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The Role of Motivational Incentives to the Management of Udzungwa Mountain National Park in Kilombero, Tanzania

Emmanuel Patroba Mhache*

Abstract

The provision of motivational incentives to communities that live adjacent to protected sites may contribute to effective management of natural resources in parks and surrounding areas. This paper examines the role played by motivational incentives in promoting effective management of the Udzungwa Mountain National Park (UMNP) in Kilombero district, Tanzania. It also examines the benefits accrued by local people from the UMNP, explores factors motivating people to manage the UMNP, and specifies challenges encountered in the management of the park. The article employs data from a study that was carried out in Msosa, Msolwa, and Mkula Ruipa villages; where a total of 233 heads of households and 7 tour guides were interviewed. Data generation was carried out through focus group discussions, household survey, in-depth interviews and field observations. The analysis of data was guided by Maslow's hierarchy of needs theory. The results suggest that active involvement of heads of households in the management of the park is driven by the benefits accrued from it. The results further indicate that local communities that live adjacent to the park area are aware of accrued motivation incentives and associated benefits. They further uncover that proper management may potentially reduce deforestation and degradation of natural resources in and around the park. The paper recommends that there is a need of promoting the provision of motivational incentives to attract community participation in the management of national parks in the UMNP, and in similar contexts.

Keywords: *local people, management, motivational incentives, national park, protected area*

1. Introduction

A national park is an area set aside by a government for the conservation and preservation of the natural environment. It is also set aside for public recreation and enjoyment, and also for historical or scientific interests (Suh & Harrison, 2005). In other words, national parks are important for preserving biodiversity through supporting the ecosystems and flora.

The main objectives for managing national parks include the preservation of species and genetic diversity; maintenance of environmental services; and for tourism and recreation (Suh & Harrison, 2005; Said & Maryono, 2018). Sustainable management of national parks require collective measures

*Open University of Tanzania (OUT): ngororamhache@gmail.com

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between the surrounding communities (local people), park staff/employees, non-governmental organizations (NGOs), local organizations and other stakeholders (Nyirarwasa et al., 2020).

National parks represent a specific type of wilderness area that attracts both local and international visitors. They provide both goods (poles, firewood, herbs for medicines), and services (recreation, shade, attracts rainfalls) to poor people living in and around them who depend heavily on park and forest resources for their subsistence (Hag, 2016). They also play a vital role in the conservation of the word's biodiversity and in ensuring food security and enhancing human health issues (Hag, 2016). Also, they have attracted —and continue to attract— human attention and interest for a variety of reasons.

Evidence suggests that individual motivations in the management of national parks are possible when people get alternative benefits from them. Motivation is the basic strength behind human behaviour (Berkman & Gilson, 1978). Broussard and Garrison (2004) define motivation as the attributes that move, drive and motivate people to do or not to do something. Motivations arise when a person wants to satisfy his/her needs, necessitating that person to take action to do so (Goossens, 2002).

According to Beh and Bruyere (2007), motivation is the underlying power of rise which directly affects human behaviour. It is revealed when a person wants to fulfil certain needs (Gundersen et al., 2015). Maslow stated that motivation is a result of a person's attempt to fulfil five basic needs: physiological, safety, social, esteem and self-actualization (Taormina & Gao, 2013). According to Maslow's hierarch of needs (1954), these needs can create internal pressures that can influence a person's behaviour and decision-making. Motivation is a feeling that catalyses and influences someone to do or not to do something. Many studies have discussed the role and travel motivation in tourism literature (Berkman & Gilson, 1978; Gundersen et al.,2015;Carvache-Franco et al., 2021). However, none have looked into the role of motivation in the management of the national parks in Tanzania; which is the focus of this paper.

According to Said and Maryono (2018), motivation acts like a push factor for people to protect and manage a park in the general expectation that, the delegation of the right to communities to collect revenue from parks will improve livelihoods through income and employment. This, in turn, encourages sustainable use and protection of park resources and biodiversity at large (Ostrom, 1990; Ribot, 2004). People's motivation in the management of parks is also linked to attitudes and behaviours. If people perceive that they will gain nothing from a park, their management or use may compromise the wellbeing of a park.

The theory of motivation proposed by Maslow was applied in this study to see how motivation influences people to manage or mismanage national parks. The theory states that five categories of human needs dictate an individual's behaviour. Those needs are physiological needs, safety needs, love and belonging needs, esteem needs, and self-actualization needs.

