community Conserved Areas" (ICCAs) in the Iranian context, reflecting a merging of protected area thinking and local-level community conservation (Borrini-Feyerabend and Kothari 2008, Kolahi et al. 2012). These officially-recognized but community-based conserved areas could, with suitable support, contribute to environmental conservation and sustainable livelihoods. These could incorporate research, monitoring, and education as well as consideration of cultural issues and indigenous resource use, the combining of which will bring more success (Şekercioğlu 2012). Implementing such areas would require attention to dealing with threats to the community, challenges in defining a governance regime, and the need for incorporating traditional knowledge and practices into protected area management. Qeshm Island reflects two of the three major features identified as needed for community conserved areas (Borrini-Feyerabend and Kothari 2008). There is a close relationship of the people and the local ecosystems and species, and the history of CBC on the island is one of successful conservation of "habitats, species, ecological services and associated cultural values."

However, the third main feature considered to be a requirement for community conserved areas (Borrini-Feyerabend and Kothari 2008), "primary decision-making is with the communiti(es)," is not yet in place. In other words, although the communities are often active in conservation and in discussions of economic development, the implementation of community decision making has not kept pace with other forms of involvement. The impediments to progress on this front, to decision making truly sitting within the community, arise across various dimensions.

First, at a local level, there is often a lack of trust between outside "experts" and local people, with the latter tending not to believe that protection measures proposed by government representatives and NGOs are truly effective. There can also be local governance gaps, in the sense that village council members, usually influential people, may have personal interests that interfere with the flow of communications and the holding of meetings between local people and governmental and NGOs.

Second, although influences of the Convention on Biological Diversity may affect the Iranian government's approach to indigenous peoples and local communities, there is a substantial number of barriers relating to governance processes and structures:

- Because some decisions are provincial and some are federal, some work does not proceed, or takes considerable time, or fails to produce suitable outputs.
- Limitations on government communications, and tensions between governments and NGOs, can lead to an inability to engage well between government and local communities.
- The tension between different government organizations can lead to poor meeting outcomes or even the collapse of meetings.
- Financial constraints can limit the ability to hold community meetings or to properly engage between government and local people.

Third, it is crucial to properly engage and involve certain segments of the community, such as village council members, village governors, and local women handicraft entrepreneurs. It is particularly important to facilitate self-representation of those community members most impacted by decision making.

Fourth, there are concerns over inadequate security of tenure over lands, waters, and resources on Qeshm Island (e.g., permission to

access local resources, such as the mangrove forest and fish resources, can be difficult to obtain) and there are no formal arrangements for protected areas, in particular, to be managed by or with indigenous peoples or local communities (cf. Borrini-Feyerabend et al. 2010, Calamia et al. 2010, Kothari et al. 2013).

To address the above impediments, by locating decision making more deliberately within the community and empowering communities for conservation, this study suggests several potential pathways for Iran, including:

- *Engaging with the private sector*. The private sector has an important role to play in complementing public sector investment to ensure conservation success. This might include partnerships between the government, local people, and the private sector, and supporting greater access to investment for private sector to support conservation.
- *Collaboration and communication*. Encouraging open communication and collaboration is essential, for example through sharing information, coordinating strategies, and building partnerships to achieve common goals.
- *Clear guidelines and policies*. Clarity is important in setting standards for environmental protection, defining conservation areas, and outlining specific strategies for conservation.
- *Continuous evaluation and improvement.* This step involves monitoring the impact of conservation initiatives, identifying areas where improvements can be made, and making adjustments to policies and strategies as needed.

Looking at the bigger picture of CBC, the multi-level analysis in this article has illustrated lessons from the Iranian context that are broadly applicable. In particular, the interface of government and community, at the center of the discussion in Iran, is also key globally, with barriers to face but also ingredients for success. There is a role here to draw on knowledge coming from social and development sciences as well as the environmental conservation field (Waylen et al. 2010). Throughout this, there is a clear imperative to involve local people in the conservation of social-ecological systems. This ties together existing local motivations with supportive legislation, reflecting a reality that formal governmental recognition and support for traditional local authority and tenure can be ingredients of success (Berkes 2009, Kothari et al. 2012). In this way, local people and communities can build on a history of conservation to move toward sustainability, in tune with livelihood and culture.

