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Study of non-grazing conflicts in protected areas (case study: Bahram-e Goor protected area-Iran)

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Abstract

Protected areas have emerged as one of the most important and effective tools in the world for biodiversity conservation. Changing the use of natural lands, especially rangelands to protected areas, causes livestock grazing to be restricted in some of the grazing lands. These restrictions cause conflict between different natural land stakeholders. This study investigates the non-grazing management conflicts in the Bahram-e Goor protected area in Iran. In the first stage of the study, in order to investigate the existing conflicts, interviews were conducted with various stakeholders. The sampling method is classification, optimum allocation and targeted sampling method and the statistical population size is obtained from snowball method. The tool used for data collection was questionnaire and R and Gephi software were used for statistical analysis of data. Overall, 15 stakeholder groups and 19 conflict codes were identified. On the other hand, 354 questionnaires were also completed. The results of this research show the number of conflicts of the Department of Environment with 20 conflicts, more than others. Also, the highest number of conflicts is between the Department of Environment and unauthorized tourists, with four conflicts, and with farmers and gardeners, with three conflicts. Based on the findings of this study, in order to resolve key and important conflicts, planning can be done by the management of natural resources and protected areas.

Keywords: Stakeholder in protected area; Conflict management; Grazing management; Environment management

1. Introduction

Conflict has different definitions and concepts in different books and study sources. According to the definition, which is cited more than other sources, conflict arises when there is disagreement or friction between the beliefs or behaviors of one or more members of a group of individuals (Rahim, 2011). According to him, conflict is inevitable and this state occurs as a result of human action and reaction with the surrounding environment and with other components. Competition and conflict occur in an environment where more than two parties have the desire to use and control a certain resource and none of the parties have the desire to share the resource.

Conflict is also seen in the use of natural resources. When natural resources are poorly managed and controlled, or when their distribution are unfairly between stakeholders, this can lead to tensions and intensify violent conflict and can also be the source of a dynamic conflict throughout the region (UNDPA / UNEP, 2015). National parks and protected areas in rural communities have consequences such as limiting the access of local communities to resources that are traditionally exploited, cultural disturbances of those communities by tourists, increased wastage of crops and livestock

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by wildlife and displacement of indigenous people from their lands (Hough, 1988). Changing the use of natural lands, causes some of the available lands to be removed from the reach of indigenous people or face limitations. These restrictions cause conflict between different stakeholders of natural lands (Karimi *et al.*, 2014). Often, conflict between humans and wildlife occurs when the needs or behavior of wildlife have a negative effect on the lives of humans, or on the other hand, humans have a negative effect on the needs of wildlife. In order to prevent these conflicts, peaceful coexistence between these two groups should be done. For this purpose, local communities should be educated, border between the protected areas should be determined with the lands of indigenous people, and detailed instructions should be given to the indigenous people (Mekonen, 2020).

For the participation of local communities in the management of protected areas, it is strongly suggested that in addition to using today's knowledge, indigenous knowledge of existing communities should also be used because they know well how to live in harmony with the environment. Therefore, in this context, there is a need to combine both cases (Rao & Geisler, 1990). On the other hand, in a research conducted in Old Oyo national park in Nigeria, it has been determined that 33% of the studied population believe that if they effectively and actively participate in the management affairs of the park, it will lead to the reduction of existing conflicts, so it is suggested that Management policies of the region are directed towards the participation of local communities and use them to carry out conservation activities (Ajayi, 2017).

Iran has four groups of lands under the supervision of the Department of Environment, including the national park, protected area, biosphere reserve and hunting area, but because of the number and size of protected areas which are more than other areas and also, presence of villages around and even inside these areas, and on the other hand, according to organizational laws, that the presence of livestock in protected areas is allowed, so, in these areas there are more conflicts, Therefore, the Department of Environment, which is responsible for protected areas, has been forced to enforce the law, which ultimately causes conflict between the two groups (Ghasemi, 2011).

It is expected that in the region, the Department of Environment, as the custodian of protected areas, is involved in the most of the conflicts. On the other hand, conflicts between the Department of Environment and other real persons who are present in the region are also evident.

