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Environmental and Community Stability of a Mountain Destination: An Analysis of Residents' Perception

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Abstract: This study aims to explore the use of the social-ecological system (SES) in tourism of a mountain area. Authors examined residents' perceptions of tourism impacts on four SES aspects: ecosystems, local knowledge, people and technology and property rights institutions. The aim is to find area that will be a "common ground" for community and area that can be a source of conflict and will require additional work to solve the differences. Second objective was to examine residents' perception towards future local development tourism policies (winter tourism, seasonality and environment and culture) and how those policies can affect natural, socio-economic and cultural aspects of mountain area. Residents' perceptions of sustainable tourism development potential, perceived tourism impacts, analysis of community attachment and employment sector of stakeholder were involved in this study. The authors applied the Q-methodology, as one SES-allied approach, in a small mountain community of Kopaonik, the Republic of Serbia. The results revealed that residents' agreement/disagreement is connected with two aspects: ecosystem and property rights and that ecosystem can be significantly influenced by all three development policies. Findings suggest that development of future natural conservation plans and new cultural attractions can have positive effects on all parts of social-ecological system. Some practical implications of those findings for tourism planning and development are also discussed.

Keywords: sustainable ecology; sustainable tourism; social-ecological system; residents' perception; tourism impact; tourism policies; sustainability; mountain

1. Introduction

Natural resources are often used by societies for livelihood, cultural expression and food but for those societies that depend upon natural resources some conflicts may arise, since it is necessary to determine who have access and who can use those resources [1]. Relationship between societies and natural resources can shape day-to-day activities and long-term wellbeing [2]. If natural resources are limited in some sense (for example, from ecological or geographical aspects), local societies and authorities may face challenges in ensuring sustainable development. Resolving the conflicts

should be environmentally responsible [3], should bring economic benefits [4] and should encourage proactive stakeholders' participation [5] but before any action, potential conflicts should be identified. Usually, mountain communities use natural resources as a base for creating tourist offer and tourist activities. One way for ensuring environmental and community stability of mountain areas is to take into consideration local residents' perceptions towards tourism impact on their community. It is well known that tourism development relies on the goodwill of the local residents [6–8], so destination managers should provide community's support. Brehm and associates [9] noted that it is also important to discover the emotive relations between residents and their places and what they want to protect and preserve. Also, meeting the needs of the host population in terms of improved living standards in the short and long term is one of the objectives of sustainable tourism in mountain areas. Many mountain communities have been developing ecotourism in order to avoid or solve problems of environmental degradation and underdevelopment.

This paper explores the potential use of the social-ecological system to consider tourism in mountain areas. Authors used Q-methodology, framed by relevant social-ecological systems (SES) aspects, to measure residents' perspectives on the scope and direction of tourism development on Kopaonik mountain (the Republic of Serbia). The purpose of the paper was twofold. First, to examine perceptions of those who live and work on Kopaonik towards the statements across all four aspects (ecosystems, local knowledge, people and technology and property rights institutions), to identify consensus and potential conflicts and to show which area will be "common ground" for community and which area can be source of conflict and will require additional work to solve the differences. Second objective was to examine residents' perception towards future local development tourism policies (winter tourism, seasonality and environment and culture) and how those policies can affect natural, socio-economic and cultural aspects of Kopaonik area.

The results of this study will help tourism managers and policy makers to understand how current and proposed management activities affect individuals in terms of their preference for services and experiences. Also, results express opportunities for higher public participation of different stakeholders in order to improve the quality and legitimacy of decisions made regarding Kopaonik's sustainable long-term tourism development.

2. Theoretical Framework

2.1. Concept of the Social-Ecological System

Tourism is a socio-economic activity which brings positive—e.g., provides income and jobs for the local community [10], increases understanding of natural and cultural heritage [11] but also negative impacts on the landscape [12] and local community [13]. Important elements for maintaining the attractiveness of one area are the quality of the landscape and natural environment and the level of local community's agreement to develop tourism [14]. The pressure of tourism on the natural environment and host communities is increasing and in some areas, where tourism relies on landscape quality, natural resources are under pressure due to over exploitation. Socio-economic benefits cannot be the main goal in tourism development if it is ecologically undesirable, so it is necessary to provide balance between protection of nature and socio-economic development [15]. Kirchhoff et al. [16] and Levin et al. [17] argued that a social-ecological system (SES) would be very useful in understanding and establishing synergies between tourism and landscape since this perspective advocates that tourism and landscape are conceptualized as an integrated system.

Social-ecological system (SES) is a set of critical resources (natural, socio-economic and cultural) whose flow and use are regulated by a combination of ecological and social systems [18]. This perspective is composed of four aspects: ecosystems (ecological drivers), local knowledge (social drivers), people and technology (social and economic drivers) and property rights institutions (political drivers) [19].

One of the key aspects of the social-ecological system is to reveal how members of local community react to environmental and community changes and shocks caused by different factors (e.g., climate change, economic change). Use of social-ecological system can bring useful information for creation of sustainable plans and may have implications on social system (increasing job opportunity for local community) and ecological system (preventing biodiversity loss). Previous research [20] has shown how important is SES to be a part of development planning, since it can have great influence on raising the standard of living of people who depend on natural resources. In order to gain sustainable local development, SES highlights that successful natural resource managing can be achieved by managing members of local community who use those resources for food, livelihood and identity [21]. Therefore, stakeholders and community have significant role in managing natural resources [22] and policy development [23].