Author Contributions:

Razieh Ghayoumi, Anthony Charles, and Seyed Mohsen Mousavi conceptualized and wrote the manuscript. All authors read and approved the final manuscript.

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Data Availability:

Data/code sharing is not applicable. Parameters for qualitative data are reported within the manuscript.

LITERATURE CITED

Afsharzadeh, N., and A. Papzan. 2012. Women's indigenous knowledge in sustainable development of agriculture. Women in Development and Politics (Women's Research) (9)4:115-133.

Alekajbaf, H. 2014. Roles and responsibilities of local governments (councils) in Iran: analytical underpinnings. Research Journal of Recent Sciences 3(9):94-101. http://www.isca.me/rjrs/archive/v3/i9/16.ISCA-RJRS-2013-795.php

Armitage, D., P. Mbatha, E.-K. Muhl, W. Rice, and M. Sowman. 2020. Governance principles for community-centered conservation in the post-2020 global biodiversity framework. Conservation Science and Practice 2(2):e160. https://doi.org/10.1111/csp2.160

Ashtiani, M. 2017. Criteria for assigning national and state land for agricultural and non-agricultural projects. Ministry of Jihad-e Agriculture, Land Affairs Organization. (In Persian.) Shadrang Publication, Tehran, Iran.

Atkinson, R., and J. Flint. 2001. Accessing hidden and hard-to-reach populations: snowball research strategies. Social Research Update 33(1):1-4.

Bakhtiari, P. 2021. Nowruz Sayyad: a new day for the prey and the hunter. https://surfiran.com/nowruz-sayyad-a-new-day-for-the-prey-and-the-hunter/#:~:text=Nowruz%20Sayyad%2C%20which%20literally%20means,day%20by%20swimming%20in%20seawater

Balint, P. J. 2006. Improving community-based conservation near protected areas: the importance of development variables. Environmental Management 38:137-148. https://doi.org/10.1007/s00267-005-0100-y

Baral, N., and M. J. Stern. 2011. A comparative study of two community-based conservation models in Nepal. Biodiversity and Conservation 20:2407-2426. https://doi.org/10.1007/s10531-011-9993-3

Berkes, F. 2009. Community conserved areas: policy issues in historic and contemporary context. Conservation Letters 2 (1):20-25. https://doi.org/10.1111/j.1755-263X.2008.00040.x

Besharati, A. 2017. Nowruz-e Sayyad day in Qeshm. http://en.mehrnews.com/photo/126700

Borrini-Feyerabend, G., and A. Kothari. 2008. Recognizing and supporting indigenous and community conservation—ideas and experiences from the grassroots. IUCN CEESP briefing note no. 9. http://iccaconsortium.org/wp-content/uploads/2015/08/publication-ceesp-briefing-note-9-iccas.pdf

Borrini-Feyerabend, G., A. Kothari, J. Alcom, C. Amaya, L. Bo, J. Campese, M. Carroll, et al. 2010. Strengthening what works: recognising and supporting the conservation achievements of indigenous peoples and local communities. IUCN CEESP briefing note 10. https://portals.iucn.org/library/node/9672

Calamia, M. A., D. I. Kline, S. Kago, K. Donovan, S. Dulunaqio, T. Tabaleka, and B. G. Mitchell. 2010. Marine-based community conserved areas in Fiji: an example of indigenous governance and partnership. In K. Walker, A. B. Rylands, A. Woofter, and C. Hughes, editors. Indigenous peoples and conservation: from rights to resource management. Conservation International, Arlington, Virginia, USA.