Considering the importance of conflict and the existence of conflicts in protected areas, the purpose of this study is to investigate non-grazing conflicts in the Bahram-e Goor protected area, to identify the factors affecting conflicts in grazing management in the region, to investigate the intensity of grazing management conflicts and the ranking their categorization, as well as providing solutions to deal with the conflict and taking advantage of the points of view of different stakeholders of the protected area and comparing them, is for the best decision-making in the field of protection and sustainable exploitation of the lands and natural resources of the area.

2. Material and methods

2.1. Materials

The Bahram-e Goor protected area, located around the Qatrooyeh national park, was the study area. These two areas are known as the only place in the world that has a dynamic population of Persian zebra (*Equus hemionus onager*). This area, which was protected as a protected area in 1972, is under the supervision and control of the Department of Environmental of Fars Province, although it is located on the border of Fars, Kerman and Yazd provinces. The area of Bahram-e Goor protected area is currently 376.202 hectares and its highest point is 2787 meters above sea level and its lowest point is 1600 meters above sea level. Geographically, this region is located at the 29°00' to 29°43' north latitude and 52°21' to 54°21' east longitude. The climate of the region is hot and dry with an annual rainfall of about 200 mm. 60% of the area is rangeland. Due to the area, altitude changes, topography and soil type, 10 plant types can be seen in the region (Iran Environment and Wildlife Watch, 2012; Iran comprehensive consulting engineers, 2014). Figure 1 shows the geographical location of the Bahram-e Goor protected area in Iran.

There are 20 villages in the Bahram-e Goor protected area, of which 7 are located in and the rest are located around the protected area. Most of the people in the area are engaged in herding and later in agriculture and gardening. It is estimated that there are more than 60 allotments and about 400 herders in the area. The livestock in the area is mostly sheep with an approximate number of more than 50,000 heads and a small number of goats about 2000 heads and camels with an approximate number of 400 people. There are about 1150 hectares of garden and agricultural lands in the region, which are used to produce wheat, barley, pistachios, pomegranates, etc., and about 300 families make a living through this (Iran Environment and Wildlife Watch, 2012; Iran comprehensive consulting engineers, 2014).

Figure 1 Geographical location of the Bahram-e Goor protected area in Iran (Orange Smile Travel Guide, 2021)

2.2. Methods

According to the purpose of this study, which was to investigate the non-grazing conflicts in Bahram-e Goor protected area in Iran, the research was conducted in three main stages, which are as follows:

2.2.1. First stage (exploratory (qualitative) studies to identify stakeholders and conflicting sources in the region and prepare a questionnaire)

In order to investigate the existing non-grazing conflicts, an interview was conducted with the stakeholders. The interview was conducted through semi-structured interviews and in the form of content analysis method. For this purpose, stakeholders with experience in existing conflicts were identified and interviewed to the extent that no new findings were obtained. Interviews were also conducted with experts and staff of relevant government organizations in the region. Interviews were coded, categorized, and summarized.

2.2.2. Second stage (field studies to evaluate and prioritize the severity of conflicts among stakeholders)

In the second stage, an attempt was made to obtain qualitative information collected in the interview process by completing a questionnaire in a larger population that can statistically determine the results of the study and generalized to the whole region, to be quantified. After the interview, a researcher-made questionnaire consisting of closed, open and semi-open items was designed. Questionnaires were completed among stakeholders. Sampling method to complete the questionnaires is a targeted classification method and the required number of samples is obtained from the optimum allocation method. After determining the sample size, our pre-test questionnaires were completed among the respondents. After confirming the validity and reliability of the questionnaire through Cronbach's alpha test, the questionnaire was distributed among members of the study community and then completed. Then, the data were analyzed in Gephi and R software.

2.2.3. Step 3 (Identify and prioritize methods, review the capacity of government organizations and provide suggested ways to manage conflicts in the region)

After analyzing the data and answering the initial research questions, collaborative workshops with stakeholders in the region It was held in order to determine the solutions for managing the existing conflicts.

Table 1 shows information about the statistical population of the classes and the number of people sampled in each class.

The results were also presented in two parts, including the stakeholders in the region (from the point of view of legal and real persons) as well as the conflicts in the region.