For the SES, sustainability is not and end goal but an ongoing process which incorporates local and scientific knowledge [24]. Tourism development on those areas with sensitive resources should provide sustainable solutions for possible variability and changes (affecting both social and ecological systems). It is impossible to completely avoid those impacts but SES approach can minimize and monitor those disturbances and hold system in a desirable state.

The quality of natural resources on mountains directly influences those whose livelihoods depend on it. Since natural resources are highly uncertain due to different influences (impact of industries like tourism, impact of climate changes . . .), societies must adapt to the dynamics of the system not only to sustain but also to develop their livelihoods. In this paper, authors used the social-ecological system to reveal what mountain residents think of the environment and community quality and how tourism affects those areas.

2.2. Mountain Communities and Tourism in the Social-Ecological System

The majority of mountain communities live in poverty, their economies depend on agriculture and they are facing with changes in human demographics. Local communities have developed strong ties with the land, since mountain ecosystems provide conditions for the health and livelihood of community members and their knowledge and skills. Mountain human communities are under pressure not only from macro-environmental drivers such as climate change but also from human-driven factors such as population growth/decline, economic development and urbanization and any extreme influence of these drivers can cause unique vulnerabilities [25].

Tourist activities have become increasingly interested in these communities, because of the natural and cultural values of the territories. If tourism brings positive effects, mountain communities can transform their lives and improve their welfare but need to keep their cultural traits that make them unique. Mountain destinations attract tourist for many reasons, like unique landscapes and wildlife, fresh air, local culture and its history and heritage and possibility to experience snow-based or nature-related activities. Mountain ecosystems, communities and economies are exposed to the positive and negative impacts of tourism development. These impacts can be divided into three groups [11,21,26]:

1. Environmental impacts. Mountains have a very fragile landscapes and ecosystems and they are influenced not just with the impact of natural hazards (landslides, earthquakes, torrents, etc.) but also with human activities (one of them is tourism). In order to develop tourism on mountains, tracks, paths, accommodation facilities and other things need to be built. This can cause vegetation clearing and soil erosion, pollution, while tourist concentration in small areas can increase noise and waste.
2. Socio-cultural impacts. Negative impacts are reflected in disturbances of local community because of the high and uncontrolled concentrations of tourists and its activities but also in reducing quality and quantity of natural resources like firewood and fresh water. Local culture and tradition can be changed by adopting tourists' lifestyle and products.

3. Economic impacts. If it is well managed, tourism can increase opportunity for local employment, reduce poverty and diversify local economy but also improve quality of infrastructure and local services. On the other side, unsustainable tourism development can offer only seasonal and short-term jobs, with poor working conditions and revenue that will bring benefits only to externally owned companies neglecting local needs.

Mountains can have cultural importance due to its sacred sites and they are usually correlated with higher biodiversity [27]. Landscapes with its biophysical and geographical characteristics have significance for local community and can create political, socio-economic and cultural diversity from other communities [28]. The main question that stands in front of the future researchers and policy makers is how to ensure adequate adaptation of mountain human communities and ecosystems to the dynamics of a social-ecological system in order to provide sustainable livelihoods?

2.3. Site Description

Kopaonik Mountain represents a very complex and diverse geospatial entirety. The diversity of geographical conditions made it possible to develop several human activities, which found the sources of their existence in the exploitation of the natural resources of this area. Kopaonik is distinguished by a number of specificities, among which are great tourist values. Great tourist value stems from good traffic connectivity, diversity of landscapes, the existence of excellent terrains for winter sports and the richness of thermo-mineral waters. Exploitation of the ore and the development of tourism on Kopaonik are in some collision, which must be explored because these activities are often developed at the same sites but basically exclude each other.

With its highest peak of 2017 m, Kopaonik is among the highest mountains on the Balkan peninsula [29]. The spaciousness of a massive surface of over 2750 km^2 reflects favorably on the sustainability of the winter tourist season. In some parts, the snow persists for 4 to 6 months [30].

About 70,000 inhabitants live in four municipalities of Kopaonik (Raška, Brus, Blace, Kuršumlija, Figure 1). According to the basic economic indicators, the municipalities in the territory of Kopaonik (Brus, Raška) fall into the least developed group of municipalities in the Republic of Serbia. The largest number of employees works in the manufacturing industry, in the mining and tourism sector. The average earning per employee is significantly lower (between 22% and 45%) than the state average earning [31].

Tourism is considered to be the main bearer of the economic development of Kopaonik area. For the tourist transformation of Kopaonik, two moments are very important: the establishment of a special working organization for the development of tourism "Kopaonik" in 1980 and the declaration of the Kopaonik National Park in 1981 (covers an area of 12,000 hectares) [32]. The ski center Kopaonik has terrains that belong to first class of trails and also has trails for alpine and Nordic skiing with a total length of 62 km.

The mountain Kopaonik is the dominant mountain in comparison to other Serbian mountain winter centers. Growth of the tourists in the last five years (2012–2016) was almost double—from 67.175 tourists in 2012 to 117.942 tourists in 2016, while the number of accommodation facilities (hotels, villas, apartments, etc.) also recorded a double growth—from 30 accommodation facilities in 2012 to 63 different facilities in 2016. There are a number of hotels, especially in the central part—13 hotels, 4 apartment hotels, 2 mountain huts and 2 resorts. In the vicinity of Kopaonik, in the weekend resort, there are 3 hotels and a mountain lodge, while at the base of the mountain, there are 2 hotels. The main characteristics of Kopaonik's tourist traffic are high participation of domestic tourists: 77% in total tourist arrivals and 85% in total tourist nights, while foreign tourists come mostly from Bosnia and Herzegovina, Slovenia, Germany, Italy and Austria [33].