Cockerill, K. A., and S. M. Hagerman. 2020. Historical insights for understanding the emergence of community-based conservation in Kenya: international agendas, colonial legacies, and contested worldviews. Ecology and Society 25(2):15. https://doi.org/10.5751/ES-11409-250215

Convention on Biological Diversity. 1993. Article 8(j) - traditional knowledge, innovations and practices. https://www.cbd.int/traditional/

Darvishsefat, A. A., A. Khosravi, and A. Borzuii. 2008. The concept of the national atlas of protected areas of Iran and its realization. TS 8H-GIS in Environmental Management. Integrating Generations, Stockholm, Sweden. https://fig.net/pub/fig2008/papers/ts08h/ts08h_03_darvishsefat_etal_2766.pdf

Dashtizadeh, A. 2012. Qeshm; heritage of the Persian Gulf. Cultural heritage, handicrafts and tourism organization, Qeshm Free Zone Organization. (In Persian.)

Dehghani, M., P. Farshchi, A. Danekar, and M. Karami. 2010. The recreational valuation of mangrove forests in Hara protected area using travel cost method (TCM). Journal of Wood and Forest Science and Technology 17(1):33-48. (In Persian with English abstract.) http://jwfst.gau.ac.ir/article_171_49a1809416fb72ddbd25b04623028cb1.pdf

Duchaine, J., H. Hughes, A. L. Flippin, and S. Murphy. 2010. Frommer's 500 extraordinary islands. Wiley, Hoboken, New Jersey, USA.

Dudley, N., editor. 2008. Guidelines for applying protected area management categories. IUCN, Gland, Switzerland. https://doi.org/10.2305/IUCN.CH.2008.PAPS.2.en

Esmaeili, A., and S. Paroon. 2010. Market valuation of mangrove forest in Qeshm Island Protected Area. Agricultural Economics 4(2):131-147. (In Persian with English abstract.) http://www.iranianjae.ir/article_9762_en.html

Fakouhi, N. 2006. National, communitarian and ethnic cultures and the industrial economic market in Iran. Iranian Journal of Sociology 7(1):126-148. (In Persian with English abstract.)

Farsani, N. T., C. Coelho, and C. Costa. 2012. Geotourism and geoparks as gateways to socio-cultural sustainability in Qeshm rural areas, Iran. Asia Pacific Journal of Tourism Research 17 (1):30-48. https://doi.org/10.1080/10941665.2011.610145

Galvin, K. A., T. A. Beeton, and M. W. Luizza. 2018. African community-based conservation: a systematic review of social and ecological outcomes. Ecology and Society 23(3):39. https://doi.org/10.5751/ES-10217-230339

Ghanbari, H., and M. Rahimian. 2020. Persian language dominance and the loss of minority languages in Iran. Open Journal of Social Sciences 8(11):8-18. https://doi.org/10.4236/jss.2020.811002

Ghayoumi, R., and A. Charles. 2018. Qeshm Island, southern Iran: community-led conservation and ecotourism. Community Conservation Research Network. https://www.communityconservation.net/qeshm-island-southern-iran

Global Geopark Network. n.d. Qeshm Island UNESCO Global Geopark. http://www.globalgeopark.org/GeoparkMap/geoparks/Iran/12543.htm

Imani Jajarmi, H., and A. R. Karimi. 2010. Social challenges of Islamic village councils in local management in Iran. Community Development (Rural and Urban Communities) 1(1). (In Persian with English abstract.) https://jrd.ut.ac.ir/article_20816.html?lang=en

Isfahan-doe. 2020. No-hunting areas. (In Persian.) http://isfahan-doe.ir/page-default/fa/0/form/pId23

Islamic Republic of Iran. 2010. Fourth national report to the convention on biological diversity. Department of Environment. http://cbd.int/doc/world/ir/ir-nr-04-en.pdf

Islamic Republic of Iran. 2012b. Iran statistical yearbook 2015–2016 (1394). 3. Population. Statistical Centre of Iran. https://amar.org.ir/english/Iran-Statistical-Yearbook/Statistical-Yearbook-2015-2016

