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Stakeholders Analysis for Building in Green Infrastructure Objects

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Abstract

In recent decades, overcrowding, urban sprawl, gray infrastructure, polluted air and water have led to a growing need for green infrastructure to provide good living conditions. In an attempt to meet its needs, society perceives ecosystems and services as an infinite inexhaustible resource. The concept of sustainable development has led to a reformatting of policies at global, European, national, regional and local levels. Part of the policy for sustainable use of resources is related to the construction of green infrastructure to meet current needs without compromising the life quality for future generations. Policies and approaches geared to building green infrastructure unite the various interests of society, individual groups or people we identify as stakeholders. In the process of management and spatial planning of green infrastructure, stakeholder research provides the opportunity to create sustainable management solutions.

Keywords: sustainable development, green infrastructure, stakeholders

JEL: Q18, Q21

1. Introduction

Over the past decades, overcrowding and ever-expanding cities and their accompanying infrastructures have increased (Nasir, Z.A. et al., 2016, 15757/15766; Wiedmann, F. et al. 2019, 393/411; Kaker, S. A. et al., 2020, 85-98; Vatter B., Kelly C. K., 2016; U.S. Environmental Protection Agency, 2013). Economic and technological progress leads to ever-increasing consumption, which exerts serious pressure on nature. As a result, natural habitats are becoming increasingly fragmented and damaged, biodiversity among flora and fauna is steadily declining, and polluted air and water are becoming commonplace (Iyengar, G.V. et al., 2000, 331/346; Paligorov, I., Galev, E. et al. 2014, 97/189). The prospect for the development of modern society is aimed at a balanced territorial development between progress and nature (McDonald R. et al., 2021, 63/85), meeting the different needs and interests of both stakeholders and nature. The creation and development of such sites are an

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important element of the overall construction of green infrastructure at European, national, regional and local levels.

Strategies for building green infrastructure, its planning and management are directly related to the interests of the public. Support, whether direct or indirect, is essential for their success, because the most successful projects are those that have involved the interests of the widest possible range of stakeholders. The organization and coordination of these interests is a serious challenge for all levels of government. It is important for everyone to understand how the individual activities interact with each other and how they fit into the overall concept (Naumann et al., 2011, 55/82; McDonald R. et al., 2021, 63-85).

The study is based on the understanding that sustainable management of landscapes with specific characteristics can unleash their potential for the benefit of the various stakeholders involved in their management and use (Paligorov, I., I. Ivanov et al., 2014, 61-67). The study is aimed at analysing the interests of stakeholders in the area of Yundola, near to the Training centre of University of Forestry UOGS "G. Avramov", as a place with additional opportunities for the development of benefit for different social groups. (Paligorov, I., Stipcov V. et al. 2015, 55-95). The study is based on the advanced results of a study under the INTEGRAL project, which relates to the Future-oriented integrated management of European forest landscapes. The main objectives of the study are divided into several main directions:

- The description of the various stakeholders in the use and management of resources in the selected territory;
- analysing information on public attitudes of stakeholders using forest landscapes and prospects for changing attitudes towards these public resources;
- investigation of the attitudes of stakeholders to developing the recreational and tourism potential on the selected site by creating green infrastructure projects.

2. Object and methods

2.1. Object of the study

The Training centre of the University of Forestry UOGS "G. Avramov", which is located between two mountains - Rila and the Rhodope is a place with unique nature, which provides many different opportunities for the development of the area (Kolev, K., 2000). According to other authors (Galev E., 2003; Galev, E. et all, 2006, 274/282), this is a precondition for the positive development of tourism in this region, because at this altitude (1800-1900 m above sea level) there is no need for acclimatization of the body during a long stay in the mountains.

Over the years, the territory of Yundola has become an experimental forest terrain "Yundola" and is managed by the University of Forestry in Sofia as an open educational and research base. Since its inception, Yundola's region has been recognized as a mountain resort of national importance. The area is characterized by unique physiographic and biological diversity, natural landmarks and phenomena, and has a great entertainment potential. There have been observations in recent years of positive trends in the use of forest areas for tourism and the development of various tourist activities in such territories. These facts are fundamental for the formulation of an investment idea of the development of a recreational and tourism potential (Science for Environment Policy, 2012).