As can be seen, the classes include the various stakeholders in the area. The statistical population is limited to all classes that refer to the legal stakeholders of the region, because the protected area is adjacent to the Qatrooyeh section, which is a small part of Neyriz county, and the legal stakeholders in that section, due to the small offices in there, they have a limited number of experts who can answer questions related to the region. In this case, the number of sampled people for these classes are limited and minimized.

Table 1 Statistical population of the classes and the number of people sampled in each class

Row	Class	Statistical population	Number of sampled people
1	Department of Environment	6	5
2	Department of Natural Resources	4	3
3	Organization of Agriculture	3	3
4	Department of Nomadic Affairs	3	3
5	Department of Road Maintenance	3	3
6	Department of Road and Urban Development	3	3
7	Industry, Mining and Commerce Institute	3	3
8	Department of Urban Water and Wastewater	3	3
9	Department of Electricity	3	3
10	Department of Gas	3	3
11	Department of Telecommunication	3	3
12	Herder	47	28
13	Farmer and Gardener	18	11
14	Unauthorized Tourist	Unknown	5
15	Hunter	Unknown	3

Table 2 Code of conflict issues

Row	Conflict issues					Code
	Major	Main	Subsidiary	Category	Subcategory	
1	Non-Grazing	Custodianship/ Ownership/ Arena	General	Non-Agricultural / Non-Horticultural Arena and Boundary and scope		1-1-1-1
2	Non-Grazing	Custodianship/ Ownership/ Arena	General	Water supply facilities		1-1-1-2
3	Non-Grazing	Custodianship/ Ownership/ Arena	General	Power transmission facilities		1-1-1-3
4	Non-Grazing	Custodianship/ Ownership/ Arena	Road	Access to water supply facilities		1-1-2-1
5	Non-Grazing	Custodianship/ Ownership/ Arena	Road	Access to power transmission facilities		1-1-2-2

6	Non-Grazing	Custodianship/ Ownership/ Arena	Road	Access to gas supply facilities		1-1-2-3
7	Non-Grazing	Custodianship/ Ownership/ Arena	Road	Access to telecommunication facilities		1-1-2-4
8	Non-Grazing	Custodianship/ Ownership/ Arena	Road	Access to the water source / Reservoir of the Department of Nomadic Affairs		1-1-2-5
9	Non-Grazing	Custodianship/ Ownership/ Arena	Road	Construction and development of rural, urban and interurban roads		1-1-2-6
10	Non-Grazing	Custodianship/ Ownership/ Arena	Road	Rebuild and maintenance of rural, urban and interurban roads		1-1-2-7
11	Non-Grazing	Custodianship/ Ownership/ Arena	Mine assignation	Ownership of arena and building		1-1-3
12	Non-Grazing	Custodianship/ Ownership/ Arena	Agricultural / Horticultural	Ownership of arena and building	Arena / Boundary and scope	1-1-4-1-1
13	Non-Grazing	Custodianship/ Ownership/ Arena	Agricultural / Horticultural	Ownership of arena and building	Building	1-1-4-1-2
14	Non-Grazing	Custodianship/ Ownership/ Arena	Agricultural / Horticultural	Quantitative and qualitative destruction of agricultural and horticultural crops		1-1-4-2
15	Non-Grazing	Tourism	Unauthorized tourist	Garbage and waste producing		1-2-1-1
16	Non-Grazing	Tourism	Unauthorized tourist	Creating of fire		1-2-1-2
17	Non-Grazing	Tourism	Unauthorized tourist	Destruction of plants and illegal collection of rangeland crops		1-2-1-3
18	Non-Grazing	Tourism	Unauthorized tourist	Disorder in the life and tranquility of the wildlife		1-2-1-4
19	Non-Grazing	Hunting				1-3

The situation is different for the classes that refer to the real stakeholders in the region. In the case of unauthorized tourist and hunter, the statistical population cannot be determined. For herder, just herders were considered to have more livestock, a wider allotment, precedent of conflict in the region, or a combination of these factors. For farmer and gardener, those groups were selected who had land in the vicinity of the area, larger land, precedent of conflict in the area or a combination of these factors. In addition, conflicting issues in the region were coded. Coding of related conflicts, makes them easier to use in statistical analysis of data and also better understanding of conflicts. In general, according to the number of conflicts and stakeholders involved in the conflicts, as well as whether the existing conflicts are one-sided or two-sided, 354 questionnaires have been completed. Table 2 shows the code of conflict issues.

