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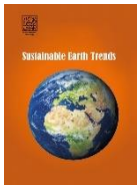

Strategic planning for sustainable livelihoods of local communities in areas under environmental management, Case study: mote national park and wildlife sanctuary

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ABSTRACT

Today, the livelihoods of many local communities on the edge of protected areas depend on the resources and ecosystem services of these areas. Given that protected areas, especially drylands, are vulnerable ecosystems due to limited resources and environmental pressures such as climate change and human disturbance, the use of protected areas' resources and ecosystem services is severely restricted. are faced with dealing with resources. Therefore, it is necessary to provide a specific sustainable livelihood diversification strategy to guide the cooperative protection of protected areas and the sustainable and reasonable use of the resources and services of these ecosystems by local communities and the beneficiaries of these areas. This study, using the Participatory Rural Assessment (PRA) method, identified and analyzed stakeholders and beneficiaries of Mote National Park and Wildlife Sanctuary. The identified stakeholders were then invited to a joint workshop to formulate strategies for sustainable livelihoods in the study area, and during the brainstorming and criteria weighted comparison matrix phases, the identified livelihoods were ranked and a diversification strategy for sustainable livelihoods was presented.

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1. Introduction

The concept of sustainable livelihood is one of the important and prominent topics of sustainable development, the goal of which is poverty alleviation. Sustainable livelihood was mentioned for the first time in the 1987 report of Bratland Commission, and this concept and idea was emphasized in the first United Nations Human Development Report in 1990. Then, in the last decade of the 20th century, it has received widespread attention. For example, in 1995, at the World Summit for Social Development held in Copenhagen, Denmark, a declaration was issued at this summit, in which it expressed a commitment to all men and women to achieve a secure and sustainable livelihood through employment and productive work that is freely chosen. The importance of sustainable livelihoods on the path to poverty reduction was also highlighted at the Fourth World Conference on Women (FWCW) held in Beijing, China in 1995 and also at the World Summit on Food Security held in Rome, Italy in 1996. In the following years, we have seen an increase in theoretical and empirical research on sustainable livelihoods, so that until today, several international sustainable livelihood projects have been conducted looking for alternatives to development strategies. Therefore, the concept of sustainable livelihood has been investigated empirically and theoretically by various researchers and is now recognized and emphasized by individuals, governments and non-governmental organizations around the world (Zhang et al., 2019).

The origin of sustainable livelihoods as a concept is attributed to Robert Chambers at the Institute for Development Studies (IDS). The key reference of sustainable livelihood goes back to an article written by Chambers and Conway in 1992. In this article, a practical definition of sustainable livelihood is provided (Chambers et al., 1992): Livelihood includes abilities, assets (reserves, resources and access) and activities needed to sustain a life. Therefore, it will be a sustainable livelihood that can cope with stresses and shocks and recover it, maintain or strengthen its abilities and assets, and provide sustainable livelihood opportunities for the next generation, as well as a net benefit to other livelihoods. at local levels and other scales in the short and long term. In this definition, sustainable livelihood includes three concepts of ability, equity and sustainability (Solesbury, 2003).

In the article by Chambers and Conway (1992), a framework for development thinking that is both normative and practical is presented, which has 3 policies (Solesbury, 2003):

• Increasing ability: in the face of change and unpredictability of the system, it is considered that the people of the society are versatile, adapt quickly and can take advantage of diverse resources and opportunities.

• Improving equity: where priority is given to the capabilities, assets and access of poorer people, including minorities and women.

• Increasing social stability: in which the vulnerability of the poor is minimized by reducing stress and shocks outside the system and creating safety nets.

Livelihood capital includes human, natural, physical, financial, social and cultural capital (Ellis, 2000).

• Human capital: including the knowledge and skills of people, the number of family members who are part of the workforce (Yan et al., 2010).

• Natural capital: including soil, lakes, forests, wildlife, etc., which communities live by these resources (Ashley, 2000; Stone and Nyaupane, 2018).

• Physical capital: including buildings and infrastructure, houses, roads, transportation system (Ashley, 2000, Stone and Nyaupane, 2018).

• Financial capital: includes household income (Ashley, 2000, Yan et al., 2010).

