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SUSTAINABLE FORESTRY ODRŽIVO ŠUMARSTVO

COLLECTION
TOM 67-68

ZBORNIK RADOVA
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POSSIBILITIES FOR IMPROVEMENT OF THE MANAGEMENT OF PROTECTED NATURAL AREAS

Zoran PODUŠKA, Ilija ĐORĐEVIĆ, Radovan NEVENIĆ, Svetlana BILIBAJKIĆ,
Renata GAGIĆ SERDAR, Goran ČEŠLJAR, Tomislav STEFANOVIĆ¹

Abstract: *This paper presents the analytical review of the views of the employees in enterprises and organizations entrusted with the management of the protected natural areas (PA). The employees expressed their views on the possibilities for improvement of the management of PA. The impact of the age of the respondents and their professional training has been analyzed by means of the survey questionnaires and using the statistical methods. The results suggest that the employees have the best insight into the possibilities for improvement through training development, visitor centers, offer of recreation in the nature, organization of tourist travel and creation of a local brand. The respondents of different ages evaluated business opportunities in different manners – the younger deem that organizational changes provide better prospects. The respondents attending the professional training courses and seminars exhibit entrepreneurial proneness to business opportunities.*

Key words: management, protected natural areas, enterprise

МОГУЋНОСТИ УНАПРЕЂЕЊА УПРАВЉАЊА ЗАШТИЋЕНИМ ПРИРОДНИМ ПОДРУЧЈИМА

Апстракт: *У раду је дат аналитички приказ ставова запослених у предузећима и организацијама којима је поверено управљање заштићеним природном подручјима (ЗП). Запослени су изразили своје ставове о могућностима унапређења управљања ЗП. Анализиран је утицај старосне доби испитаника и похађање професионалне едукације и семинара на способност препознавања пословних шанси које могу унапредити управљање ЗП. Подаци су прикупљени директним интервјуима путем анкетних упитника, а анализирани статистичким методама. Резултати*

¹ Institute of Forestry, Belgrade, Serbia

указују да запослени виде најбоље могућности унапређења путем развоја едукације, визиторских центара, понуде рекреације у природи, организације туристичких путовања и стварања локалног бренда. Испитаници различите старосне доби различито вреднују пословне шансе, млађи дају веће шансе организационим променама. Испитаници који похађају професионалну едукацију и семинаре показују предузетничке склоности ка пословним шансама

Кључне речи: управљање, заштићена природна подручја, предузеће

1. INTRODUCTION

In Serbia around 528,691 *ha* or approximately 6% of the territory (**2012) is under protection. The protection entails harmonization of the human activities and economic and development plans alongside sustainable deployment of natural resources with the view to preserve and manage parts of the nature and natural areas (**2010). The protection encompasses the protected natural assets, which are classified into three categories: protected areas (PA), protected species and movable protected natural assets. Protected areas include national parks (NP), nature parks, landscapes of exceptional features, nature reserves, protected habitats, nature monuments and area of cultural and historical significance (**2013).

The management of protected areas in Serbia is entrusted to enterprises and organizations. Managers are public enterprises, NGOs, limited liability companies, shareholding companies, tourist organizations, religious organizations, state owned companies, hotels, military institutions, municipalities, health care institutions and individuals (Grujičić *et al.* 2009).

In current practice, most PA have dual functions, that of a commercial user of the area for the purpose of creating economic benefits and that of an entity responsible for protection and advancement of the natural values (Puzović, 2009). Puzović (2009) further concludes that it is this “*contradictory dual function that generates contemporary governance and protection issues in PA.*”

From the institutional, organizational and legislative aspects, PA governance issues can be formulated in respect of the manner of selecting companies or organization as well as in respect of their professional, human resource and infrastructural conditions (Puzović, 2009), ownership structure in PA, (Milijić *et al.* 2009), financing of PA (Đorđević *et al.* 2009; Aleksić, Jančić, 2009), collision of laws and regulations (Nevenić *et al.* 2009), insufficient efficacy of legislative (Nikolić, 2009), illegal construction (Aleksić, Jančić, 2009) and illegal mining and mineral exploitation (Ostojić, Petraš, 2009). In addition to the aforesaid governance issues, vast research of PA underline the condition and conservation of biodiversity and geodiversity and important role of the education and participation of the public in the protection of nature (Belij, 2009).