Intensive, partly unregulated construction led to unplanned structure and number of accommodation facilities, while the necessary public infrastructure for these facilities was not built. The present management model is considered as undefined and inconsistent among key stakeholders and non-functional in terms of the division of administrative responsibilities. As obstacles to further

development, some factors were identified: tourism infrastructure and offer, traffic accessibility and road connectivity, while representatives of the Kopaonik National Park particularly pointed out the problem of unregulated construction and unplanned capacity development as a major threat to the preservation of natural resources and further development of tourism on Kopaonik [34].

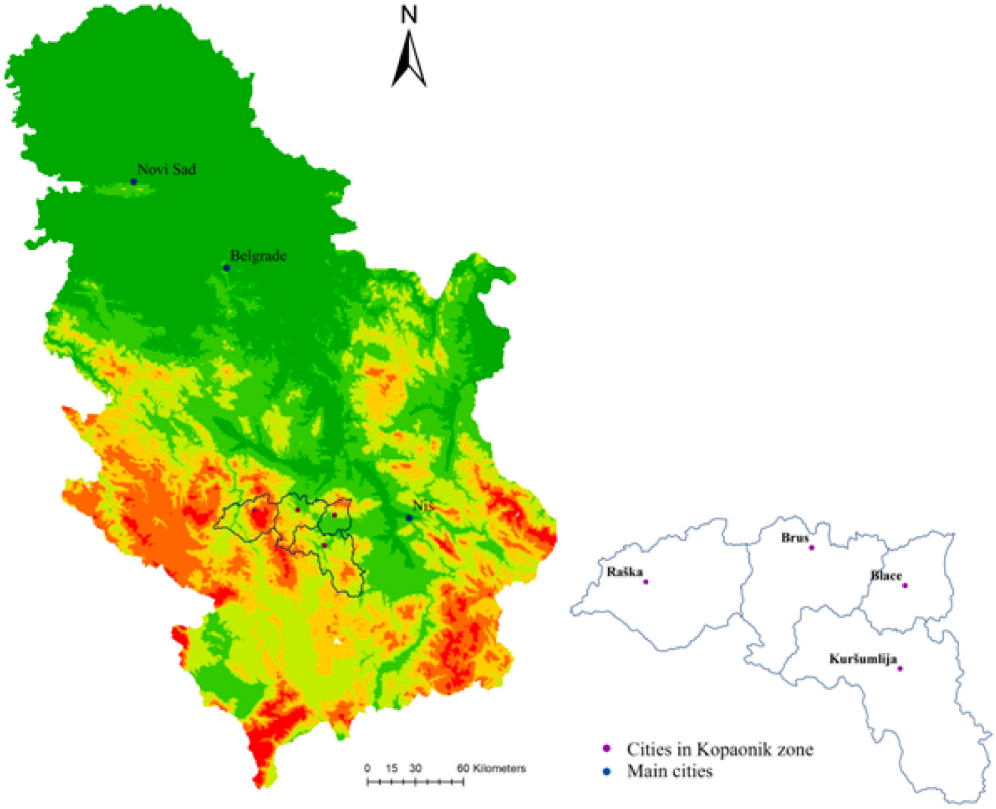

Figure 1. Position of Kopaonik mountain in the Republic of Serbia.

3. Materials and Methods

Authors used Q-methodology as one SES-allied approach in order to gain critical insights into the proposed issues. This methodology was originally developed by William Stephenson [35] and converts stakeholders' subjective views into analyzable quantitative data. Q-methodology enables researches to find out which key issues stakeholders prioritize, what prevailing perspectives exist among stakeholders and to identify areas of their consensus (general agreement) and conflict (general disagreement). Establishment of patterns within and across individuals rather than patterns across individual traits (for example age) is one of the main differences between Q-methodology and standard survey [36,37]. Q-methodology is an effective tool for evaluating stakeholder perspectives, since researchers do not have to engage a large number of individuals but they should be purposefully selected with different and well-formed opinions about the topic [38]. The methodology has five steps: development of the "Q concourse", construction of the Q-set, selection of Q subjects (P-set), subject responses and sorting (Q-sort) and data analysis [36]. Participants are asked to sort (rank) the statements (Q-sorts) according to their own point of view (for example, from strongly disagree to strongly agree) related to a particular issue. During Q-sorting, participants are asked to react to statements in relation to all other statements (unlike a survey where respondents have to independently answer to each question). In the end, participants can give a brief explanation why they chose some Q sort. Q methodology has been widely used in environmental studies [39–42] and more and more for critical interpretation in tourism studies [21,43–45].