• Cultural capital: refers to the way society views itself through stories, heritage, food, traditions, values, and communication. Also, the ecological ethics of local communities has a guiding role in the behavior of local communities (Flora et al., 2004, Stone and Nyaupane, 2018).

• Social capital: It reflects the characteristics of social organization such as trust, norms and networks that can improve the efficiency of community processes by facilitating its actions and coordination (Liu et al., 2014).

Therefore, the development of local communities and optimal protection of the biodiversity of protected areas is based on three concepts that achieve balanced and sustainable development:

• Paying attention to livelihood capital and development of local communities

• Behaviors related to environmental protection

• Social exchange theory

The creation of protected areas has been one of the most successful strategies for biodiversity conservation, which is widely considered as a turning point at different scales on Earth. By examining the history of protected areas, these areas have been preserved in their wild and pristine state and protected from human threats. Over time, the mission of these protected areas has expanded from a primary focus on rare and endangered species to public awareness of biodiversity and ecosystem services, with an increased focus on local communities. Therefore, in the theoretical literature of protected areas, the recognition of the socio-ecological nature is considered and it affects the ecological, social and political processes. However, there are many concerns about how the management of these areas simultaneously supports biodiversity and the livelihoods of local communities. The rapid growth of the human population and drastic changes in land use (such as the rapid development of urbanization and agriculture) in the periphery of the protected areas have faced a serious threat to these areas. As it has been mentioned in the researches, the harmful effects of humans on protected areas have led to the reduction of biodiversity and the destruction of habitats. On the other hand, by banning many human

activities in the protected areas, it has caused poverty and social conflicts in the local communities on the edge of these areas.

Therefore, the concept of ecological-social system is of particular importance for the management of areas under environmental management, because it expresses the concept that a protected area is not an island, but these areas interact with the ecological-social systems of other areas. Therefore, the optimal performance of protected areas depends on a wide range of systems mentioned in other habitats, and these areas can have positive and negative effects on the local socio-ecological environment and the livelihood of local communities. As a result, protecting biodiversity and supporting sustainable livelihoods is a big challenge for the sustainable management of protected areas, and therefore paying special attention to the role of local communities in the collaborative management of ecosystems and protecting biodiversity and adopting more sustainable livelihood policies. It seems necessary (Wei et al., 2018). Determining protected areas is a dominant global approach to protect biodiversity and ecosystem services (Hilborn et al., 2006; Douglas, 2018). However, until now, many local communities live on the margins of protected areas, especially in impoverished areas, and rely heavily on local natural resources through agricultural and grazing activities (Nepal, 2002; Struhsaker et al., 2005; Liu et al., 2010; Sims, 2010; Andrade and Rhodes, 2012). Therefore, for a long time, the local communities on the edge of these areas have been considered as a threat to environmental protection, because their behavior and actions have continuously caused disturbances in the ecosystems (Maikhuri et al., 2000, Oltremari and Jackson, 2006). Therefore, beyond the demarcation of protected areas and restricting access to resources, the behavior of local communities and their motivations, including their livelihood needs, should not be ignored (Wang et al., 2020).

Today, it is clear that there is no difference between excessive emphasis on environmental protection and excessive emphasis on economic benefits without environmental considerations. So that too much emphasis on environmental protection causes conflicts between sustainable development and ecological-social functions of protected areas in micro and macro scales (Shibia, 2010). Governments try to protect the areas under environmental management through the policy of limiting the activities of local communities. These policies include determining the boundaries of these areas and restricting access to natural resources (Ross and Wall, 1999). But as it was mentioned, this type of policy by decision makers and governments, i.e., top-down management mechanism, does not pay enough attention to local communities and their needs, especially their livelihoods (Ross and Wall, 1999; Spenceley and Goodwin, 2007; Reggers et al., 2019). As a result of this type of policy, local communities had a negative attitude towards the management of these areas and the protection of biodiversity (Ross and Wall, 1999). Therefore, in order to optimally protect the protected areas and its biodiversity, it is necessary to pay attention to the sustainable livelihood of local communities (Lee et al., 2013; Stone and Nyaupane, 2017; Lee and Jan, 2019) that the benefits of this type of approach in the approach of collaborative conservation Areas under environmental management will be accompanied by the improvement of livelihood and social capital of local communities (Stone and Nyaupane, 2017; Stone and Nyaupane, 2018).