Islamic Republic of Iran. 2012a. Action plan for implementing the programme of work on protected areas of the Convention on Biological Diversity. https://cbd.int/doc/world/ir/ir-nbsap-powpa-en.pdf

Islamic Republic of Iran. 2016a. CN95_HouseholdPopulationVillage_22. (Hormozgan Province). Statistical Centre of Iran. https://www.amar.org.ir/Portals/0/census/1395/results/abadi/CN95_HouseholdPopulationVillage_22_r.xlsx

Islamic Republic of Iran. 2016c. Protected areas list, natural environment and biodiversity division. Department of Environment.

Islamic Republic of Iran. 2016b. Revised national biodiversity strategies and action plan (NBSAP2) 2016-2030. Department of Environment. https://www.cbd.int/doc/world/ir/ir-nbsap-v2-en.pdf

Islamic Republic of Iran. 2017. The Sixth Development Plan. (In Persian.)

Jahangard, E. 2016. Development plans and the environment in Iran. Environmental Economics and Natural Resources Journal 1(2):105-142. (In Persian with English abstract.) https://doi.org/10.22054/EENR.2016.8409

Karimian, V., M. Safaei, and S. H. Matinkhah. 2015. Using indigenous knowledge of nomadic people as a suitable guidance for optimal management in forest natural ecosystems. Journal of Wood and Forest Science and Technology 21 (4):95-114. (In Persian with English abstract.) http://jwfst.gau.ac.ir/article_2104.html

Khanlari, P. N. 1979. A history of the Persian language. Sterling Publishers, New Delhi, India.

Kolahi, M., K. Moriya, T. Sakai, E. Khosrojerdi, and V. Etemad. 2014b. Introduction of participatory conservation in Iran: case

study of the rural communities' perspectives in Khojir National Park. International Journal of Environmental Research 8 (4):913-930.

Kolahi, M., T. Sakai, K. Moriya, and M. F. Makhdoum. 2012. Challenges to the future development of Iran's protected areas system. Environmental Management 50:750-765. https://doi.org/10.1007/s00267-012-9895-5

Kolahi, M., T. Sakai, K. Moriya, M. Yoshikawa, E. Khosrojerdi, and R. Esmaili. 2014a. From paper parks to real conservations: case study of social capital in Iran's biodiversity conservation. International Journal of Environmental Research 8(1):101-114.

Kothari, A., P. Camill, and J. Brown. 2013. Conservation as if people also mattered: policy and practice of community-based conservation. Conservation and Society 11(1):1-15. https://doi.org/10.4103/0972-4923.110937

Kothari, A., C. Corrigan, H. Jonas, A. Neumann, and H. Shrumm, editors. 2012. Recognising and supporting territories and areas conserved by indigenous peoples and local communities: global overview and national case studies. Technical Series no. 64. Secretariat of the Convention on Biological Diversity, ICCA Consortium, Kalpavriksh, and Natural Justice, Montreal, Quebec, Canada. https://www.cbd.int/doc/publications/cbd-ts-64-en.pdf

Kourosh Niya, A., J. Huang, H. Karimi, H. Keshtkar, and B. Naimi. 2019. Use of intensity analysis to characterize land use/cover change in the biggest island of Persian Gulf, Qeshm Island, Iran. Sustainability 11(16):4396. https://doi.org/10.3390/su11164396

Mahmoudof, M., V. Chegini, and N. Montazeri. 2011. Three-dimensional simulation of Qeshm channel currents. Journal of the Persian Gulf 2(3):9-16. http://jpg.inio.ac.ir/article-1-14-fa.html

Majlis Research Center. 2011. Decision on executive package of DOE in the Fifth Development Plan (2011-2015) (Declaration No. 155653). (In Persian.)

Majlis Research Center. 2012. Decision on executive package of Ministry of Cultural Heritage, Handcrafts and Tourism Organization in the Fifth Development Plan (2011-2015) (Declaration No. 155767). (In Persian.)