Maslow's hierarchy of needs identifies needs that stimulate people to conserve or manage something for their survival. In this particular case, the theory offers a benchmark for the management of national parks. The theory has five levels of needs: physiological (air, water, food, sleep, reproduction), safety (personal security, employment, resources, healthy, property), love and belonging (friendship, intimacy, family, sense of connection), esteem (respect, self-esteem, status, recognition, strength, freedom), and self-actualization (desire to become the most that one can be). Human motivation has been studied since the early 1900s (Silva & Franca, 2012). According to Guay et al. (2010) motivation refers to a reason underlying a behaviour. Behaviour is the way in which a person acts or conducts oneself towards others.

The Udzungwa Mountain National Park (UMNP) offers both economic and ecological importance to communities residing closely around it. Communities close to the park get both direct and indirect benefits (Katani & Ndelolia, 2020). Ecologically, the park contributes in regulating micro-climate due to the existence of the forest reserve that assists in attracting adequate rainfall and moisture throughout the year (Njau et al., 2009). Ecological services that benefit human communities stem from the healthy forest or park ecosystems, which include clean water, stable soil and clean air (Njau et al., 2009; Katani & Ndelolia, 2020). Hence, the results of this study may be applied to improve the management of other parks since the understanding of motivation factors of local communities in the management of national parks has the potential of increasing the participation of rural populations in the management of national parks.

From the foregoing, therefore, this paper explores the benefits accrued by local communities from the UMNP; examines the contribution of motivation in the management of the UMNP, and establishes the challenges experienced in the process of managing the UMNP.

2. Context and Methods

2.1 Study Site

The UMNP is a protected area designated to achieve a long-term conservation of nature with associated ecosystem services and cultural values. This study was conducted in Morogoro region, in areas adjacent to the UMNP, in Kilombero district (Figure 1). The UMNP is a mountain ranges lying between 07°46'S and 36°49'E, and at altitude of 2,579m (8,461ft.) above the sea level

(Njau et al., 2009). It covers an area of 16,131.40km^2. It is the largest point of the Eastern Arc Ranges (Harrison, 2006). The size of the UMNP is about 1,990km^2 (770miles^2), and it is the second-largest biodiversity of national park in Africa (ibid.). The Udzungwa Mountain has a vertical height range of 250-2,576m (the peak of Lohomero), which incorporates the Udzungwa Mountains part of the Eastern Arc Mountains (https://tanzania-horizon.com/udzungwa-mountains-national-park; retrieved on 09/10/2022). Apart from its scientific value, the UMNP has tremendous attractions of animals and plants, together with the geological formation of the park. The park has a wonderful mixture of forests (tropical rainforest, mountain forest, miombo woodland, grassland, and steppe), formation of rock, and numerous wildlife species: both plants and animals. The UMNP was selected for this study because of its richness in biodiversity, its importance to the communities living around it and the country at large; and its exposure to potential threats due to population growth, agricultural expansion, persistent land degradation and unsustainable land uses.