The expectations for the use of the territory can be seen in the published results in the INTEGRAL project. The information from these survey allows another analysis of the results, which can show local communities that there are solutions that differ in terms of the basic logging function. The development of the potential of the territory through generally basic accepted uses alternatives, also can be directed towards building the green infrastructure objects. (Laktić, T., Pezdevšek Malovrh, Š., 2018, 599; Kaker, S. A. et al., 2020, 85/98). Viewed from a complex economic and socio-environmental aspect, it will provide something much more valuable - the well-being of people and the establishment of sustainable relations "nature - individual - society" (Paligorov, I., Galev, E. et al. 2014, 97/189).

2.2. Research method

Stakeholders' identification is a process in which they should be carefully determined depending on the case study. Account must also be taken of the fact that differences arise, depending on the specific program or policy (Galev, E., 2003). The used method is based on six successive steps presented in Figure 1:

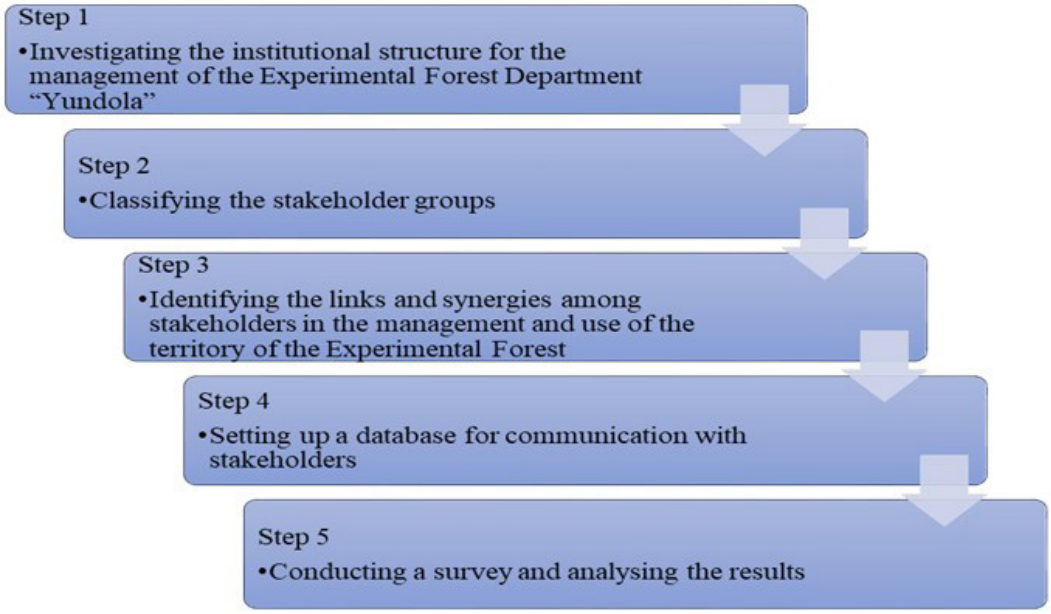
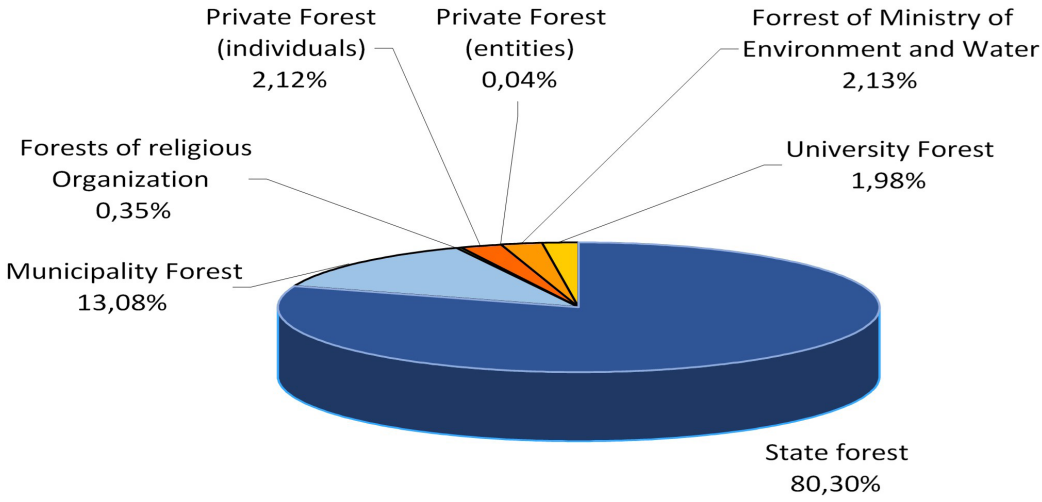