Makhdoum, M. F. 2008. Management of protected areas and conservation of biodiversity in Iran. International Journal of Environmental Studies 65(4):563-585. https://doi.org/10.1080/00207230802245898

Mashayekhi, Z., G. A. Sharzehi, A. Danehkar, and V. Majed. 2017. Estimating the local cost of conservation: a choice modeling approach for eliciting willingness to accept compensation. Journal of Forest and Wood Products 70(1):71-81. (In Persian with English abstract.)

Moaddel, M. 1991. Class struggle in post-revolutionary Iran. International Journal of Middle East Studies 23(3):317-343. https://doi.org/10.1017/S0020743800056324

Mohammadi Mazraeh, H., and M. Pazhouhanfar 2018. Effects of vernacular architecture structure on urban sustainability case study: Qeshm Island, Iran. Frontiers of Architectural Research 7(1):11-24. https://doi.org/10.1016/j.foar.2017.06.006

Mugisha, A. R., and S. K. Jacobson. 2004. Threat reduction assessment of conventional and community-based conservation approaches to managing protected areas in Uganda. Environmental Conservation 31(3):233-241. https://doi.org/10.1017/S0376892904001432

Naghizadeh, N., D. Abbas, and T. Farvar. 2012. Recognition and Support of ICCAs in Iran. In A. Kothari, C. Corrigan, H. Jonas, A. Neumann, and H. Shrumm, editors. Recognising and supporting territories and areas conserved by indigenous peoples and local communities: global overview and national case studies. Technical series no. 64. Secretariat of the Convention on Biological Diversity, Montreal, Quebec, Canada. https://www.cbd.int/pa/doc/ts64-case-studies/iran-en.pdf

Negahban, M., and A. Jamadi. 2012. The architecture of Qeshm Island. (In Persian.) http://qeshmgeopark.ir/files/files/file/41517395-884e-4ce0-88b0-a1dcfb6fd0f6/The%20Architecture%20Of%20Qeshm%20Island.pdf

Nikbin, M., and M. Karami. 2012. Examination of social-cultural sustainability of tourism development, case of Kish Island. Journal of Iran Cultural Research 5(2):137-158.

Pak, A., and F. Majd. 2011. Integrated coastal management plan in free trade zones, a case study. Ocean and Coastal Management 54(2):129-136. https://doi.org/10.1016/j.ocecoaman.2010.10.033

Papan-Matin, F. 2014. The Constitution of the Islamic Republic of Iran (1989 Edition). Iranian Studies 47(1):159-200. https://doi.org/10.1080/00210862.2013.825505

Petro Energy Information Network. 2004. An introduction to laws and regulations in Free Trade Zones. Petro Energy Information Network (SHANA).

Quiroz-Ibarra, A., P. Torres-Lima, and K. Conway-Gómez. 2020. Community adaptive capacity in peri-urban natural protected areas: a case study near Mexico City. Sustainability 12(11):4416. https://doi.org/10.3390/su12114416

Ramsar Convention on Wetlands. n.d. Iran's Ramsar sites. https://www.ramsar.org/wetland/iran-islamic-republic-of

Ribeiro, S. C., N. G. Selaya, S. G. Perz, F. Brown, F. A. Schmidt, R. C. Silva, and F. Lima. 2020. Aligning conservation and development goals with rural community priorities: capacity building for forest health monitoring in an extractive reserve in Brazil. Ecology and Society 25(3):5. https://doi.org/10.5751/ES-11665-250305

Robinson, L. W., and K. A. Sasu. 2013. The role of values in a community-based conservation initiative in northern Ghana. Environmental Values 22(5):647-664. https://doi.org/10.3197/096327113X13745164553914

Ruiz-Mallén, I., C. Schunko, E. Corbera, M. Rös, and V. Reyes-García. 2015. Meanings, drivers, and motivations for community-based conservation in Latin America. Ecology and Society 20 (3):33. https://doi.org/10.5751/ES-07733-200333