Review of the available literature on protected nature areas revealed a lack of research in attitudes, needs and motivation of the employees of the enterprises entrusted with the management of the protected areas. Given the fact that the enterprises for management in PA are business entities whose purpose is to realize economic benefits, it is necessary to research the possibilities for improving PA

management through development of business opportunities. Here the employees' views on business opportunities are studied and the differences in those views depending on the age of the respondents and their attendance of professional trainings and seminars. The objective of this research is to analytically present the significance of different business activities. The purpose is to suggest measures to be applied by the PA managers in order to improve management.

The research was conducted within the following projects:

- Development of Technological Procedures in Forestry with the Aim of Realizing Optimum Forestation, TR 31070, RS Ministry of Education and Science;
- Analysis of PA Management Organizations in the Republic of Serbia; the project was financed by the Forestry Directorate.
- "FOPER II" – Consolidation of the Human Capacities in Forestry Policy and Economics Education and Research in the South-Eastern Europe Region and the subproject "PAGOV – Governance Assessment of Management of Protected Areas in the South-Eastern European Region (Albania, Bosnia and Herzegovina, Croatia, Macedonia and Serbia)."¹

2. IMPROVEMENT OF THE MANAGEMENT OF THE PROTECTED NATURAL AREAS

Management of protected areas is governed by, inter alia, the Environmental Protection Law, Forestry Law and relevant decisions enacted by the Republic of Serbia Assembly appointing managers. The results of the research in PA management conducted globally and in our country are comparable and share similar conclusions. Stolton and Dudley (1999) enumerate the weaknesses of protected forest area management, the basic of which are:

- Finance resources;
- Employee professional training;
- Inadequate institutional capacities;
- Inadequate legislation;
- Insufficient participation of local population in preparation of plans and
- Lack of coordination among organizations entrusted with management.

Hockings and Phillips advocate the generally accepted opinion that more attention is to be paid to the issues of effective PA management and that the management capacity depends on the legislation and government support to the PA design and management (Hockings, Phillips, 1999). James (1999) states that, although there is a lack of both funding and staff in PA, managers respond to arising opportunities in an entrepreneurial manner, particularly when it is possible to use new sources of income.

¹ "FOPER II, Consolidation of the Human Capacities in Forest Policy and Economics Education and Research in the South-East Europe Region;" PAGOV "Governance Assessment in the Management of Protected Areas in the South-Eastern European Region (Albania, Bosnia and Herzegovina, Croatia, Macedonia and Serbia)"

Aleksić and Jančić (2009) view PA management as an important factor of affirmation for enterprises entrusted with management as well as for the forestry profession. It is their belief that forestry engineers need to expand their knowledge, particularly in the fields of ecology and environment, information and communication, informatics, etc. In respect of the PA funding, they emphasize that immediate commencement of biomass utilization and collection of non-timber forest products, may be significant source of income for both the manager and local population (Aleksić, Jančić, 2009). From the financial viewpoint, PA managers invest substantial assets into preservation and development, whereas the economic power of the population does not provide opportunities for additional income through collection of entrance tickets and fees.

3. MATERIALS AND METHODS

Research in views of the employees at enterprises and organizations managing protected areas was conducted by means of the survey questionnaire. The survey questionnaire applied included the following:

- Social-demographic characteristics of respondents;
- Assessment of the legislative framework influence on the PA management;
- Assessment of efficiency and effectiveness of PA management;
- Assessment of the participation of various stakeholder groups in PA management;
- Assessment of transparency in PA management;
- Assessment of competences in PA management;
- Assessment of capacities in PA management;
- Factors for improvement of business operations of the enterprises managing PA.