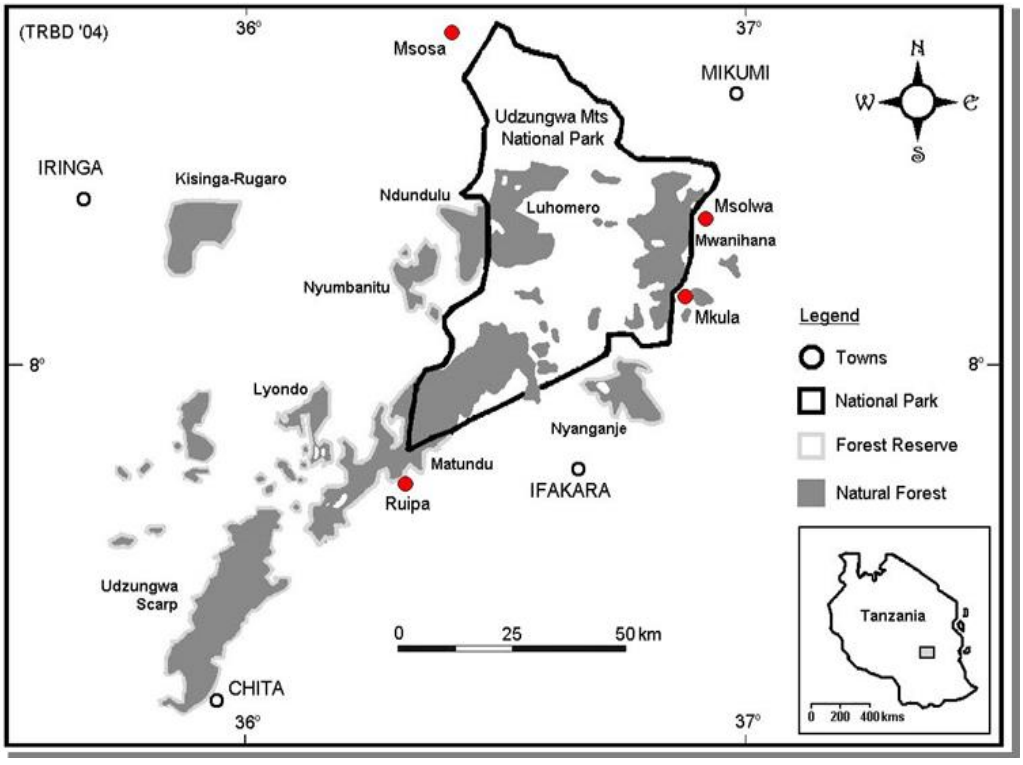

Figure 1: Map Showing Udzungwa Mountains National Park and Study Villages

Source: Tanzania Bureau of Statistic, 2021

2.2 Methods

2.2.1 Research Design

The study from which this paper drew data was designed descriptively. Opting for a descriptive research design was motivated by its potential to offer detailed description of the motivation of people on the use and management of the UMNP. Descriptive research design describes the state of affairs as it exists at the present (Kothari, 1990). It also portrays an accurate profile of persons, events or situations (Robson, 2002). The design also allows a triangulation of methods, which ensures the validity of captured data.

2.2.2 Sampling

The study employed simple random sampling and purposive sampling techniques. The simple random sampling technique availed all heads of households in the study villages an equal chance of inclusion in the study (Kothari, 1990). On the other hand, purposive sampling technique enabled the researcher to identify participants who had the appropriate knowledge to suit the needs of the study. Purposive sampling targeted knowledgeable local and government officials, and who had lived in the study area for about 30 years and above. Four villages located adjacent to the UMNP—Ruipa, Msosa, Msolwa and Mkula—were selected for the study (Figure 1). A simple random sampling technique was applied in picking the four villages. Transect walk was used to identify dominant land uses in each transect per village, and in detecting management activities executed in the study area.

2.2.3 Data Collection

Primary data were collected through household survey, in-depth interviews and field observations. In-depth interviews were administered to key informants with knowledge, experience, and who had lived in the study areas for 30 years and above. It also involved village chairpersons, village executive officers, tour guides and the UMNP ecologist. A structured questionnaire was employed to collect data from 233 heads of household between July and August 2021. Field observation was also employed to collect nonverbal information regarding the environment and goods collected from the park. It also involved observing nature (the environment), water sources and park products like timber and building materials. Mixed research methods were employed for triangulation purpose since no single method is self-sufficient in bringing valid and reliable results in data collection.

2.2.4 Data Analysis

The Statistical Package for Social Sciences (SPSS) version 27 was used for data analysis. The data collected were presented in tables, figures and narratives.

3. Results

3.1 Profile of Respondents

A detailed description of the profile of the respondents was crucial for the interpretation and understanding of the peoples' motivation for managing the UMNP. From a total of 233 respondents, more than half of the respondents were males (67%), while 33% were females (Table 1).

Table 1: Respondent's Profile

Categories	Frequencies	Percentages
Gender		
Male	156	67
Female	77	33
Age		
18 – 30	27	11.6
31 – 54	111	47.6
55 - 65	74	31.8
66+	21	9.0
Education level		
Non-formal education	73	31.3
Primary education	117	50.2
Secondary education	21	9.0
College education	13	5.6
University level	9	3.9

Source: Field survey, 2021

The majority (47.6%) of the respondents were in the 31-54 years age group, 11.6% were in the age group ranging 18-30 years, and 9% were 66 years old and above. Also, the majority of the respondents (50.2%) had primary education, 9% had secondary education, 5.6% had college education, 3.9% had university education, and 31.3% had no formal education.

3.2 Benefits Accrued by Local People from UMNP

The local communities residing close to the UMNP accrued different benefits from the park. About 76.8% of the 233 respondents pointed out that the park regulated climate in the study area (Table 2). It also serves as a source of water for the local people close to it, in addition to being the source for many rivers and tributaries feeding the Kilombero River. The importance of the park in the provision of water to the local community was supported by 86.3% of the heads of households interviewed in the study villages (Table 2).