3. Results

According to the mentioned categories, the following can be mentioned about the non-grazing conflicts in the region:

3.1. Stakeholders in the region (from the perspective of legal and real personalities)

Stakeholders in the region are divided into two main groups. The first category is legal stakeholders, which includes 11 government organizations and departments. The other category is the real stakeholders, which includes four groups of real persons. Each stakeholder reacts differently to the conflict, depending on what the other group is. In addition to the conflicts between the two groups, there are also conflicts in each group. In this way, in order to examine the stakeholders in the region from the perspective of legal and real persons, they are examined in the following four groups. It should be noted that legal-real refers to the existing conflicts between legal stakeholders in relation to real stakeholders and from the point of view of legal stakeholders, but real-legal is the opposite of the previously mentioned situation.

3.1.1. Legal-Legal

In this group, there are 11 legal stakeholder groups and 26 conflicts. The Department of Environment with 12 conflicts, has the most conflicts.

3.1.2. Legal-Real

In this group, there are four stakeholders, one group of which is legal and includes the Department of Environment, and there are also three real stakeholder groups. On the other hand, there are 8 conflicts, all of which are related to the Department of Environment.

3.1.3. Real-Legal

In this group, there are four stakeholders, three groups of which are real and there is also one legal stakeholder includes the Department of Environment. On the other hand, there are 8 conflicts. Unauthorized tourist has the highest number of conflicts with four conflicts.