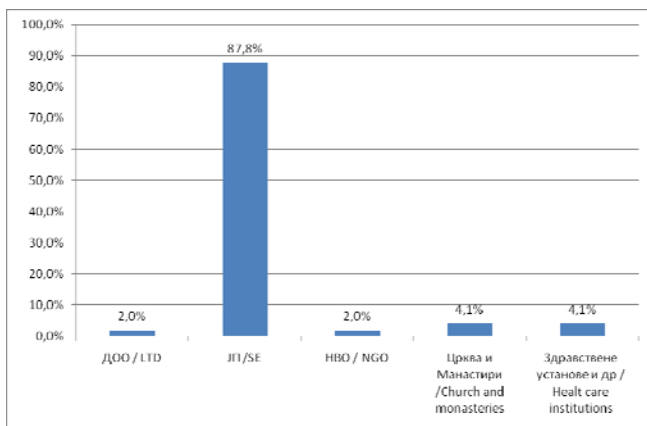
The survey was conducted on a sample of 49 employees of the enterprises and organizations entrusted with PA management. The sample comprised limited liability companies, State enterprises (SE), NGOs, Church and monasteries and health care institutions.

The survey was executed via direct interviews with the employees of the enterprises and organizations managing PA. The research units were employees, and the characteristics of the sample – managerial positions or experience in PA management. The survey questionnaire was pretested on the interviewees holding university degrees in forestry. Following the pretesting, minor changes were introduced to the questionnaire and its final version was formulated.

The obtained responses were encoded and entered into a MS Excel worksheet, where the codes entered were checked against the responses provided in the survey questionnaires. The MS Excel worksheet was then imported into the program for statistical data processing SPSS. The data were processed using descriptive statistical method and statistical testing method.

4. RESULTS AND DISCUSSION

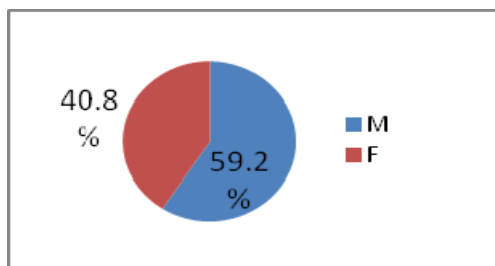
Graph 1 shows the participation of respondents in percentages per type of the enterprise managing PA.



Source: Original

Graph 1: *Managers of protected areas*

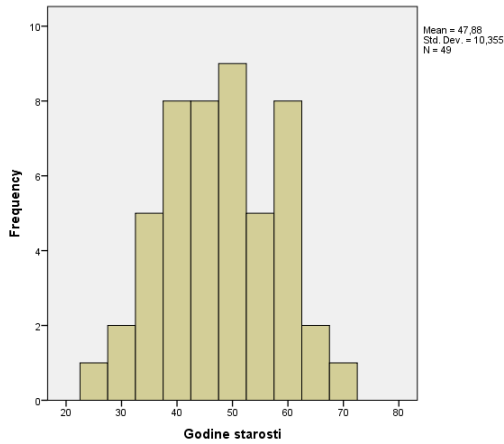
The largest number of respondents interviewed were employees of the following public enterprises: SE “Srbijašume,” SE “Vojvodinašume,” SE National Park “Fruška gora,” SENP “Kopaponik,” SENP “Đerdap,” SENP “Šar planina,” SENP “Tara.” Social and demographic characteristics of the respondents are presented via their gender structure and age. The gender structure of the employees interviewed is presented in graph 2, whereby there are more men than women in the sample. Men comprised 59.2% and women 40.8 % of the total sample of respondents.



Source: Original

Graph 2: *Gender structure of respondents*

Distribution of the respondents within the sample per age is shown in graph 3. The youngest respondent was 25 years old and the oldest 71. Distribution of respondent is presented by a histogram. The largest number of respondents within the sample were 57 to 58 years old, while the average age of respondents was 47.88 years.