Effective protection of biodiversity and improvement of human well-being are considered as the basic conditions of protected areas. These areas serve as a place to protect the biodiversity of important habitats and landscapes for certain species. In addition, it is believed that these areas play an important role in reducing poverty by providing ecosystem services (Ferraro et al., 2011). However, due to the fact that protected areas are surrounded by poor communities and agricultural lands on their margins, they exert adverse effects on these areas by losing livelihoods and reducing food security (Brockington and Schmidt-Soltau, 2004; Brockington et al., 2006). The areas under environmental management are fundamentally affected by the implementation of strict management regulations for the protection of biodiversity to bring restrictions for local communities in line with their

livelihoods, which affects health, economic and social well-being. The marginalized community of these areas (West and Brockington, 2006) and on the other hand, assessing the sustainability of livelihoods in ecologically sensitive, impoverished and damaged areas is vital to understand the challenge and poverty alleviation interventions (Opiyo et al., 2023).

Also, dry lands are vulnerable ecosystems due to limited resources and environmental pressures. These ecosystems are sensitive to a range of pressures, including climate change and human disturbances in various forms. Therefore, the livelihood of the local communities on the edge of these areas must be stable in order to maintain the stability of the socio-ecological systems of dry lands. Human livelihood in these lands is determined by a single structure, high dependence on natural resources and vulnerability to disturbances. Also, the livelihood of local communities in these types of areas has faced an increasing challenge in the context of climate change and the expansion of ecosystems. As a result, maintaining and restoring sustainable livelihoods is not separated from good ecosystem management (Wang et al., 2024) and the resilience of local communities in socio-ecological systems is largely determined by access and sustainable management of natural resources (Li et al., 2024). Considering these issues, it has been proven that the implementation of strict laws for the protection of these areas has made the conditions of the local community difficult and can cause possible negative consequences on the protection of biodiversity. Therefore, various programs based on the motivation of communities, including community-based conservation, have been formed in conservation projects of protected areas, whose goal and strategy is to match conservation with the development needs of communities through sharing benefits (West et al., 2006) that the policy of these types of programs is based on reducing poverty through ecosystem services (Flora et al., 2004).

On the other hand, some studies have mentioned the negative effects of these types of programs, such as the aggravation of social differences, creating high expectations without achieving the desired goals, unfair distribution of benefits, which should be taken into account during the implementation of these programs (Naughton-Treves et al., 2005; West and Brockington, 2006). As a result, paying attention to the approach of participatory conservation and sustainable livelihood of the local community is one of the ethical and practical principles regarding the management of protected areas. Therefore, in general, a large number of local communities depend on the resources and ecosystem services of protected areas. There are potential costs and benefits of protected areas for sustainable livelihoods. The benefits of protected areas include direct and indirect ecosystem services. Therefore, the amount of use of resources and ecosystem services of protected areas largely depends on the protection status and management strategy of the area. As a result, where protected areas face severe restrictions on resource use, the benefits of using resources and ecosystem services for local communities will be impossible. Therefore, the delivery of benefits to local communities largely depends on the mechanisms in the local community participation management structures. Also, the sustainability of rural livelihoods and local communities is one of the pillars of sustainable social development, which paying attention to the challenges facing sustainable livelihoods and trying to manage them paves the way for sustainable development (Ghasemipour et al., 2024).

2. Material and Methods

2.1. Case study

Mote National Park and Wildlife Sanctuary with an area of 205 thousand hectares is located in the north of Isfahan province, next to Isfahan-Tehran highway (Meymeh-Delijan) and on the common border of Isfahan and Central provinces, so that its northern part is in Central province and its southern part is located in Isfahan province and its management is under the supervision of the General Department of Environmental Protection of Isfahan province. The name Mote is due to the location of Mote village in its center. In