3.1.4. Real-Real

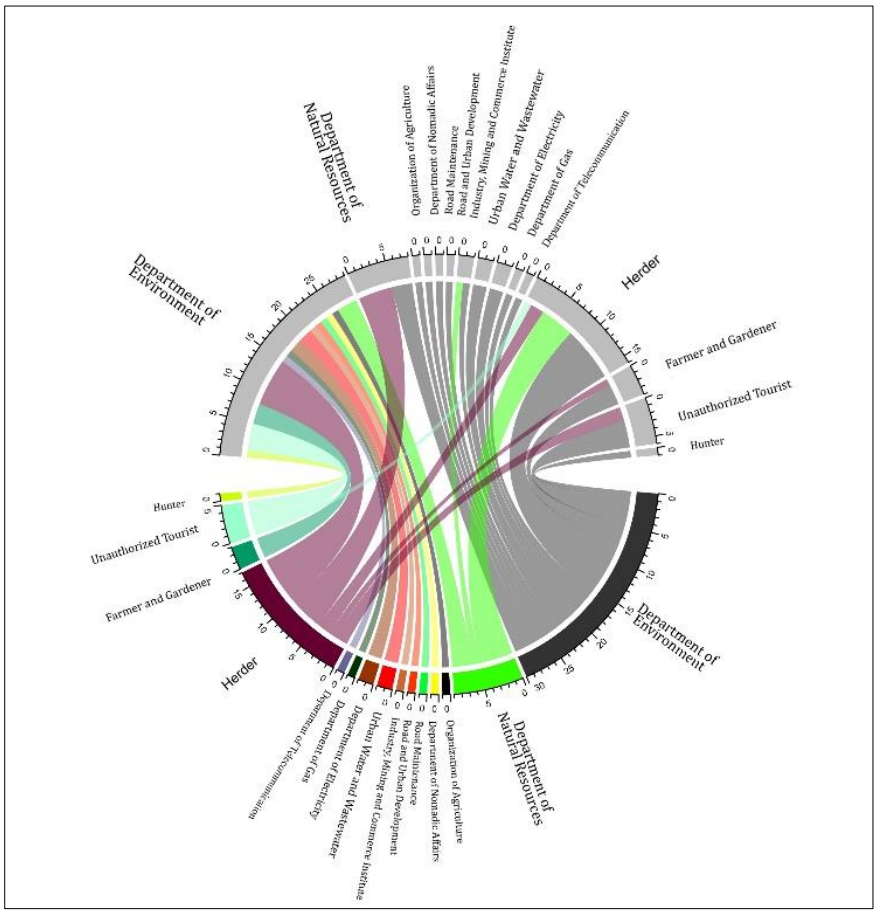

Figure 2 The relationship between stakeholders with each other

In this group, there are three real stakeholders that the herders have conflicts among themselves. Considering that the software should be able to distinguish these two groups from each other, so wherever it was necessary to examine both groups together, try to divide them into two groups, one "herder" with code 13 and the other "herder (another group)" with the code 131 has been used, but in other cases where only the need to examine all herders as a group, only one group called "herder" with the code 13 has been used. 7 conflicts can also be seen that the herder has the most conflicts with five conflicts.

Figure 2 Shows the relationship between stakeholders with each other.

3.2. Conflicts in the region

Here, each non-grazing conflict code, which includes 19 conflict codes, is addressed:

3.2.1. Non-Agricultural / Non-Horticultural Arena and Boundary and scope (1111)

It is related to the location and boundaries of non-agricultural and non- horticultural areas in the area. Stakeholders involved in this conflict are the Department of Environment and the Department of Natural Resources, as well as herder and other groups of herders (the conflict between herders) are bilaterally.

3.2.2. Water supply facilities (1112)

It is related to water transfer facilities in the area. Stakeholders involved in this conflict are the Department of Environment and the Department of Urban Water and Wastewater bilaterally.

3.2.3. Power transmission facilities (1113)

It is related to power transmission facilities in the area. Stakeholders involved in this conflict are the Department of Environment and the Department of Electricity bilaterally

3.2.4. Road to access to water supply facilities (1121)

It is related to access roads to water supply facilities in the area. Stakeholders involved in this conflict are the Department of Environment and the Department of Urban Water and Wastewater bilaterally.

3.2.5. Road to access to power transmission facilities (1122)

It is related to access roads to power transmission facilities in the area. Stakeholders involved in this conflict are the Department of Environment and the Department of Electricity bilaterally.

3.2.6. Road to access to gas supply facilities (1123)

It is related to access roads to gas supply facilities in the area. Stakeholders in this conflict are the Department of Environment and the Department of Gas bilaterally.

3.2.7. Road to access to telecommunication facilities (1124)

It is related to access roads to telecommunication facilities in the area. Stakeholders involved in this conflict are the Department of Environment and the Department of Telecommunication bilaterally.

3.2.8. Road to access to water source / reservoir of the Department of Nomadic Affairs (1125)

It is related to access roads to water source supply and reservoirs of the Department of Nomadic Affairs in the area. Stakeholders involved in this conflict are the Department of Environment and the Department of Nomadic Affairs bilaterally.

3.2.9. Construction and development of rural, urban and interurban roads (1126)

It is related to the construction and development of rural, urban and interurban roads in the region. Stakeholders involved in this conflict are the Department of Environment and the Department of Road and Urban Development bilaterally.

3.2.10. Rebuild and maintenance of rural, urban and interurban roads (1127)

It is related to the rebuild and maintenance of rural, urban and interurban roads in the region. Stakeholders involved in this conflict are the Department of Environment and the Department of Road Maintenance bilaterally.

3.2.11. Mine assignation (113)

It is related to the mine assignation in the area by the Department of Natural Resources and the Industry, Mining and Commerce Institute. Stakeholders involved in this conflict are the Department of Environment and the Industry, Mining and Commerce Institute, as well as the Department of Natural Resources and the Industry, Mining and Commerce Institute bilaterally.

3.2.12. Arena, boundary and scope of agricultural / horticultural areas (11411)

It is related to the location and boundary of agricultural and horticultural areas in the region. Stakeholders involved in this conflict are the Department of Environment and the Organization of Agriculture, the Department of Environment and farmer and gardener, as well as farmer and gardener and herder bilaterally.

3.2.13. Agricultural / horticultural building (11412)

It is related to agricultural / horticultural building in the area. Stakeholders in this conflict are the Department of Environment and farmer and gardener bilaterally.