3.1. Step 1: Selection of the Statements to Be Included in Q-Sort

To concourse the communication, authors used different sources. Authors interviewed 29 different stakeholders-local business owners (7), members of non-governmental organizations (3), local elected officials (3), employees from national park Kopaonik (2), Institute for nature conservation of Serbia (2) and Ski resorts of Serbia (2) and citizens (10) to collect information on the current condition of tourism development on Kopaonik and future stakeholders' expectations for the development of Kopaonik. Other sources external to the study such as standardize instruments and previous studies related to the examination of tourism impact [7,21,46,47] were used to build the concourse. 63 unique statements were collected concerning tourism development and its impact on local community in mountain resorts. Authors determined that a 23-statement Q-set was the most suitable for three reasons. First, these statements were found to be most appropriate given the study's aims (they represent the universe of opinions) and construction within an SES framework (each statement was sorted into one of four SES systems). Second, in order to avoid insufficient participation of selected stakeholders, authors chose a shorter length Q-set built upon relevant SES aspects of tourism on Kopaonik (authors believed that a much longer Q-set would require additional time and energy to successfully sort statements). Third, authors chose the ranking scheme −3 to +3 with a forced normal distribution and this scheme means that two statements could be assigned to each extreme (+3 and −3), three statements for the next extreme and the most statements (five) could be placed in the neutral (0) category (Figure 2). Selected statements can be seen in Table 1.

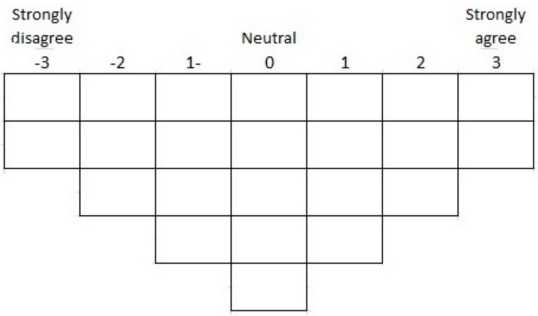

Figure 2. Response sheet for Q-sort used for stakeholders on Kopaonik mountain.

3.2. Step 2: Identifying Q-Sort Participants

The next step was to identify the key groups and individuals who live on the site, have an interest or role in developing Kopaonik as a tourist destination. In order to survey a wide variety of viewpoints, authors developed initial list of business owners searching web sites and planning documents. Two categories of residents were identified: citizens (native born and non-native born on Kopaonik) and business owners and their employees (workers in tourism sector and workers in other sectors). Authors intended to interview citizens (older than 18 years) during site visits (selecting randomly respondents), while 246 business owners and their employees were invited (via e-mail or phone call) to meet with authors and to participate in a stakeholder meeting in a one-on-one setting. 196 employees agreed to participate in the research and authors assigned a date and place to meet with them, while 190 citizens were interviewed during site visits (total—386 respondents).

3.3. Step 3: Site Visits and Qualitative Survey

Authors visited Kopaonik several times in May, June and July 2017 to meet with residents and complete the research. Citizens were asked to take a part in the research as someone who is living on the mountain. The information about their job position or type of the sector were irrelevant for the research. Each resident was introduced with the purpose and instructions for the Q-sort exercise and after that, small cards, with 23 statements printed on them, were handed to participants.

In the first phase, each participant was asked to sort the cards into three piles (most agree, least agree, or neutral) and after that cards were placed into a box located in one of the seven columns (+3 = strongly agree, 0 = neutral, −3 = strongly disagree). This is a forced sorting because each column has a limited number of boxes, while the Q-sort follows a defined quasi-normal curve following the design of Carr and Heyman [48].

In the second phase, participants gave a brief explanation on why they chose the statements they most agree or most disagree with. The entire interview process with each stakeholder took twenty to thirty minutes. In the end of this step, Q-sorts were compiled into a database.

3.4. Step 4: Data Analysis

In order to analyze residents' Q-sorts and to identify dominant perspectives on the proposed issues, authors used PQMethod software [49]—four separate analyses, each using the same Q set, were conducted: native born citizens (115), non-native citizens (75), workers in tourism industry (119) and workers in other sectors (77). The ranking of statements across perspectives was used to identify consensus and potential conflict and to show which area will be "common ground" for residents and which area can be source of conflict and will require additional work to solve the differences.

In order to analyze the opinion of the residents towards the future development policies, a factor analysis was completed by using the Principle Component Analysis algorithm (PCA), while the interpretation of the factors was simplified by using varimax orthogonal rotation. Authors Addams and Proops [50] recommended that only those factors with eigenvalues greater than one should be kept. Adhering to this criterion, factors were chosen based on their statistical significance and the amount of variance they explained. During the next step, factors were isolated and connected to respondents and their demographic information, formatting sub-population of like-minded individuals.

4. Results and Discussion

4.1. Descriptive Analysis

The average age of native born citizens is 45 years and the sample is about equally divided by the gender (53% are male), while for non-native born citizens, the average age is 41 years and female respondents mildly dominate (58%). The average number of people that consist the family for native born citizens is 3 persons and the average number of children under 18 years is less than 1 (0.8). On the other side, the average number of people that consist the family for non-native born citizens is 2 persons and the average number of children under 18 years is also less than 1 (0.4). These results indicate that families on Kopaonik are small conglomerates and the worrying fact is that population is ageing. The majority of respondents from native born group have the average net household monthly income of 350 euros, while the majority of respondents from non-native group have 300 euros. With respect to the length of residence, most of non-native born citizens live on Kopaonik between 10 and 15 years.

When it comes to the second group of residents (workers in tourism industry and workers in other sectors), the average age of workers in tourism sector is 35 years, while for workers in other sectors 41 years. Stakeholders from tourism sector work in hotels (56), apartments and villas (28), restaurants (17), souvenir shops (9), travel agencies (6), national park Kopaonik (3), while stakeholders for other sector work in agriculture (21), forestry (16), construction industry (10), retail trade (9), transport (8), financial and insurance companies (5), public administration (4), human health and social care (4). Temporary jobs are much more present for workers in tourism sector (67% in tourism sector compared to 43% in other sectors).