Figure 1: *Research methodology*

3. Results and discussion

3.1. Ownership structure of the property

The Training centre of the University of Forestry UOGS "G. Avramov" is part of the district of the Pazardzhik and Velingrad municipality. The ownership structure is characterized by a higher share of state forests compared to other administrative districts of the country (Paligorov, I., Galev, E. et al. 2014, 97/189). The share distribution of ownership is given in Figure 2.



Source: Paligorov, I., Galev, E. et al. 2014, 97/189

Figure 2: *The ownership area distribution in the Pazardzhik District*

Municipal and agricultural cooperatives ownerships take up a small part of forest land. There is some forest land that owners are unknown so they are managed by the South Central Forest Enterprise Smoljan. According to the adopted law on forests in 2011, the rights of using forest lands are given to the owners themselves. This provides various opportunities, including organizing procedures for the distribution of rights (especially for state and municipal territories).

3.2. Description of the stakeholders

The specific status of the selected area implies a richer range of stakeholders involved in the management and use of its resources. The main actors in the territory management process according the results of investigations in the INTEGRAL project (Paligorov, I., Galev, E. et al. 2014, 97/189; Stakeholder Analysis Mind map template; Laktić, T., Pezdevšek Malovrh, Š., 2018, 599) are: Neighbouring owners (A); Other forest owners (B); Local Politicians (C); Regional/County/State Politicians (D); National Politicians (E); Local government officers (F); Neighbouring Municipalities (G); Educational Institutions (H); Park Administration (I); Forest Services (J); Local Action Groups (K); State (L); Professional technicians (M); Forest-related enterprises (N); Agricultural associations (O); Tourist operators (P); Travel agencies and associations (Q); Local associations (R); Other (S).

The following stakeholders have been identified in the management and use of the possibilities of the object of survey:

- The Training centre of the University of Forestry UOGS “G. Avramov” - covers almost 5100 ha or 80.3% of the whole territory, which defines it as one of the most important participants in the forest management in the region;
- The Association of Municipal Forest Owners in Sofia;
- The Executive Forestry Agency;
- The State Administration of Pazardzhik District - implementing the District Strategy for Sustainable Forest Management for the district;

- Private professionally licensed foresters - their activity is related to the organization, management and control of the activity, which is carried out in the private forests. This is a kind of guarantee that the activities carried out will not have a negative impact on forest ecosystems and the services they provide;
- The "Hristo Botev" Vocational School of Forestry in the town of Velingrad is among the few schools that train specialists in this field;
- NGOs - the Association of Hunters and Fishermen in Bulgaria having the greatest weight, etc.

Each of these groups, as direct or indirect participants, have different interests and expectations in the management and use of resources in the studied object.

3.3. Results of analysis

Relationships between different participants are of great importance in the process of management and use of forests landscape. The sustainable and responsible use of natural resources depends on the good communication between them, on a fair and equitable distribution of benefits. In connection with this, various organizations have been established. An example of this is the National Council on Forests and Hunting, whose main function is "management of the forest sector as an advisory state-public body to the Ministry of Agriculture and Food" (Paligorov, I., Galev, E. et al. 2014, 97/189).