3.2.14. Quantitative and qualitative destruction of agricultural and horticultural crops (1142)

It is related to the quantitative and qualitative destruction of agricultural and horticultural crops by wildlife in the region. Stakeholders in this conflict are the Department of Environment and the farmer and gardener bilaterally.

3.2.15. Waste disposal by unauthorized tourist (1211)

It is related to the waste disposal by unauthorized tourist in the area. Stakeholders involved in this conflict are the Department of Environment and unauthorized tourist bilaterally.

3.2.16. Creating of fire (1212)

It is related to creating of fire by unauthorized tourists in the area. Stakeholders involved in this conflict are the Department of Environment and unauthorized tourist bilaterally, as well as herder and unauthorized tourist unilaterally.

3.2.17. Destruction of plants and illegal collection of rangeland products (1213)

It is related to the destruction of plants and illegal collection of rangeland products by unauthorized tourists in the area. Stakeholders involved in this conflict are the Department of Environment and unauthorized tourist, as well as herder and unauthorized tourist bilaterally.

3.2.18. Disorder in the life and tranquility of wildlife (1214)

It is related to the disorder in the life and tranquility of wildlife by unauthorized tourists in the area. The stakeholders involved in this conflict are the Department of Environment and unauthorized tourist bilaterally.

3.2.19. Hunting (13)

It is related to hunting by hunters in the area. This includes hunting and trapping of wildlife. Stakeholders involved in this conflict are the Department of Environment and hunter bilaterally.

Figure 3 shows the relationship between stakeholders and conflict issues. Figure 4 also shows The relationship between stakeholders with each other and their conflict issues.