4.2. Linking Perspectives to Socio-Ecological Conditions on Kopaonik

In Table 1 are presented differences between groups. Within the first component of social-ecological system (ecosystem), all groups agree that tourism development on Kopaonik depends on the health of the

natural environment (1) and that Kopaonik should be prepared for negative impacts of climate change (2), which shows that stakeholders are concerned of impact that climate changes can cause. Native born residents are less in agreement than other groups that tourism industry is environmentally friendly (3) and more in agreement that economic policies are damaging to the environment (4). These results can be explained perhaps with the fact that native born residents are "witnesses" of major changes during the years caused by construction facilities and other tourism activities (somewhat lower scores of non-native born residents compared to native born can be result of different length of residence).

Table 1. Statements and mean Likert scores for citizens and business owners and their employees.

	Statements	Native Born Residents	Non-Native Born Residents	Workers in Tourism Sector	Workers in Other Sectors
	Ecosystem				
1	Tourism on Kopaonik is dependent on the health of the natural environment.	0.96	0.73	1.25	1.01
2	Kopaonik needs to be prepared for negative impacts of climate change.	0.52	0.56	0.94	0.39
3	Tourism industry on Kopaonik is environmentally friendly.	−1.50	−0.88	0.33	0.28
4	Economic policies are damaging to the environment of Kopaonik.	1.02	0.76	0.22	0.49
5	Climate change is the major threat to Kopaonik and its economy.	0.81	0.31	1.43	0.59
	Local knowledge				
6	Local community has strong cultural ties to their natural environment.	0.38	0.29	0.47	0.36
7	Education of local community is the key for ensuring a stable future of tourist resources on Kopaonik.	1.72	1.51	1.14	1.53
8	Tourists leave Kopaonik with a better understanding of the local environment.	−0.96	−0.99	−0.27	−0.36
9	The local people's way of life in the community has changed to suit tourists demands/needs.	−0.61	−0.71	−0.48	−0.51
10	It is important to provide information that affords residents the opportunity to learn or discover the connection between human activities and environmental quality.	0.63	0.48	0.33	0.39
11	Tourists' expenditure is used positively towards improving the lives of the local people and improving service in the community.	−1.22	−0.99	−0.69	−0.78
12	The presence of tourists plays a role in changing tradition and cultures of the local people.	0.39	0.44	0.29	0.42
13	The tourism practice at Kopaonik has more characteristics of the mass tourism practices than sustainable tourism practices.	0.76	0.65	0.59	0.48
	People and technology				
14	Tourism creates jobs more for externals than residents.	0.96	0.99	0.67	1.01
15	There are limited job opportunities in industries outside tourism on Kopaonik.	0.82	0.59	−0.88	1.06
16	Tourism benefits only a small group.	1.02	0.91	0.48	0.94
17	Development of tourism on Kopaonik contributions in the increasing of cost of living and local people cannot afford some of the services.	0.87	0.92	0.32	0.51
18	Tourism causes an increase in excessive and uncontrolled building and loss of open spaces.	0.97	1.04	0.68	0.99
	Property rights				
19	Local government represents all stakeholder groups equally.	−1.39	−1.28	−1.68	−1.11
20	Environmental policies on Kopaonik address the concerns of all local stakeholders.	−0.84	−0.88	−1.12	−0.91
21	The quality of public services like water, sewerage and public transport in the local communities has improved due to tourism activities on Kopaonik.	0.92	0.95	0.78	0.69
22	Active participation and collaboration of local community closest to the resources is important to reduce internal conflicts between competing interests.	1.04	0.96	0.94	0.99
23	In order for natural resources to be managed more effectively and utilized more sustainable, it is critical to have local participation and ownership or control at the grassroots level.	0.85	0.92	1.00	0.97

Within the second component (local knowledge), all groups of stakeholders recognized the importance of education of local community (7) since mountain tourism destination require healthy conditions to be successful. Native and non-native born residents think that tourists leave Kopaonik without adequate understanding the local environment (8), indicating that tourist offer should be more diverse and include elements of local culture (e.g., traditional events, demonstration of local crafts). Stakeholders induced that some services and infrastructure, that local community use, were improved (new water collector, new road) but not in sufficient quantity and quality (11). For example, although the water treatment plant has been reconstructed, it still has insufficient capacity. For the past couple of decades, Kopaonik has been developing as a tourist center. The construction of a large number of new hotels and significant expansion of accommodation capacities and accompanying facilities were accompanied by inadequate development of communal infrastructure (water supply and sewerage). Today's needs of the tourist center require the production of 40 L/s of drinking water, which doubles the existing capacities of the water treatment plant. The sewerage system on Kopaonik includes only the main collector but due to inadequate technical solution, the plant is out of function and it is a threat for health of natural resources. Waste water flows directly from the main collector, without prior treatment, to the nearby Bistrica River, which eventually became a "dead river." An additional problem is the lack of a sewage network for the "weekend settlements" that has 2000 weekend houses.