Regarding this, the UMNP ecologist interviewee said: "*The park provides water to the Tanzania Electricity Supply Company for generating electricity, to the Kilombero Sugar Company, and to the Kilombero Teak Company for irrigation*."

The park also offers ecotourism ventures as pointed out by 39.1% of the respondents. The main purpose of ecotourism is to enable local people to practice and enjoy the environment, and at the same time educate the local

community on how to conserve and manage the park. Through a community conservation programme, the UMNP has been a source of funding for building schools and supporting health facilities as reported by 43.4% of the respondents (Table 2). Thus, the UMNP contributes economically, socio-culturally and ecologically to villages, districts, region, and to the nation at large.

Table 2: The Importance of UMNP

Importance of UMNP	Frequencies (N=233)	Percentages
Regulating micro-climate	179	76.8
Source of water	201	86.3
Ecotourism venture	91	39.1
Source of fund	101	43.4
Source of construction materials	171	73.4
Offering cultural values and religious sites	55	23.6
Others	31	13.3

Source: Field survey, 2021. Multiple responses were considered

One old man interrogated in Msosa village had the following opinion:

> *"Traditionally, this park (UMNP) is very important to our culture: it has cultural values to us. We used the park to contact our ancestors in case of any problem like, shortage of rainfall, low harvests and drought. The park is also used as a religious site. People execute different traditional taboos, rituals and beliefs in the park."*

Another old man interviewed in Ruipa village said:

> *"I am old man now leading my family on ritual issues. I used to lead prayers asking ancestors to bless us in unforeseen or unexpected problems like dropping of the water level in the river, or shortage of rainfalls and other calamities like deaths and droughts. The prayers are always performed in the park."*

The importance of the park for cultural and religious purposes was supported by 23.6% of the 233 people interviewed (Table 2).

The availability of construction and furniture materials is another benefit of the park. People get timber and poles (woods) for building houses from the park. This importance of the park was reported by 73.4% of the 233 heads of the households (Table 2). The park also supplies people with timber for making furniture like beds, chairs, tables, windows frames, doors, etc. Other items mentioned by 13.3% of the 233 respondents included herbs and honey, fodder and pastures.

3.4 Factors Motivating People to Manage UMNP

Head of households involved in the study gave a number of reasons that motivate them to manage the UMNP (Table 3). The motivation factors are categorised into two main groups: goods (tangible); and services (intangible). (Table 4). The conservation of UMNP has traditionally been justified on the

basis of the socio-economic and biodiversity possessed by the park. As per Maslow's theory of hierarchy of needs, people are motivated to manage the park because it provides them with goods and services for survival.

Table 3: Comparison of the Stages of Maslow's Hierarchy of Needs and the Management of National Park

Maslow's hierarch	Individual Needs	Corresponding Management of UMNP
Physiological	Air, water, and food	The park offers basic needs to locals such as water, food, fresh air and building materials.
Safety	Employment, resources, healthy, property	Ensuring life existence by offering the means of survival likes resources and work (employment).
Love and belonging	Friendship, intimacy and sense of connection	Community and management of the park
esteem	Respect, self-esteem, status and recognition	Protecting the park and appreciating the importance of the park
Self-actualization	Creativity and spontaneity	Preservation of nature

Source: Modified and adopted from Maslow, 1943 and Field Survey, 2021

Table 4 summarizes the benefits that people accrued from the UMNP in response to a question that asked the respondents to explain reasons that motivate them to manage, protect and conserve the park. They were also asked to list the benefits in terms of goods and services.

Table 4: Motives for the Management of the UMNP

Goods (Tangible)	Services (Intangible)
Fuel wood	Carbon sequestration
Building poles	Micro-climate regulation
Thatch	Source of water
Sustaining wildlife	Flood and erosion control
Wild food	Cultural values (places of traditional worships/ beliefs)
Traditional/ herbal medicines	Aesthetic values
Pasture	Heritage values
Fishing	Bequest values
Forestry	Shade
Recreation	Research

Source: Field survey, 2022

For the management of the UMNP to be effective, local people and other stakeholders are obliged to accept their responsibilities, and be willing to manage it. Since the park offers people surrounding it with both goods and services, the management of the park is their task. Acceptance and willingness is linked with the benefits associated with the management of the park. In some places, people possess a deep respect for the park due to its traditional spiritual values (Miller, 1970), while in other places people value it for its utility reasons (Alves, 2012; Somaweera & Somaweera, 2010; Mendonça et al., 2014).