addition, several villages and cities are located in and around this region, including Laybid, Hassan Robat, Golshahr, etc. The natural landscape of this region includes numerous mountains and hills, plains, vast plains and salt marshes with special plants, each of these habitats creates special conditions for the wildlife of the region. According to Dumarten's classification, this region has a dry or semi-arid climate and according to Amberget's classification, it follows dry and cold weather conditions, where the average minimum and maximum temperature during a 25-year period is -8.5 and 30.8 degrees, respectively. is centigrade. Also, the average annual rainfall is 249.16 mm. The vegetation of this area is of Iran and Turan desert type and is in the form of bushland and it is considered as a mono-floor type of vegetation. Based on the investigations carried out so far, 478 plant species have been identified in this area. Its dominant species is the desert, which grows in the plains and in the highlands in the mountain desert. The key animal species of the National Park and Wildlife Sanctuary is Mote Iranian deer, so it can be safely said that this area is one of the best Iranian deer habitats in the country and the Middle East and has the largest population of deer. Also, based on the studies conducted so far, 25 mammal species, 88 bird species, one amphibian species and 25 reptile species have been identified in this region (Omidi and Yousefpour, 2018).

2.2. Methods

To evaluate development and protection programs, various models have been presented, each of which has its own approaches. However, the evaluation of these types of programs has faced various problems, because the effectiveness of these programs cannot be accurately measured. In general, the evaluation methods that are currently used are non-participatory. In these methods, experts evaluate performance by completing pre-designed questionnaires in which there are statistical analyses. Therefore, despite all the advantages of these types of methods, due to limiting the answers through the design of questions and creating an average and hiding the variations, it suffers bias (Nouri and Ruknuddin Eftekhari, 2006).

During the past decades, several approaches have been proposed in the field of rural development. One of these cases that has been widely used is the top-down development approach or model. This approach naturally creates a communication gap between local communities and planners. In this regard, the problem is evident in the inefficiency of development programs on the one hand and the lack of actual and potential abilities and indigenous knowledge of local communities on the other hand. The emergence of such problems has led to the emergence of alternative approaches such as the Participatory Rural Appraisal (PRA) method. This method can be defined as a work tool that is optimally used to empower local community people in analyzing native and local knowledge of their own life and local conditions (Sulaeman et al., 2023).

In fact, the participatory rural assessment method defined a tool that can be used by local communities to learn more facts from the lives of local people. Hence, local people are the participants who take the leadership role in collecting, analyzing, interpreting and presenting information. They convey development insights and knowledge to planners. In fact, the participatory rural evaluation method is the process of collecting information through the local communities themselves, in which instead of interviewing a few local people, key and influential groups and stakeholders of the local community are used through facilitation in collaborative workshops (Taleb and Mirzaie, 2010).

Since the interaction of the local community is an important criterion for planning, however, this interaction has not been considered in many planning projects. In developing countries, planning methods are top-down and often do not benefit from the views of the community and stakeholders. This type of planning cannot meet the basic needs of the people and as a result lead to waste of time and resources and mostly by providing short-term solutions, long-term economic-social and environmental problems are achieved. Therefore, methods such as collective storytelling can play an

important role in inclusive planning. In this method, which is a qualitative method, the people of the society and the stakeholders in general have an active participation, and by creating active participation, it helps the experts and planners to play their role more empathetically and coherently through the prioritization of the needs of the society (Baidya, 2020).

In the rural participatory assessment approach, the local community is encouraged to participate in the planned matter and the community's priorities are determined. Therefore, in this type of planning, arguments are considered more than emotions by the facilitators, and therefore give credibility to the final plan. As a result, it is mentioned as a suitable tool to facilitate participatory planning (Bulkens et al., 2015). In this direction, for the strategic planning of sustainable livelihood of the local community of Mote National Park and Wildlife Sanctuary, cooperative workshops were held using the participatory rural assessment (PRA) method, which includes the following points (Nouri and Ruknuddin Eftekhari, 2006):

• Participation: local people were considered as the main means of expanding the participatory approach in development in rural participation assessment activities.

• Collective work: it is so important that the validity of PRA data depends on the informal interaction of interested parties, in this regard, a team consisting of local people with knowledge of the region's situation, traditions and social structures, as well as indigenous people with a complementary mix of people with experiential information were used as key and primary stakeholders, covering a variety of socio-economic, cultural and public issues.

• Flexibility: In this way, the combination of techniques was considered for the development of planning, which was evaluated through facilitation skills.