Within the third component (people and technology), local residents (both groups) and workers in other sectors agree that economic benefits (16) and job possibilities created by tourism (14) are mainly for non-local and small group of people. Workers in tourism sector are the only group that expressed disagreement with the fact that there are limited job opportunities outside tourism (15). Native and non-native residents highlighted that tourism increased some cost of living (for example, the price of houses has been increased two times, water bills are higher). Prices of some products like food, beverages and clothes are much higher during winter season. Uncontrolled development (18) of real estate has led to some irreversible changes on Kopaonik (large illegally built settlements that already articulate their interests on the reconstruction of the future ski system). The loss of strategic direction and the absence of a management mechanism caused the emergence of uncontrolled interests of private entrepreneurs and the occurrence of uncontrolled construction. Deviation from the planned capacity at certain locations significantly jeopardized the functioning of the general infrastructure-great pressure on existing capacities. Also, the legal-administrative mechanism for the protection of Kopaonik is relatively weak, since the institutions of protection do not have sufficient strength (limited budget and human resources). Further devastation can have a negative impact on the competitiveness of Kopaonik as a mountain destination, so bodies for protecting the environment and preventing construction should develop an adequate development plan.

Within the fourth component (property rights), all groups hold negative view whether stakeholders group are equally represented by local government (19). This negative view may cause concern since it shows that stakeholders are not satisfied with the degree of involvement in making decisions for future tourism development. According to previous research [51,52], it is shown that one of the basic preconditions for successful planning and management of the sustainable tourism development is the active involvement of the local population in this process and that any use of resources for the purposes of tourism development, without the consent of the local community, may be assessed by the local population as an abuse and constitute a disincentive factor in the tourism development [53]. The good thing is that local residents (both groups) expressed positive attitude towards the impact of tourism activities on the quality of public services (21). All stakeholders agree that internal partnership can be an important factor for successful development of Kopaonik area through active participation and collaboration of local community (22). The future culture of Kopaonik area should be focused on strong local control, independence and participatory democracy (by organizing meeting). Partnership is also recognized as integral to success for sustainable management of natural resources (23).

4.3. Areas of Consensus and Concern

In order to identify consensus and potential conflict and to show which area will be "common ground" for stakeholders and which area can be source of conflict and will require additional work to solve the differences, the following categories were identified (Figure 3):

1. *High Consensus/Low Concern*—statements within this group express general agreement/low importance of the issue and can offer opportunities for good-faith efforts with low conflict.
2. *High Consensus/High Concern*—statements within this group express general agreement/high importance of the issue and can offer opportunities for collaboration, while conflict may be low.
3. *Low Consensus/High Concern*—statements within this group express general disagreement/high importance of the issue and can cause high level of conflict, so it is recommended that managers pay special attention to this group of statements.
4. *Low Consensus/Low Concern*—none of the statements belong to this group.

Consensus is viewed as "general agreement" or "the judgment arrived at by most of those concerned" [54], while any disagreement can bring obstacles in decision making process. Statements were assigned to one of the four groups depending on disparity or similarity of residents' scores.

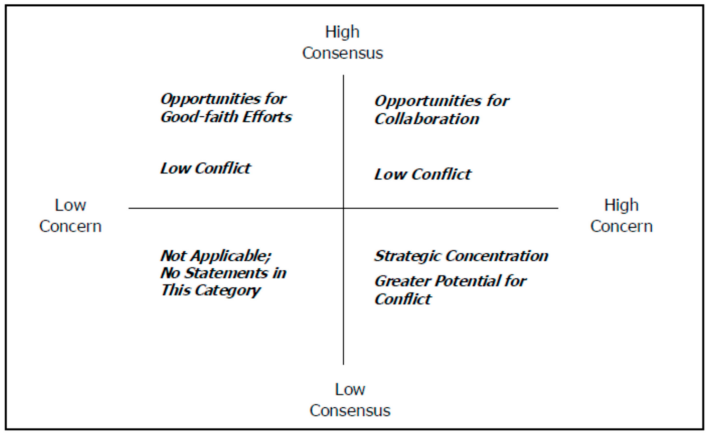

Figure 3. Model of consensus and concern for Kopaonik–residents' evaluation.

4.3.1. Areas of High Consensus/Low Concern

The statements within this group are labeled with "high consensus" since they are rated similarly. On the other side, statements are labeled with "low concern" since the average stakeholders' rankings were low (between +1 and −1). Although residents expressed consensus for these statements, they are not ranked as very important. Possibilities for conflict are relatively low, which can be explained by the fact that residents are maybe more willing to devote their energy to more important issues. This fact does not have to mean that residents have a lack of interest for those issues but a belief that separated management practices are adequate and should be continued.

Residents indicated that they are not against ensuring local participation and ownership or control at the grassroots level (#23) or that climate change is not irrelevant for economy (#5) but for them there were some other issues that are more important, thus the relatively low rankings. Some residents noted that they think that local authorities do not have to do more to prepare Kopaonik for negative impact of climate change, since the current attention and proposed actions are adequate. Also, residents agreed that education of local community is important (#7) for future development of Kopaonik but they think that local managers are doing an adequate job.

Statements within this group showed that residents are satisfied with existing management practices and they believe that competent authorities are taking or will take adequate management actions. Also, the results showed that residents are not concerned about these issues.

4.3.2. Areas of High Consensus/High Concern

Statements in this group are labeled as "high consensus" since residents rated them similarly but they are at the same time labeled as "high concern" since their rankings were high. Those statements that were ranked with +1 and +2, with no score lower than −1 and vice versa, with −1 and −2, with no scores higher than +1, were included in this group. Seven statements were categorized as high consensus/high concern and they show that residents have strong opinion about them.