As mentioned earlier, motivations in the management of the UMNP come in different forms. For instance, people residing close to the park can be employed as porters (*wapagazi*) to assist tourists and other visitors to carry their luggage. In the UMNP, as in other parks, those engaged in porters' activities are local peoples. Thus, this is an employment opportunity that motivates local people to protect and manage the park since it supports their livelihoods. One of the youths interviewed in the study area had this to say:

> *"I started working as porter since 2015. As a Form VI leaver, I have no other means of survival apart from being a porter. This activity has enabled me build a brick house and meet the basic needs of my family."*

The Mkula village chairperson informed that the porters in Kilombero have an association known as the Porter Association, which coordinates all of their activities; and also safeguard their interests. On this, the park ecologist said:

> *"The park helps people to form associations to work with in dealing with tour guides and porters. Involving the park in the formation of an association is important because mistreating tourists and other people visiting the park may compromise the reputation of the park. For example, if tourists lose their properties, they may spread bad information about the park, which may reduce the number of visitors. Thus, the park must have a hand in the formation of such associations to maintain and protect its reputation."*

Tour guide is another activity that provides people with income in the areas surrounding the UMNP. A tour guide is a person who takes people/ tourists on trips through an area and explains the interesting features around it. This was explicitly explained by one tour guide thus:

> *"I am called 'Climber'; this is my nickname. I am called 'Climber' because of my speed in climbing the Udzungwa Mountain. My activity here is to take tourists through the park and brief them about the park and features found in it. This park is beneficial to me and the communities residing close to it. Thus, there is a need to protect and manage the UMNP at all costs because of its importance to the people living close to it."*

Tour guides must be knowledgeable of the park: what is available in it, and where and when it is available. Among the tour guides interviewed, 55% were the residents of the villages close to the park, while 45% were from outside (Figure 2).

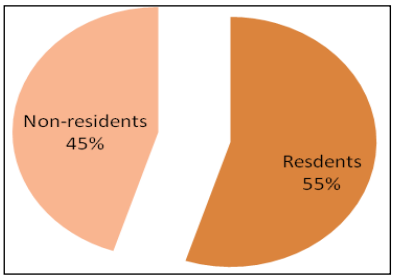

Figure 2: Source of Tour Guides Working in the UMNP
Source: Field survey, 2022

The UMNP is an area with high steep slopes that requires frequent repair of trails and routes/roads leading to its water falls; otherwise it will be difficult—and even impossible—to climb/walk it. During one interview, men found tilling/repairing the trails in the park had this to say:

> *"This trail is used by tourists and other people coming to this park for tours, picnics, swimming, and for ritual purposes. The maintenance of the trails is done twice a year, mainly after or during the rainy season. This work of making and maintaining trails gives us wages that support our livelihoods."*

The ecologist disclosed that people cleaning or making trails were given token payments; and that most of them were casual labourers from adjacent villages.

Also, some people were hiring sticks that support tourists when climbing the Udzungwa Mountain (Photo 1). According to one man interviewed, and who was climbing the mountain, they hired one stick for TZS500 per day per tourists.

Photo 1: Sticks that Support Tourists
Source: Filed survey, 2021

The income generated from tourists and other people visiting the UMNP is used to pay for the operation of the park, while the remaining is returned to the community to support social services such as building schools and the provision of health services. This support conferred to the communities through social services is another motivation for the people to manage the UMNP.

The UMNP is one of the parks which receive people doing study and research. The park receives researchers and students from different universities such as the Sokoine University of Agriculture (SUA), University of Dar es Salaam (UDSM) and the Open University of Tanzania (OUT). In their activities, the researchers and students use research assistants or field assistants, to guide and assist them throughout the park. In doing or conducting research, they also involve local people who are knowledgeable of the study areas. Local people are also involved in the research since they know the language spoken by the people in the study area. Research assistants are also paid some money which assist them to survive.

Tourists visiting UMNP are a good market for goods produced by the people residing close to the UMNP such as bites, crafts and juices. These products are sold to tourists visiting the park and other people climbing the Udzungwa Mountain. However, in connection to the UMNP, there are different groups of people engaging in different activities like weaving/ mending baskets (*ushonaji wa vikapu*) that are sold to tourists. Other residents engage in making/ preparing traditional foods which they sell to tourists. Among the food items sold to guests include cashew-nuts, ground-nuts, *chapatti* (pancake), snacks, sweet potatoes, cassava and others.