Salerno, J., C. Romulo, K. A. Galvin, J. Brooks, P. Mupeta-Muyamwa, and L. Glew. 2021. Adaptation and evolution of institutions and governance in community-based conservation. Conservation Science and Practice 3(1):e355. https://doi.org/10.1111/csp2.355

Şekercioğlu, Ç. H. 2012. Promoting community-based bird monitoring in the tropics: conservation, research, environmental education, capacity-building, and local incomes. Biological Conservation 151(1):69-73. https://doi.org/10.1016/j.biocon.2011.10.024

Sharifi, K. 2017. Qeshm Geopark regains UNESCO status. Financial Tribune. 6 May. https://financialtribune.com/node/63801

United Nations Development Programme (UNDP), Global Environment Facility (GEF), and Small Grants Programme (SGP). n.d. GEF Small Grants Programme in Iran. https://sgp.undp.org/spacial-itemid-projects-landing-page/spacial-itemid-project-search-results.html?view=allprojects&CountryID[0]=IRA

United Nations Development Programme (UNDP), Global Environment Facility (GEF), and Small Grants Programme (SGP). 2003. Onshore preservation of Hawksbill Turtle eggs through community participation. Shibderaz, Qeshm. https://sgp.undp.org/index.php?option=com_sgpprojects&view=projectdetail&id=6182&Itemid=272

United Nations Development Programme (UNDP), Global Environment Facility (GEF), and Small Grants Programme (SGP). 2005. Environmental impact assessment of SGP artificial reef pyramids for future replication and expansion IRA-G52-2001-005. https://sgp.undp.org/index.php?option=com_sgpprojects&view=projectdetail&id=9289&Itemid=205

United Nations Educational, Scientific and Cultural Organization (UNESCO). 2015. Biosphere reserves (Islamic Republic of Iran). https://en.unesco.org/biosphere/aspac#iran

United Nations Educational, Scientific and Cultural Organization (UNESCO). 2017. Qeshm Island UNESCO Global Geopark (Islamic Republic of Iran). https://en.unesco.org/global-geoparks/qeshm-island

United Nations Educational, Scientific and Cultural Organization (UNESCO) World Heritage Centre. 2007. Qeshm Island (tentative lists). http://whc.unesco.org/en/tentativelists/5215/

Waylen, K. A., A. Fischer, P. J. K. McGowan, S. J. Thirgood, and E. J. Milner-Gulland. 2010. Effect of local cultural context on the success of community-based conservation interventions. Conservation Biology 24(4):1119-1129. https://doi.org/10.1111/j.1523-1739.2010.01446.x

World Cultural Heritage Voices (WCHV). 2013. Qeshm Geo-park. http://worldculturalheritagevoices.org/red-card-given-to-qeshm-geo-park/

Yazdi, A. 2013. Qeshm Island of Iran, Natural Academy of Geotourism Development. Journal of Basic and Applied Scientific Research 3(2s):405-411. http://www.textroad.com/pdf/JBASR/J.%20Basic.%20Appl.%20Sci.%20Res.,%203(2s)405-411,%202013.pdf

Yergeau, M.-E. 2020. Tourism and local welfare: a multilevel analysis in Nepal's protected areas. World Development 127:104744. https://doi.org/10.1016/j.worlddev.2019.104744

Zahmatkesh, Z., M. A. Touli, and Z. Fanni. 2015. The effects of tourism on urban sustainable development on the base of habitant's views; case study: Qeshm Island. Muṭâl'iât-i Mudîriyyat-i Gardishgarî 9(28):39-72. (In Persian with English abstract.) https://doaj.org/article/8f00479fb7ad48cd9b2bb11323941cbc

Zakeri, Z., and M. Esfandiari Kaloukan. 2016. Meta-analysis of free zone studies: 1) Articles. Majlis Research Center. Report No. 15068. (In Persian.)