• Optimization: which is related to financial resources and time, and in order to reduce costs and avoid wasting time, only the information that seemed necessary was considered.

Therefore, the advantages of the participatory rural evaluation method include the following (Nouri and Ruknuddin Eftekhari, 2006):

• Using group interview methods

• Attention to all stakeholders and stakeholders

• Non-interference of the researcher's presuppositions in all stages of the research

• Empowerment of local communities

• Freedom of local communities in choosing planning formats

• Strengthening the spirit of participation

• Short time interval between information gathering process and data extraction and analysis

• Intimate relationship between the researcher and the target group

• Reducing study costs

• Collective agreement and commitment to the issues

Also, the most important role of the researcher in this type of research is facilitation and includes the following points (Estrella and Gaventa, 1998, Nouri and Ruknuddin Eftekhari, 2006):

• The facilitator should present the methods, objectives, concepts and potential results in the first contact with the local community.

• The facilitator should agree on the place and time of the facilitation workshop with the target group.

• Facilitator should give an oral introduction at the beginning of the workshop and guide the participating members to enter the participatory rural assessment.

• Facilitator should behave politely during the implementation of the program and maintain his interest in participation and should not impose his personal opinion on the participants.

• In general, the characteristics of a facilitator are flexibility, asking questions at the right time, listening well, encouraging participation and emphasizing important issues.

2.2.1. Validity and validity in rural participatory assessment method

Validity is available from many common methods. Validity in this research means the closest the findings are to the reality and validity means stability in the results. Results with high validity also have high validity. But

when there are systemic orientations, validity can be high while validity will be low (Catley, 1999). that in rural participatory assessment methods, the reliability of information depends on factors such as ability and type of facilitating behavior (Nouri and Ruknuddin Eftekhari, 2006).

2.2.2. Number of samples and sampling method

Since in the working method of this research, which uses rural participatory evaluation, the results are not generalizable, therefore, unlike other common methods, sampling was not done. Basically, sampling is done when we intend to generalize the results. Also, in this research, an effort was made to have all identified stakeholders present in the collaborative workshop process of developing sustainable livelihood strategies for the local communities of Mote National Park and Wildlife Sanctuary.

2.2.3. Analysis of stakeholders

Those involved in the Farsi translation of the English word Stakeholder. Stakeholders and stakeholders are individuals, groups and organizations that directly or indirectly affect planning or are affected by its results. Identifying and analyzing these people is one of the basic principles of strategic planning for the sustainable livelihood of the local community of Mote National Park and Wildlife Sanctuary. When we start the strategic planning process of sustainable livelihood in Mote region, we face several groups of people, there are some people who will benefit from the results of our program and are somehow considered as the target group of interventions. The other category is groups or organizations that share interests with us and can provide support resources to program designers and implementers. Another group of people, groups, and organizations are those who really suffer from advancing the program and achieving its goals, or imagine that they suffer. Therefore, in this research, after interviewing the experts and using the rainbow diagram, the analysis of the beneficiaries of the study area has been done as described in Fig 1.