This part attempts to present and elaborate factors that motivate local community to manage the UMNP. This study findings identified three main factors that motivate people to manage the UMNP. These include the reasons that the park offers (i) jobs to the local communities; (ii) personal satisfaction; and an improvement of the quality life of the local surrounding communities (Table 5). The park diversifies and expands the opportunities for socio-economic growth of the communities residing close to it. The majority of the respondents (53%) pointed out that the existence of the park offered job opportunities directly and indirectly to the local people, while 33% said that personal satisfaction was another reason which made the manage the park (Table 5). Also, as said by the village chairperson of Mlula village, people "*… living close to the park and working with the park enjoyed the nature and climate.*"

Table 5: Factors Motivating Communities to Manage the Park

Factors	Frequencies	Percentages
Job opportunities	124	53
Personal satisfaction	77	33
Improving life quality	32	14
Total	**233**	**100**

Source: Field survey, 2021

As mentioned above, the third reason that motivated the local communities to manage the park -- as stated by 14% of the interviewees -- was the impact of

the park in improving the quality of the life of the people (Table 5). The general question posed in focus group discussions (FGDs) held in the four study villages -- and which involved of both men and women -- was meant to get feelings of what motivated people to manage the park. The answers to this question came with different responses. The first FGD in Mkula village revealed that what motivated the people to manage the park was the fact that the park provided areas for resting/relaxation, i.e., a conducive environment for social interaction. Interaction with nature, enjoying good weather, cultural heritage sites, and the provision of clean and fresh air were mentioned by the FGDs in Msosa and Ruipa villages as factors that motivated the villagers to manage the park. The other FGD held in Msolwa village affirmed that the people manage the park because of enjoying the natural environment, which generates a sense of intimacy, and thus creating a suitable area for picnic.

Challenges Facing the Management of UMNP

The information collected using questionnaires, interviews and transect walks revealed that, despite the importance of the park, there were a number of challenges. The first challenge was poaching and illegal hunting: dishonest people enter the park and hunt birds (Plate 2) and animals like monkeys (Photos 3 & 4) without permission from the park authority. Another challenge to the park was incidences of accidents caused by careless drivers who kill slow moving wildlife (animals) crossing the road.

Plate 2: The Udzungwa Partridge
Source: Field data, 2021

Photo 3: Sanje Crested Mangabey

Photo 4: Iringa Red Colobus

Source: Field data, 2021

The park is crossed by a road to Ifakara; and monkeys are the most killed animals on the road. Illegal hunting was mentioned by 25.3% of the people interviewed as one the challenges (Table 6). On accidents, the ecologist said:

> *"Accidents and killings of animals are happening frequently in the park. Animals killed include monkeys. Drivers that kill animals run away because this happens in the night when no one is around to arrest them."*

Table 6: Challenges Facing the Park

Challenges	Responses (n = 233)	Percentages
Poaching and illegal hunting	59	25.3
Illegal collection of herbs for medicines	33	14.2
Cutting trees for building houses	95	40.8
Firewood	101	43.4
Cutting tree for timber	93	39.9
Wildfire	71	30.5
Climate change	110	47.2

Note: Multiple responses were considered
Source: Field survey, 2021

The second challenge facing the UMNP is people collecting herbs for medicines in the park. In the collection of herbs, herbalists take different parts of the trees. The most preferred parts of tree include barks, leaves and roots. Some trees die in the process of herbs collection due to over-extraction. About 14.2% of the 233 respondents agreed that the harvesting of herbs from the park is a challenge to the park (Table 6). Trees most affected include *Drypetes gerrardii niodides, Zimmermanniopsis* and *Saint paullia.* These tree species are endemic: if no measures are taken to protect them, they will become extinct.

Another challenge mentioned by the respondents was illegal cutting of trees for building houses. The challenge of illegal cutting of trees for building houses was mentioned by 40.8% of the respondents (Table 6). Most of the residential houses close to the park are made of mud, poles and withies. In average, mud houses can last for three to five years, and then a new one is built. These mud houses consume a lot of wood, which people have to get from the the park. Eventually, this leads into the destruction of the forest in the park. One of the village officials interrogated said: "*Some people ask for permit to cut poles from the park for building their houses; while others enter the forest illegally and cut trees for their uses*." This practice, if not monitored, can lead to deforestation. About 40.8% of the people interviewed in the study area used materials from the park to build their houses, some of which materials were illegally collected from the park (Table 6).