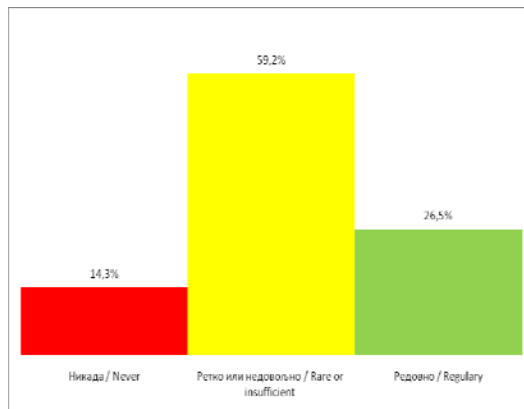
Source: Original

Graph 3: *Distribution of respondents in the sample per age*

The respondents were able to assess the frequency of attending professional trainings and seminars. To the question: „How often do you attend professional trainings and seminars in PA management ?”, the respondents selected one of three offered responses: never, rarely or not often enough and regularly. The frequency of attending professional trainings and seminars is provided in graph 4.

Most respondents attend professional trainings; however, 59.2 % of them think this is not sufficient or that they are rarely included in professional trainings. 26.5% of the respondents had regular trainings and 14.3% had never attended professional trainings or seminars in PA management.

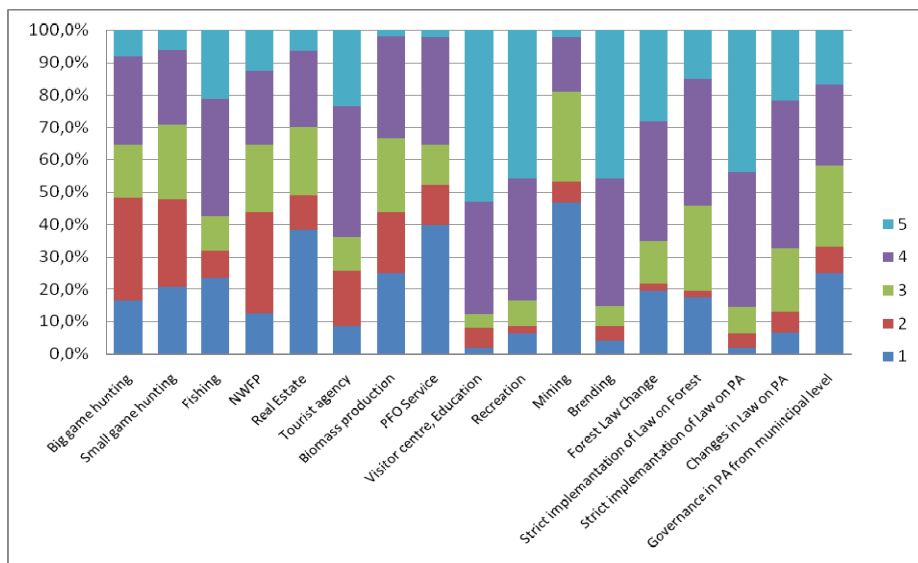
The respondents assessed business opportunities that may have effect on PA management using 1 to 5 scale grades in their evaluation. Grade 1 means totally irrelevant, grade 2 – irrelevant, grade 3 expresses a neutral view, grade 4 means relevant and grade 5 – a highly relevant activity for PA management.



source: Original

Graph 4: *Frequency of attending professional trainings*

The respondents assessed the following activities: big-game hunting, small-game hunting, issue of fishing permits and organization of fishing, gathering and processing non-timber forest products (NTFP), real estate business, organization of tourist travel, production of biomass, extension services to private forest owners (PFO), educational programs and visitor centers in the nature, offer of recreation in the nature, ore and mineral exploitation and creation of a local brand. Graph 5 presents summary assessment of the respondents, i.e. the percentage share of the respondents per activity.



Source: Original

Graph 5: *Assessment of business activities*

The respondents regarded as the most relevant for improvement of PA management the business activities entailing the participation of visitors. As many as 87.8% of respondents assessed education programs in the nature and visitor centers as relevant or a highly relevant activity. Offer of recreation in the nature is assessed as a relevant or highly relevant business opportunity by 83.3% of the respondents, while 85.4% of them saw creation of a local brand as relevant or highly relevant for PA advancement. For 63.9% of the interviewed respondents organization of tourist travel is relevant or highly relevant. The lowest grades were allocated to mining and mineral exploitation. More than half of the respondents (52.4%) assessed this activity as irrelevant to the PA advancement.