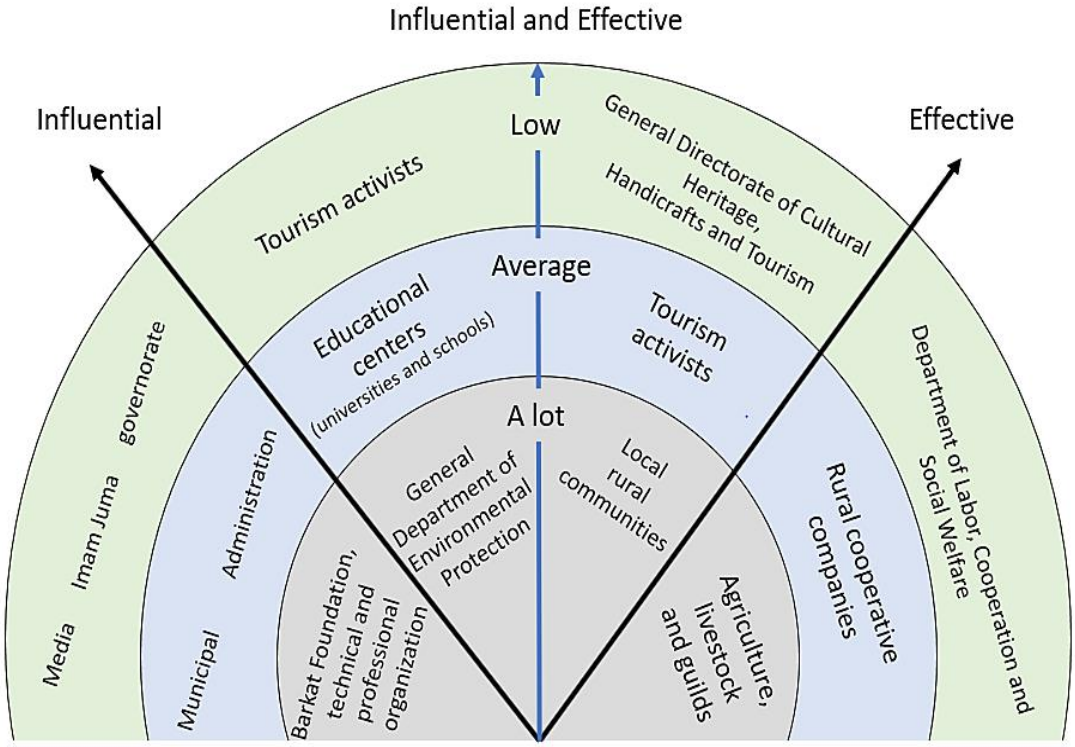

Fig. 1. Rainbow diagram of stakeholder analysis of Mote National Park and Wildlife Sanctuary

3. Results and discussion

3.1. Analysis of research threads

Examining the characteristics of a good livelihood from the perspective of stakeholders: At the beginning of the participatory workshop process of strategic planning of sustainable livelihood of the study area, first by asking a question that what are the characteristics of a good job from your point of view, the attendees were asked to tell what they expect from a livelihood. Finally, after discussion and agreement among the participants in the workshop, the features in question were transferred to the paper table as described in the following Table 1:

Table 1. Characteristics of a good job from the point of view of stakeholders

To be honorable	Sustainability	Less capital	Good and decent income
Independent	No harm to the environment	No pollution	Being entrepreneurial
Independent	Can be developed and expanded	Availability of raw materials	Being compatible with geographical and climatic conditions

3.1.1. Livelihood suggestions according to Tofan Andisheh method

In the second stage of this workshop, the participants were asked to write down the livelihoods that can be done in their place of residence based on the characteristics of a good job. At this stage, the jobs were prioritized based on the frequency and the most repetition in order to be discussed in the next stage of the workshop process. In this section, the participants were divided into two groups and presented their desired jobs through brainstorming with the help of workshop facilitators. Looking at the results of this part of the workshop, it can be seen that activities such as nature tourism (ecotourism) and sustainable agriculture and animal husbandry have the highest frequency, which also reflects the majority opinion of the local community=

3.1.2. Examining the proposed jobs with the comparative matrix method by weighting the criteria

In the third part of this workshop, a comparison of the jobs proposed in the second stage of the strategic planning process for sustainable livelihoods of the local communities of the National Park and Mote Wildlife Sanctuary was discussed through their weighting. In this way, based on the characteristics of a good job extracted from the first stage of the workshop, it will be weighted and compared with the desired jobs of the participants in the second stage of the workshop, and we will have the livelihood priority. Thus, in the first group, business participants were ranked based on the highest score as described in the following comparative matrix table (Tables 2-3):

Table 2. Group work table of the first group (from Mote village and Laybid city)