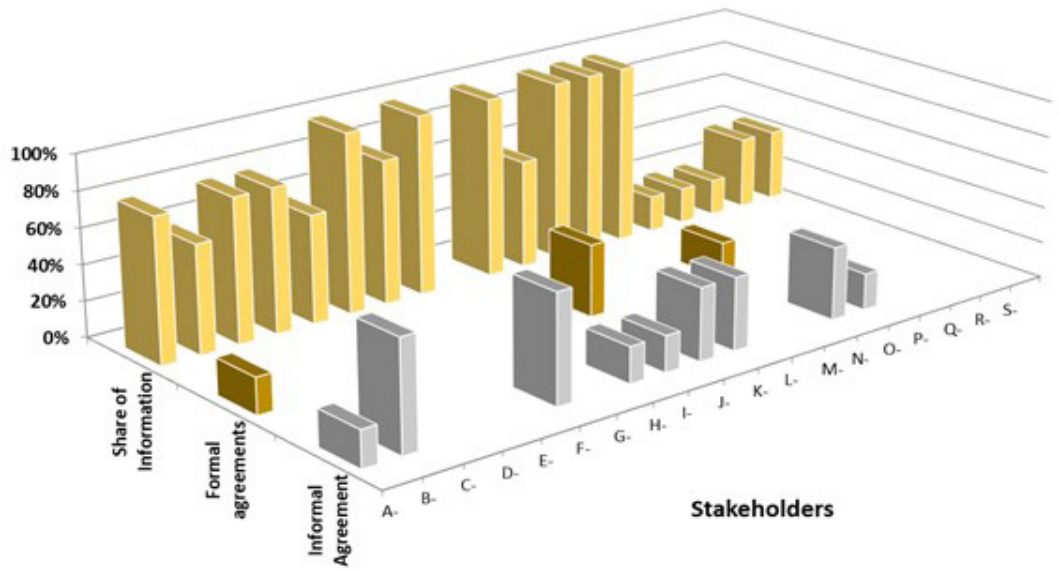


Figure 3: *Survey of the possibilities of sharing of information, formal agreements and informal agreements between stakeholders in the object.*

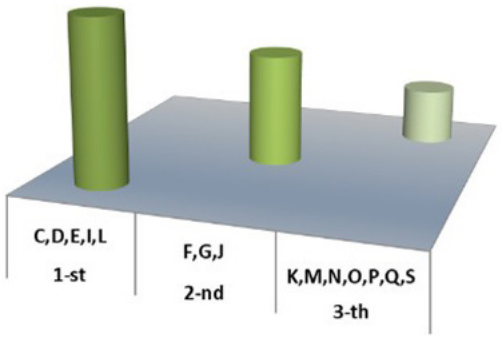


Figure 4: *Perception level of conflicts between stakeholders.*

The results of the sociological survey show that the respondents fully trust national politicians as the main source of management information - Figure 3. They are followed by Neighbouring owners, Local Politicians, Forest Services, State, Neighbouring Municipalities, Educational Institutions, Professional technicians, Local associations, but only as sources of information. The possibility of concluding contractual agreements is rather small, but it is nevertheless a sign of a good cooperation between them. There is also a high level of trust in the educational institutions, which unfortunately is lacking in the region of Velingrad.

These organizations have a huge potential from a scientific and practical point of view, which can help in making adequate management decisions. The implementation of tourist networks and local associations in an information network has also been neglected. This indicates a lack of interest in alternatives for the use of forest areas and, accordingly, lost profits.

Ultimately, it became clear that despite sharing information with each other, respondents trusted three sources - the state with its local and municipal administrative apparatus, and regional and local politicians. The resulting conflicts are due to disagreement and lack of trust in the implemented rules imposed by national and regional policies, as well as their implementation and lack of transparency – Figure 4. It shows that out of eight sources of conflict, the most important for the interested respondents are the top three sources: the State with its administrative apparatus at local and municipal levels, as well as the regional and local politicians. It is necessary to create conditions for an effective communication between stakeholders and the administration at the regional level.

Local communities have more confidence in forest owners, forestry enterprises, forest-related enterprises, state forest enterprises, state hunting enterprises, and so on. Compared to the local municipal bodies, the court, prosecution and even the educational institutions such as the vocational schools in the region. It is for this reason that society expects policy changes, removing opportunities for abuse and conflict, in order to achieve their common interest, namely, better forest areas and more benefits for all.