General disagreement is present with the statements #3 ("Tourism industry on Kopaonik is environmentally friendly") and #19 ("Local government represents all stakeholder groups equally"), while general agreement is achieved for the statements #1 ("Tourism on Kopaonik is dependent on the health of the natural environment"), #2 ("Kopaonik needs to be prepared for negative impacts of climate change") and #22 ("Active participation and collaboration of local community closest to the resources is important to reduce internal conflicts between competing interests"). It is interesting to note that residents' agreement/disagreement is connected with two aspects of SES–ecosystem and property rights.

Some statements from this group highlighted areas that are already marked as high priorities for Kopaonik, which shows general agreement between residents which issues are important. For instance, residents highlighted the importance of preserving natural environment since sustainable future development of the whole area depends on those resources and they need to be protected from possible negative impacts of climate change. Competent authorities should communicate with residents about actions that are viewed as important and that are already present or will be taken in the future (residents expressed attitude that active participation and collaboration of local community can solve some conflicts or avoid them before they appear). Some issues were important to part of residents while others were neutral (for example, one part of the residents believe that it is important to have all necessary information that will create better connection between community and environment) but in this case, reasons and recommendations given by these residents should be taken into account. Also, this group segregates some actions that cannot be taken on Kopaonik or will not be marked as high priorities in the future (residents marked building of tourism facilities like hotels and restaurants as low priority in the future and that local authorities should focus on some other activities like improving quality of general infrastructure, creation of more attractive tourist offerings outside in the winter season and creating conditions for the development of other sectors).

4.3.3. Areas of Low Consensus/High Concern

Statements in this group are labeled as "low consensus" since residents rated them differently but they are at the same time "high concern" because their rankings were high (whether residents agreed or disagreed). Those statements that were ranked with +1 and +2, with at least one score lower than −1 and vice versa with, −1 and −2, with at least one score higher than +1, were included in this group. The issues from this group may have high potential for conflict and it may be difficult for stakeholders to resolve them.

One way to evaluate the greatest differences between the highest and the lowest scores by the statement is to find where the largest differences are present (the highest possible gap between high and low is 6 but authors did not find any statements in this category). Only one statement shows a gap of 5 between the highest and the lowest ranking ("Tourism benefits only a small group"), while several others have gaps of 4 ("Tourists' expenditure is used positively towards improving the lives of the local people and improving service in the community", "Tourism creates jobs more for externals than residents", "There are limited job opportunities in industries outside tourism on Kopaonik"). Although some of the mentioned issues are highlighted as priorities in development strategy (like encouraging employment of local community in tourism sector, using revenue from tourism activities to raise the quality of local environment), residents expressed concern about these issues, since they believe that local managers are not doing the right things and that some actions are questionable. Statements from this group should be taken as very important since they have high potential for conflict. For resolving problems around these issues, it is necessary to take into account the opinions of all groups of stakeholders.

4.4. Residents' Perceptions towards Future Local Development Policies

In Table 2 are presented results of PCA with varimax rotation explaining the opinion of the residents towards the future possible development policies for Kopaonik (using a 5 step Likert-type scale, where 1 = total opposition/disagreement and 5 = total support/agreement). The procedure segregated four factors with eigenvalues greater than 1 (items with factor loadings less than 0.50 were not kept for the further analysis). These four factors represent 71% of the total variance of the variables, while the KMO measure of sampling adequacy (KMO = 0.668) and the Bartlett's test ($p < 0.001$) confirmed that the analysis was appropriate.

The first factor was named "Winter tourism" and explains 27.53% of the total variance (eigenvalue is 2.558), containing four items. Within this factor, residents have the opinion that the tourism development policies for Kopaonik should be focused on further development and expansion of winter tourism, with the orientation on building new and improving old ski slopes, raising attractiveness and capacities of accommodation facilities (especially those with more than 50 beds) and commercial facilities (restaurants with local and international cuisine, shops with ski equipment, souvenirs, etc.).

The second factor was named "Seasonality" and explains 18.71% of the total variance (eigenvalues is 1.858), containing three items. Items are related to seasonality policies and they explain what effects will have the maintaining the current tourism flow and decrease of the tourists during the main season, on one side, while on the other side, the effects that the development of the presence of tourists all year round will have.

The third factor was named "Environment and culture" and explains 14.12% of the total variance (eigenvalues is 1.369), with two items. Although authors Costello and Osborne [55] recommend that factor with less than three items should be removed, authors have an opinion that this factor and items within it, present an important aspect of the development policies for Kopaonik, so they were retained. Within factor, residents believe that sustainable development of tourism on Kopaonik can be achieved by better preservation and valorization of natural resources (developing new programs that are environmentally-oriented), while attractiveness of Kopaonik as a tourist destination can be improved by offering new cultural attractions like museums, ethno villages, local festivals and cultural events, etc.

The fourth factor, "No seasonality" (explaining 10.64% of the total variance, with eigenvalues 1.086) was not used as dependent variable since it contains only one item ("Increase tourism during low season and decrease during high season") and it was removed from further analysis.

Table 2. Results of factor analysis for opinions about tourism policies.