The main source of energy in the study villages is firewood, which is obtained from the UMNP. A study on the collection of firewood from the UMNP revealed that 143,872 cubic meters of dead wood are collected annually from the park (https://rris.biopama. org/sites/default/files/2019-03/Udzungwa_ NP_ GMPl_ Final_ 2014.pdf). About 43.4% of the respondents agreed that they get firewood from the UMNP (Table 6). They argued that since what they collect is dry wood, this has no negative effect to the park. However, information has shown that firewood collection has significant adverse impacts on the park's ecological processes.

Lumbering is another activity carried in the park by the people living close to the park. According to the UMNP ecologist, lumbering is not allowed in the park, but people do it illegally; mainly in the night when patrol guards are not around. Timber -- through lumbering -- was mentioned as one of the products harvested from the park. This leads to the depletion of species since it involves cutting whole trees. Cutting tree for timber was mentioned by 39.9% of the respondents (Table 6). Although harvesting for timber species is not allowed, illegal loggings were done in the park. It was disclosed that the timber was used to make furniture. Carpentry in the study villages involved making beds, doors, windows, chairs, stools and other wood items. One carpenter interviewed confirmed that: "*Raw materials for carpentry work are obtained from the forest and the park*."

Climate change is another challenge in the management of the UMNP. This problem was mentioned by 47.2% of the respondents (Table 6). Climate change is a natural cause that leads to the drying up of water sources, streams and rivers. Prolonged dry seasons or drought lead to the dying of animals and plants. Climate change is also associated with high temperature and less rainfall. In this respect, one staff working with the Illovo Sugar Plant said:

> *"The volume of water reaching our reservoirs is low during the dry seasons than during the rain time. The decrease of water is associated with climate change*."

One village chairperson added:

> "S*ometime water coming to our taps is mixed with mud, which is an indication that water sources are open and polluted. It is also an indication that there is no vegetation covering water catchments*."

A woman interviewed in Msosa village said: "*… water flowing from taps is very little, and sometimes there is no water at all coming from taps. This is a result of climate change*." Flood was also occasionally experienced in the park. Prolonged drought leads to death of the undergrowth or grasses. Rainfall in such an area automatically leads to floods since there are neither undergrowth nor trees to check the speed of water.

Wildfire is another challenge in the management of the UMNP. Wildfire is a prominent problem during the dry season. Fire can be intentional or a result of people cleaning their farms using fire, which, when uncontrollable, crosses to the park. This fire burns the park, chases animals and kills both plants and animals. Wildfires in the park are also caused by honey gatherers who use fire to harvest honey. Moreover, poor agricultural practices contribute to wildfires in the park. One of these practices is shifting cultivation where people cultivate in one area in a one season, and shift to another area in the next season in a search for fertile land. About 30.5% of the respondents said to have seen wildfires in the park (Table 6). The same was said by the UMNP ecologist:

> "*Fire is a challenge in the park especially during the dry seasons. The causes of fire are many including honey gatherers and farmers when cleaning their farms using fire*."

Wildfire also stimulates some of exotic plants, e.g., *Lantana camara,* to grow.

Human-wildlife conflict is another problem between the UMNP and communities living around it. People close to the park practice farming and livestock keeping. Sometimes crops are eaten or destroyed by animals. Animals found in the park include monkeys, elephants, buffalos, hippopotamus, leopards, African wild dogs and eland. Sometimes these animals cause human deaths (wildlife deaths). The local people also kill animals found eating their crops, destroying their farms, or causing human deaths. These human-wildlife conflicts lead to conflicts between the park authority and the communities surrounding it. This stem from different and/or conflicting needs between the two parties: the park wants conservation; while the communities wants to use resources from the park which, if unchecked, may eventually lead to the degradation of the park. The UMNP ecologist revealed this situation when he said:

"Some people who are not honest, clandestinely enter the park to cut trees for making charcoal and timber, which is not allowed. When prohibited to carry out this, they raise conflicts with the park management. Some of the people caught are sued, fined and others are imprisoned: all these intensify the conflicts."

4. Discussion

National parks have evolved over time from protected land as game reserves to the conservation of biodiversity and natural ecosystems (Dudley & Stolton, 2010; MacKinnon et al., 2020.). National parks contribute to the livelihood of local communities, enhance peoples' well-being and provide recreational facilities. The overall benefits accrued from national parks are collectively categorized as social, economic and cultural. Maslow's hierarchy of needs helped to summarize the benefits accrued from the park which can be categorized as physiological, safety, belongingness and love, esteem and self-actualization.