Jobs / Features	Gold making	Tourism	Handicrafts	Greenhouse	Animal husbandry	Aquaculture	Horticulture	Stone industries	Beekeeping	Gulab Giri[1]	Saffron production
Income 3*	15	12	9	9	15	12	9	15	9	9	9
low capital 3*	9	3	9	3	6	3	9	3	9	9	6
Sustainability 3*	15	15	15	3	12	3	6	6	6	9	9
Pollution 2*	2	2	10	6	2	10	2	10	10	10	10
Market 3*	15	9	15	15	15	15	15	15	9	15	15
Climatic conditions 1*	1	2	5	4	5	2	2	5	3	4	5
Raw materials 2*	10	6	10	10	6	6	4	6	10	10	10
Accessible 2*	8	10	10	10	10	8	10	6	8	10	10
Entrepreneurs hip 2*	8	8	8	10	8	10	8	10	8	8	8
Independent 2*	10	8	8	10	10	10	10	10	10	10	10
Practical 2*	6	10	10	10	10	8	4	6	8	10	10
total	99	83	109	90	99	87	79	92	90	104	104

1. Extracting essential oil from *Rosa damascena*

Table 3. Group work table of the second group (from Hasan Robat village)

Jobs / Features	Ecotourism	Livestock and poultry breeding	Greenhouse	Packaging of agricultural products	Handicrafts
Income 3*	12	9	9	12	9
Market 2*	6	10	10	4	4
Capital 2*	6	8	6	8	6
work force 2*	8	4	4	8	8
Environmental 3*	15	6	3	15	15
Total	49	37	32	47	42

Environmental management areas encompass various socio-economic and ecological dimensions, collectively referred to as socio-ecological systems. In this context, capacity building and resilience of local communities, as the social subsystem of protected environmental areas, are of paramount importance. Additionally, capacity building of stakeholders in these areas can pave the way for participatory conservation of protected areas (Briassoulis, 2015; Wu and Tsai, 2016). Regarding the opportunities for development and diversification with livelihoods compatible with Mouteh National Park and Wildlife Refuge, new markets and activities related to the value chain can be mentioned. New markets in the villages of Mouteh and Laibid, such as handicrafts, rosewater production, saffron cultivation, goldsmithing, and activities in the stone industry, as well as nature tourism livelihoods, agricultural product packaging, and handicrafts for the village of Hasan Robat, can provide a suitable opportunity to connect local communities around Mouteh National Park and Wildlife Refuge with the local and macro economy. This, in turn, facilitates participatory conservation of the Mouteh area.

4. Conclusion

Based on the results obtained from the analysis of the prioritization matrix tables, it was found that the stakeholders of Laybid city and Mote village consider jobs such as handicrafts, rose water extraction and saffron production as the most sustainable and developable jobs in the lands of these areas. These businesses, which are among Iran's native businesses and are compatible with the region's ecosystem, can bring significant economic, environmental and social benefits. The development of these businesses, in addition to strengthening the economic and environmental aspects of sustainable development, will also contribute to social development, because they are culturally aligned with the indigenous social contexts of these areas. Jobs such as stone industries, animal husbandry and gold making are also of moderate importance, while jobs such as tourism, fish farming, horticulture and greenhouses are less important in these areas. Therefore, it is highly recommended to create occupational working groups, provide skill training and facilitate support for the occupations of the first group.

Also, the results show that the beneficiaries of Hasan Rabat village consider jobs such as tourism, packaging of agricultural products and handicrafts more important than raising livestock and building a greenhouse. These results were obtained and prioritized based on the local conditions of the village and in a cooperative and working group manner. Therefore, it is highly recommended to develop these jobs in Hasan Rabat village by creating job groups, providing skill training and facilitating support. In general, paying attention to the development of indigenous and sustainable businesses can not only help to improve the economic and environmental situation, but can also lead to the strengthening of local and social culture. Supporting these businesses through training, financial facilities and creating appropriate infrastructure can play an important role in achieving sustainable development in these areas.

In addition, development programs should investigate the needs and capacities of each region in a more detailed and in-depth manner so that they can provide more appropriate solutions to create sustainable employment and strengthen the local economy. Since the active participation of the local community in the development process is of great importance,

emphasis on participatory programs and the use of local knowledge and experiences can lead to better results and strengthen the social and economic cohesion of rural areas. Creating communication networks between stakeholders and governmental and non-governmental organizations can also play an important role in facilitating the development process and more effective implementation of programs. Therefore, increasing natural capital through the sustainable protection of natural resources, increasing human capital through providing skill training to local communities on diversifying livelihoods, and increasing the access of livelihoods proposed by the research to the financial capital of supporting funds by strengthening the entrepreneurship of local communities. It is recommended.

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