Factor	Factor Loadings	Communality
Factor 1: Winter tourism		
Winter tourism expansion	0.7695	0.6644
Ski positive	0.7898	0.6460
Incentive new hotels of more than 50 beds	0.7736	0.6958
Increase new services	0.6964	0.5728
Reliability (α)	0.7594	
Factor 2: Seasonality		
Maintenance of current tourism flow	0.8284	0.5822
Decrease tourism during the main season	0.6947	0.6885
Increase tourism during low season	−0.7707	0.7390
Reliability (α)	0.6694	
Factor 3: Environment and culture		
Natural conservation	0.8564	0.7338
New cultural attractions	0.8166	0.6193
Reliability (α)	0.5451	
Factor 4: No seasonality		
Increase tourism during low season and decrease during high season	0.9310	0.8163
Total variance explained (%) 71		

One of the aims of this paper was to investigate if the identified development policies would have any significant impact on Q-sorts (within the social-ecological system). For this purpose, a regression analysis was conducted using the factors extracted from previous PCA. The results were calculated for the whole sample (386 respondents). Results presented in Table 3 show that ecosystem can be significantly influenced by all three development policies. Further analysis showed that local residents are more concerned about impact on ecosystem, since they believe that further and uncontrolled winter tourism expansion with construction of necessary facilities (new slopes, new hotels and other services) would bring negative effects on sustainability of Kopaonik's ecosystem. All residents have opinion that maintaining current tourism flow (the highest is during winter season) could bring negative effects on ecosystem since, during winter season, natural resources are exposed to high pressure due to tourist activities.

Table 3. Results of the regression model for the whole sample.

Components of the Social-Ecological System	Tourism Development Policies		
	Winter Tourism	**Seasonality**	**Environment and Culture**
Ecosystem	0.403 ** (0.042)	0.340 ** (0.055)	0.229 ** (0.063)
Local knowledge	−0.022 (0.056)	−0.068 (0.066)	0.072 (0.058)
People and technology	−0.114 ** (0.058)	0.229** (0.053)	0.087 (0.046)
Property rights institutions	−0.036 (0.052)	0.137 * (0.069)	0.187 ** (0.064)
Adj. R^2	0.288	0.123	0.075
F	17.588 **	6.797 *	2.863 **

Standard errors in parentheses; * $p < 0.05$, ** $p < 0.01$.

All residents share opinion that winter tourism bring positive economic benefits but on the other side, since it is only one season, it creates temporary jobs and causes undesirable effects on locals' habits and their culture. Development of future natural conservation plans and new cultural attractions can have positive effects on all parts of social-ecological system, especially on ecosystem (by safeguarding and enhancing natural heritage through conservation and stewardship actions, including creation of new parks, protecting ecologically sensitive lands, protecting species at risk and their habitat and improving water quality) and property rights institutions (encouragement of local participation in future development, effective management and control of ownership, etc.).

5. Conclusions

Engaging local communities in development of mountain areas can bring many benefits. In order to achieve SES sustainability, relationships between resources, resource users and policy-makers should be dynamic and well defined. Using a Q-set within SES enables gathering stakeholders' attitudes and at the same time accelerates "travel time" of those attitudes from stakeholders to the policy table. All of this reduces uncertainty in the decision-making process.

The lack of tourism planning on Kopaonik has caused negative impacts to the physical environment as well as local culture. Policy-makers should continue to practice environmental protections in the whole mountain area, since residents expressed concern that tourism is not enough environmentally friendly. Efforts should also be made in building trust between Kopaonik's local government and other stakeholders, since there is a belief that government favors tourism at the expense of other facilities. Tourism-focused policies on Kopaonik can have negative effects on all SES spheres and especially on economic wellbeing and environmental health if stakeholders do not define sustainable relationship between development goals and ecosystem, which provide necessary resources for community.

In order to achieve sustainable tourism planning and development, the findings of this study suggest the following. First of all, the need for more interactive relationship between different stakeholders is present, since economic, social and environmental benefits from tourism development can be accomplished if interests of all stakeholders are included. Relationship between government,

policy-makers, the tourism industry and Kopaonik' residents should be stronger and based on SES-grounded policies. The role of the public and private sector, in sustainable tourism development of Kopaonik area, should be clearly defined. For example, public sector should collect information about the attitude of local residents towards the current or planned tourism policies or educate residents (to evaluate possible risks, to communicate with tourists, etc.) through public discussions or workshops with experts. From tourism managers, it is expected that they secure responsible planning and management and to monitor any changes in order to avoid misbalance between limited natural resources and the community's needs. In the case of Kopaonik, it requires pro-environmental policies, given the strong sense of connection between tourism and natural resources.

Results of this paper are valuable for planners of Kopaonik's community since they provide a base for initiating stakeholders' participation in processes related to tourism and show those issues that residents are most concerned with. Also, results are useful tool for tourism planners when they need to ensure better acceptance of tourism and implementation of development policies by residents. Residents will support development of winter tourism policy if they recognize positive socio-cultural, economic and environmental impacts. Support will be stronger if residents perceive that tourism causes positive effects on the environment. These results can also be applied on mountain destinations with similar features as Kopaonik. This study showed that application of SES is useful for expanding cultural, environmental and economic benefits of tourism development in mountain communities and for providing stakeholders support and policy legitimacy.

Authors recommend that future studies include attitudes and perceptions of other stakeholders like members of non-governmental organizations, local elected officials, second homeowners, researchers, tourists, etc. It would be desirable to extend research by conducting surveys on stakeholders of other mountain communities in Serbia and other countries in order to identify differences and similarities and draw policy implications for the mountain communities. Also, it would be important to, on a regular basis, monitor how development policies, social and economic conditions and tourists flow affect residents' perceptions towards tourism development.

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