The views of the respondents were analyzed using the Mann-Whitney test. The test compared the sum of rang of assessment of business opportunities for improvement of PA management. The assessments of different age respondents were compared. The first group was comprised of respondents up to 45 years old, and the second of respondents with over 45 years of age. In addition, differences in views on the possibilities for the improvement of PA management were tested between the respondents attending professional trainings and seminars and those not-attending the trainings and seminars. Table 2 provides the statistical

significance for the expressed differences in views between the groups under observation. Column 1 lists the business opportunities assessed by the respondents with grades from 1 to 5. Column 3 provides the results of the Mann-Whitney test, which was used for comparing the views of the two groups of respondents. The first group was comprised of (column 4), and the other of respondents with over 45 years of age (column 5). Column 7 shows the results of the Mann-Whitney test, which compared the views of the respondents with regard to their attendance of professional trainings and seminars. The first group comprised respondents not attending (column 8) and the second respondents attending (column 9) professional trainings and seminars.

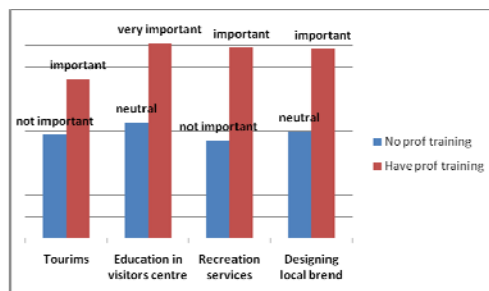
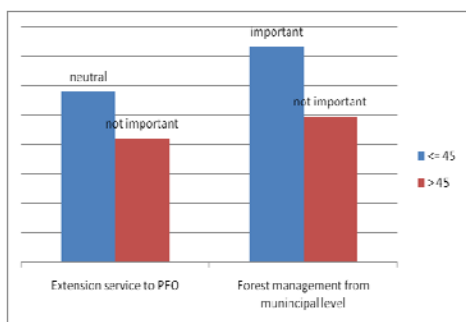
Table 1: Differences in views of respondents: business activity assessment per age and attendance of professional trainings

Test Statistics ^a								
1	2	3	4	5	6	7	8	9
Business opportunities	Mann-Whitney U	Asymp. Sig. (2-tailed)	Up to 45 years of age	Over 45 years of age	Mann-Whitney U	Asymp. Sig. (2-tailed)	Not attending training	Attending training
Big-game hunting	207.000	.101	3.14	2.52	124.000	.557	2.57	2.83
Small-game hunting	212.000	.127	3.00	2.41	103.500	.230	2.14	2.76
Issue of fishing permits, organization of fishing	225.500	.292	3.43	3.08	68.500	.071	2.17	3.39
Gathering, processing and sales of non-timber forest products	246.500	.429	3.10	2.78	84.500	.076	2.14	3.05
Real estate business	223.000	.265	2.71	2.31	85.500	.213	1.83	2.59
Organization of tourist travel	257.500	.729	3.62	3.46	72.000	.034	2.43	3.73
Production of bioenergy raw materials	240.500	.356	2.86	2.52	138.500	.880	2.57	2.68
Private forest owners extension services	185.000	.031	2.90	2.11	138.000	.865	2.57	2.44
Education in the nature, visitor centers	277.500	.711	4.24	4.36	39.000	.001	2.71	4.57
Nature based recreation	272.500	.804	4.14	4.15	32.500	.000	2.29	4.46
Mining and mineral exploitation	232.500	.353	2.43	2.04	93.500	.137	1.57	2.33
Creation of a local brand	275.000	.847	4.24	4.15	16.500	.000	2.50	4.43
Forest management at the local/municipality level	153.500	.006	3.67	2.48	95.500	.150	3.71	2.88

Source: Original

Comparing the views of the older respondents to those of the younger ones, statistically significant differences were identified at the risk level of $p=0.05$ for the opinion that extension services to the private forest owners can improve PA management. The younger respondents think that extension services to the private forest owners has a neutral impact on the improvement of PA management whereas the older ones regard it as irrelevant. The views of the respondents classified into

age groups are presented in graph 8. Comparing the views of the respondents attending to those of the respondents not attending professional trainings and seminars, statistically significant differences were identified at the risk level of $p=0.01$ for the views on the following activities: organization of tourist travel, offer of education programs and visitor centers in the nature, offer of recreation in the nature and creation of a local brand (graph 9).