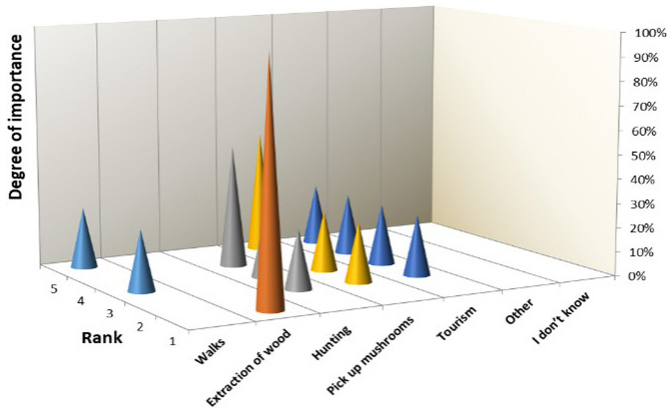
Despite the large palette of specific stakeholder groups, the key final evaluations around them are:

- The public has a clear position on the importance of forests and forest resources for local development in the harvesting and processing of wood, the creation of employment in tourism, recreation, harvesting and processing of forest products, which is considered to be a very good and so far unexplored opportunity;
- The public is keen to improve and increase its involvement in formulating and implementing a forest policy, which will make it more effective and accelerate its implementation;
- The importance of landscape users attributed by different user groups also

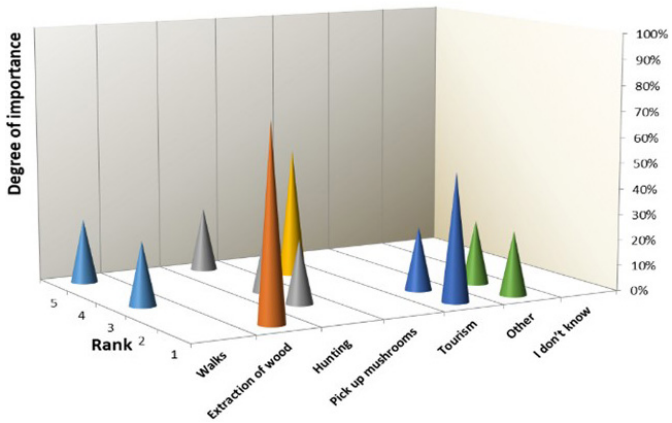
shows that the primary consideration is the assessment of local consumers and secondly of tourists.

The perception of the potential of the territory recognizes in the first place that the most important source of income is logging. Interested respondents still do not expect benefits from tourism (Figure 5) and do not consider it very important as the use of the forest ecosystem in the Velingrad region, although the analysis of specific regional characteristics shows that the region has very good preconditions for this type of use.

In their long-term forecasts - Figure 5b, respondents expect reduced importance of such regional activities as walking and recreation, hunting and even a slight reduction in logging. Expectations for the development of tourism as an activity that can generate direct benefits are also increasing. This is a positive trend in the change of thinking of forest managers. From the forecast expectations of the studied groups a positive assessment is given for the growing opportunities for development of alternative forms of tourism and reduction of the volume of wood use in the regions.



a) *at present*



b) *in the future*

Figure 5: *Perception level of the potential of the territory*

All the benefits recognized by the stakeholders are related to the use of wood and only partially to some non-timber forest resources. Such ecosystems are considered to be limited, although they have a wide range of opportunities to expand the economic activity of various enterprises and to raise the living standards at the regional level.

Conclusions

As a result of the studies it can be taken into account that there is insufficient information on the potential capacities of the territory beyond traditional wood production.

Specific investment ideas that are economically viable and bring the development of ecological and social potential for local communities should be presented to stakeholders to change their thinking about potential benefits.

The potential of green infrastructure projects can provide at the same time economic, social and environmental benefits for the development of the region. Green infrastructure, green tourism and green jobs are the prerequisite for the sustainable development of such territories. They have the potential to create high added value and a good investment alternative.

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