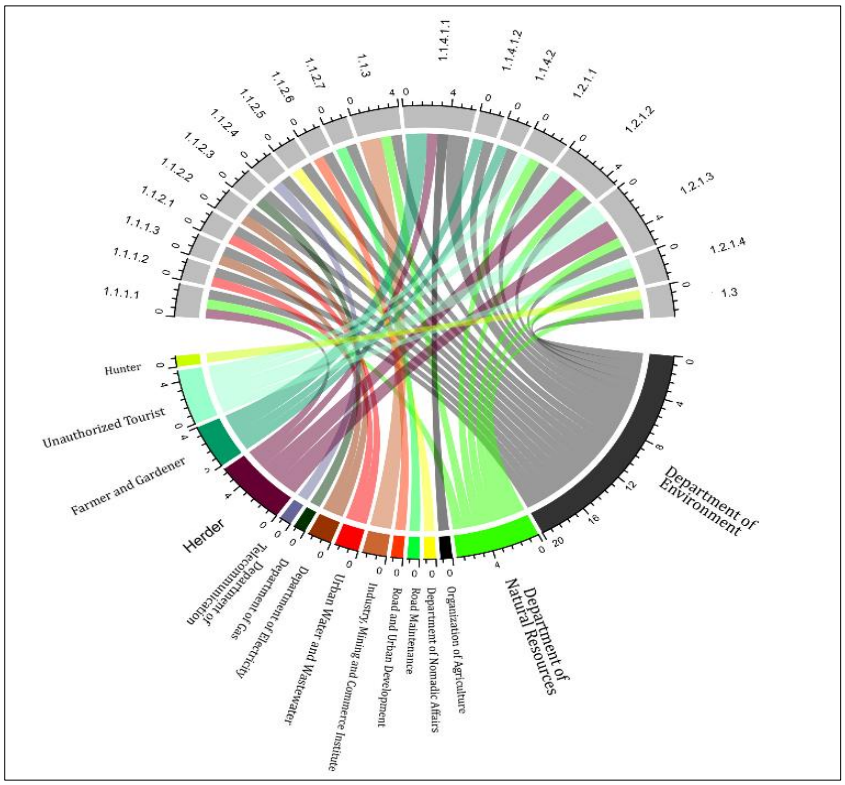

Figure 3 The relationship between stakeholders and conflict issues

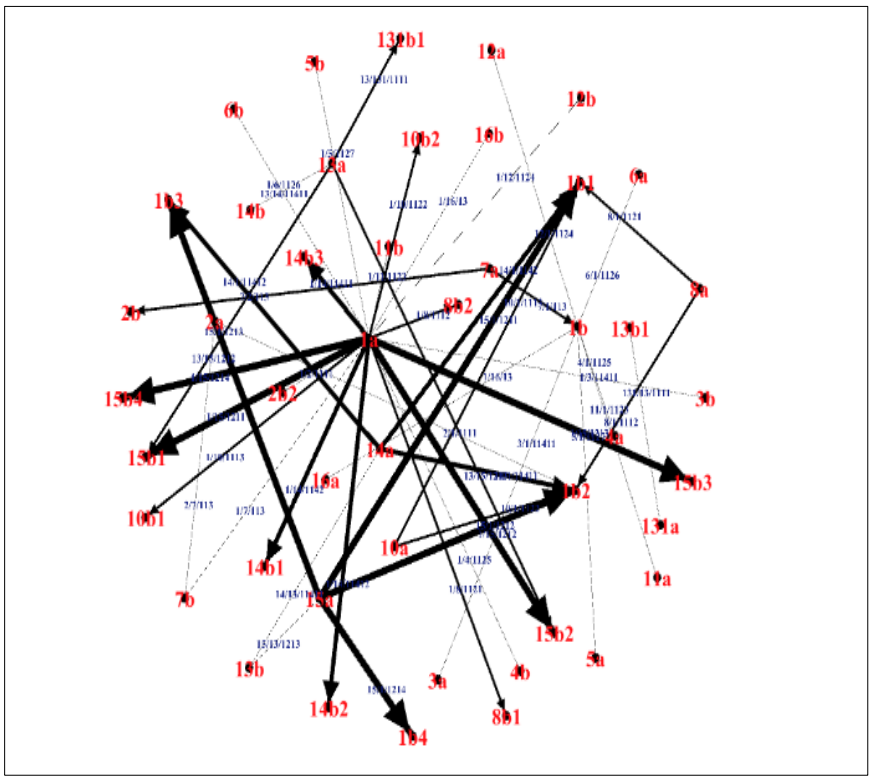

Figure 4 The relationship between stakeholders with each other and their conflict issues

4. Discussion

In the following, the key outputs of this research and their comparison with other similar studies conducted worldwide will be discussed:

- From the point of view of the stakeholders in the region, in the legal-legal sector, the Department of Environment is in conflict with the Department of Urban Water and Wastewater and the Department of Electricity. Considering that the Department of Environment is in charge of protecting the country's protected areas, this is not far from expected. The development of water and electricity transmission facilities and lines causes this type of conflicts. This result has also been obtained in the majority of similar researches. As mentioned in a research, over the past decades, there has been a lot of conflict in protected areas between the various stakeholders there, such as landowners, park users, and area experts, so these types of areas require careful management (Smrekar *et al*., 2016).
- From the point of view of the stakeholders in the region in the legal-real sector, the Department of Environment is in confrontation with the farmers and the gardeners as well as the unauthorized tourists. This result is also seen in the majority of similar researches. A large number of people living in and around protected areas, are highly dependent on natural resources, and their putting aside from area management has always led to conflict (Liu et al., 2010).
- From the point of view of the stakeholders in the region in the real-legal sector, farmers and gardeners as well as unauthorized tourists are in conflict with the Department of Environment. Due to the fact that these natural persons, who are often in the vicinity of protected areas, intentionally or unintentionally, illegally encroach on the area, so this case is not far from expected and is also seen in other similar investigations. It has also been argued that human-wildlife conflicts are the result of the use of resources in protected areas. Such conflicts negatively affect biodiversity. Wildlife harms people and their property, leading to retaliatory killings by local communities in 82% of protected areas (Okech, 2011).
- From the point of view of the stakeholders in the area in the real-real sector, herders are involved against other herders as well as unauthorized tourists. This is due to the high dependence of herder on protected areas. This result is also seen in the lot of similar researches. As mentioned in a research, protected areas as well as adjacent areas are closely related, so conflicts in the area are inevitable due to the merging of the two areas. Considering the existing stakeholders, by considering different perceptions about the benefits of living in the vicinity of a protected area, can lead to better implementation of management in protected areas (Mannetti *et al*., 2019).
- In the non-grazing conflicts, it is observed that the Department of Environment has the highest number of conflicts, which many of them are in opposition to unauthorized tourist as well as farmer and gardener. As stated, since the laws related to the management of protected areas have been determined based on conservation objectives, it has limited access to natural resources by villagers and nomads. Conservation actions have increased the population of wild species, putting farmland and livestock at greater risk of damage. These laws will increase the conflict between humans and wildlife, if they ignore the economy and livelihood of local communities and focus only on protection (Zamani *et al.*, 2019).
- Real stakeholders have more personal conflict motivation. This is also seen in other researches. The reason is the strong dependence of these people on natural resources for livelihood. It has been stated that the conflict between humans and wildlife is due to the existence of shared resources and the creation of competition for these resources, and when these effects are considered in relation to the economy and people's livelihood, it becomes a controversial issue (Zamani and Tarahi, 2016).
- Legal stakeholders have more impersonal conflict motivation. The reason is the existence of strict executive laws and also the fulfillment of responsibilities assigned by government managers. This result has also been obtained in other studies. For example, it is stated that, there are still shortcomings in Africa on how to design and enact organizational rules for biodiversity and sustainable livelihoods of local communities. Legal complexities, limit the ideal of joint management of a protected area to improve local livelihoods. If these legal complexities make local communities' sustainable livelihoods less of a priority than other biodiversity conservation concerns in African protected area programs, support for such programs may be greatly reduced in the future (Petursson *et al.*, 2011).
- Real stakeholders are more likely to believe in a compromise conflict resolution strategy to resolve existing conflicts with legal stakeholders, on the other hand, legal stakeholders are more committed to this strategy to resolve existing problems with other legal stakeholders. As mentioned, strict enforcement laws prevent real