Source: Original

Graph 6: *Views of the different age respondents*

Graph 7: *Differences in assessment of business opportunities by respondents attending and those not attending professional trainings and seminars*

Respondents not attending professional trainings and seminars consider organization of tourist travel not important, whereas those attending the trainings and seminars see this activity as important to the improvement of PA management. Respondents not attending professional trainings and seminars find offer of educational programs and visitor centers in the nature important, while those attending the trainings and seminars regard it as a very important activity for improvement of the PA management. Respondents not attending professional trainings and seminars consider offer of recreation in the nature not important, whereas those attending the trainings and seminars see this activity as important to the improvement of PA management. Respondents not attending professional trainings and seminars find creation of a local brand not important, while those attending the trainings and seminars regard it as a important activity for improvement of the PA management. Differences in average ratings between the two groups are shown in graph 9.

The attitudes of the employees interpreted in this manner confirm the previously formed conclusions on the possibilities for branding in the forestry of Serbia (Ranković, 2009).

Utilization of biomass and non-timber forest products is not yet viewed as relevant for the management and earning income, which is contrary to the suggestions of prior research (Aleksić, Jančić, 2009).

Management of protected areas is of great significance for the protection of biodiversity as well as for the fulfillments of the society's requirements toward forest and nature. There is a concern that protected natural areas both world-wide

(Hockings, Phillips, 1999) and in our country (Aleksić, Jančić, 2009) are not managed in the manner which contributes to the environmental, economic and social benefits. A number of research and condition monitoring projects have been initiated in respect of efficient PA management and possibilities for improvement of PA management. Advancement of protected areas with preservation, sustainable utilization and valuation of functions and ecosystem services is becoming an unavoidable aspect of the forestry development strategy (***2006).

So far, little attention has been paid to the employees and managerial staff in PA, more focus has been placed on the institutions, laws, procedures and funds. This research enables insight into the views of the employees in enterprises and organizations managing PA, which indicate business opportunities that may improve management. In high regard are business activities involving visitors such as: offer of education in the nature and visitor centers, offer of recreation in the nature and organization of tourist travel. These results are comparable to the existing studies of the advancement of business operations of forestry enterprises, where recreation and tourism are viewed as the most innovative and most proposed forms of services (Poduška *et al.* 2011). Creation of a local brand received highest grades from as many as 85.4% respondents, suggesting the need to make products and services from protected areas more recognizable among potential consumers.

The results suggest that there are views on the necessary organizational changes. Respondents regard forest management at the local level as relevant, which is contrary to the current centralized management system, and partially contrary, at least for PA, to the results of research implying the necessity of organizing a single state forestry enterprise (Aleksić, Ivković, 2004).

Notions that professional training is a key factor in PA management (Aleksić, Jančić, 2009; Stolton, Dudley, 1999), proved justified. Respondents attending professional trainings and seminars expressed positive opinions on and highly rated the offer of educational programs and visitor centers in the nature, offer of recreation in the nature, organization of tourist travel and creation of a local brand. In other words, all of the highly rated business opportunities were recognized by the employees attending professional trainings and seminars. Respondents not attending professional trainings and seminars consider such activities irrelevant for the improvement of the PA management. Younger employees recognize that organizational change in terms of PA management from municipal level provide opportunity for improvement.

5. CONCLUSION

Based on the results and discussion presented, it is concluded that:

- Business opportunities including tourism and recreation can have great significance for improving PA management;
- Education and visitor centers in the nature can improve PA management;
- Recreation in the nature and organization of tourist travel can improve PA management;
- With creation of a local brand products and services from PA can become recognizable while the local population and the manager can gain more economic power;

- Professional training of the employees in PA is a key factor for recognition of opportunities that can improve PA management;
- Age is significant since younger respondents recognize new business opportunities.

Managers need to organize employee professional trainings and seminars on a regular basis. It is necessary to develop ecosystem services such as recreation, education and tourism in the nature. Enterprises entrusted with PA management ought to be mediators in creation of a local brand with features of the respective protected area.

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