Thus, communities/ individuals are motivated to manage parks, including UMNP, because of the benefits they get from them to meet their needs. Maslow's theory states that human needs dictate an individual's behaviour. Benefit is what motivates someone to do or manage something. As a motivation, parks give people goods and services. Physiological needs are at the lower stage of Maslow's hierarchy of needs, which state that people must be satisfied with their physiological and basic needs like air, water, food and shelter. People cannot become supportive of the management of a park without knowing how they will benefit from it. Safety needs is ensured by the presence of a park as the local people can obtain their needs from it.

Safety needs includes protection against any kind of harm whether psychological or physical. The UMNP has wild animals; thus people must be assured about their safety and security of their crops and properties. Such an assurance will motivate local people to manage the park for their benefits. Regarding belongingness and love needs, local people expect to be allowed to carry out basic environment-friendly sustainable operations such as cutting trees for their use. If given this, they will in turn support the management of the park; resulting into a mutual relationship of giving and receiving affection and friendship between them and the park authorities. Based on Maslow's theory, people cannot reach this level until they are satisfied with their physiological and safety needs. People must be assured that the park is for them, and that they can benefit from it: they should feel that the park is *theirs*.

Another level of Maslow's hierarch of needs is esteem needs (Maslow, 1943). This level emphasizes that local people expect good products, facilities and food for their livelihoods (Hag, 2016). Needs such as timber for building good rooms and facilities like furniture are provided by the UMNP. According to Maslow (ibid.), these needs may be classified in to two subsidiary sets: tangible, and intangible needs.

People's needs for self-actualization represent their desire to fulfil their potential, maximizing the use of their skills and abilities. Getting humour, enjoyment and satisfaction and feeling secure can also be provided by the UMNP. Maslow proposed that even if all the previous need are satisfied, often we may still expect that a new discontent and restlessness will soon develop, unless one is doing what s/he is individually is fitted for. As pointed out by Eagles and McCool (2002), and Amuquandoh (2017), there is a popular view that national parks are unique areas for the restoration of physical and emotional health of visitors. Parks assist individuals to renew their health and relieve stress associated with living. Generally, access to fresh air, sunshine and nature is considered as healthy. In addition to regulating climate, the UMNT is also a source of water to the communities residing close to it.

Challenges facing national parks vary from one park to another (Katani & Ndelolia, 2020). One of the several challenges identified as facing the UMNP was the drying-up of water sources in the park due to prolonged dry seasons and drought. According to Kideghesho et al. (2013), and Thomas et al. (2004), drought and increasing temperatures due to climate change have led to the extinction of plants and animals in various parks. In Tanzania, the impact of climate change has been felt in all ecosystems, including rangelands (Kideghesho et al., 2013) and national parks.

5. Conclusions

This study conducted in the has shown motivation is an important factor in successful management and conservation of natural resources including national parks. Motivations are needs that influence the behaviour and attitudes of people; thus, they are very important decision-making processes. Maslow's hierarchical needs theory of needs has become the best-known general theory of motivation, and has been applied to explain motivation in many social disciplines and areas, such as parks and tourism. Maslow's five-level of hierarchy of needs theory guided this study in determining needs for the management of the UMNP.

Respondents of this study are aware of the importance of motivation as an instrument for improving the UMNP. A sustainable management of a national park requires collaboration, participation and involvement of park staff, local organizations, NGOs, and other stakeholders such as local residents and the government. The UMNP is very central to the livelihoods of the communities residing in proximity to the park. An important aspect of managing the UMNP is developing an understanding of the park advantages, and the problems that people will experience in case the park disappears. This study demonstrated the benefits of the park as the reasons for successfully managing it.

It is concluded that residents around the UMNP are motivated to manage the park due to the tangible and intangible benefits they derive from it, including water, firewood, poles and timber. In addition, the park helps regulate climate, support social services by revenues collected from tourism activities, on top of offering temporary and permanent employment to the local people. Moreover, the park attracts tourists -- both foreigners and locals -- who in turn provide a market for local produce. The park also affords a place for the local people to observe their traditions, such as the performance of rituals. These are among the benefits of the park, which in turn motivates people to manage and conserve it. Despite these benefits of the park, the UMNP is facing several challenges including wildfire, poaching and negative impacts of climate change. These need to be addressed if the park is continue being beneficial to the communities living around it, and the nation at large.

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