stakeholders from confronting government organizations and departments as much as possible. On the other hand, government organizations and departments, despite their conflicts with each other, usually try to compromise with each other. A study shows that the side effects of creating protected areas in some areas caused resentment among locals and led to sabotage, such as fire and damage to local properties, the refusal of local people to sell food to protected area personnel, and in severe cases, they have been killed. On the other hand, local populations have violated the rules of the protected area by hunting animals, cutting down trees and grazing livestock in the area (Hough, 1988). This study shows a result contrary to what was achieved in this study, which may be due to the weak executive power of the relevant government agency in the region.

- Legal stakeholders are more likely to believe in a competitive conflict resolution strategy in the face of real stakeholders. Existence of strict executive laws and also the fulfillment of responsibilities assigned by government managers, is the reason for this, which of course can be seen in other similar regions in the world. A study shows that the Digya national park in Ghana has been the scene of conflict between local communities and wildlife managers since its inception in 1971. These conflicts range from the detention of local people by wildlife authorities for entering the park to collect non-timber forest products, to the serious treatment of unauthorized hunters, the arrest and deportation of suspects, which sometimes lead to death (Ayivor *et al*., 2013).

5. Conclusion

According to the investigations carried out in this research, suggestions can be made to manage and improve the conditions of the protected area. It seems necessary to change and review some laws of government organizations and departments that are present in the region in order to reduce conflicts, and it is necessary to reduce administrative bureaucracies. Purchase of allotments and agricultural and horticultural lands in the region from real stakeholders by the government, replacement of allotments and agricultural and horticultural lands in the region with places outside the protected area, as well as the transfer of existing villages in the region to other places. It will definitely reduce existing conflicts. Participation of real stakeholders and other indigenous people of the region in other protection and management plans, training of real stakeholders and other indigenous people of the region about the need to protect and develop natural resources and wildlife, collaborative workshops with stakeholders to resolve existing conflicts and also use the local elders of the region to resolve conflicts can lead to the improvement of the existing conditions and the improvement of the management of the region. Employing native environmentalists who have better familiarity with other indigenous people in the region is also one of the useful management solutions, which fortunately has been carried out for a long time in Bahram-e Goor protected area. Hygiene care for domestic livestock in the region also prevents the spread of common diseases of livestock and wildlife.

Compliance with ethical standards

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Disclosure of conflict of interest

All authors declare that they have no conflicts of interest.

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