

# Assessment of Public Awareness of the Forestry Sector: Biodiversity, Certification and Ecosystem Services in Velingrad Municipality

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## Abstract

The purpose of this study was to survey the current public awareness in Velingrad Municipality in terms of biodiversity preservation, certification and ecosystem services in the regional forestry sector. The answers to the questions related to the biodiversity and ecosystem services showed good awareness and a very positive attitude of respondents regarding the need for conservation and sustainable use of biodiversity as well as the improvement of ecosystem services. According to the conducted surveys, the awareness concerning the certification and standards in the local forestry sector as well as the regional NATURA 2000 protected sites was still weak or lacking.

## Keywords

Questionnaire, Forestry sector, FSC, NATURA 2000, Velingrad Municipality

## Introduction

The total area of the forest territories in the municipality of Velingrad is 68 738.2 ha. About 97% of the area is state-owned public property. Of these, 26 938 ha are managed by the State Forestry “Alabak”, 5 129.6 ha by the “Georgi Avramov” Studying-Experimental Forestry, 20 051.8 ha by the Chepino State Forestry and 16 618.8 ha by the State Forestry “Selishte”. Within the industry sector, the logging and furniture

industries (over 350 woodworking and carpentry companies) have a structurally significant role in the Velingrad Municipality and the forestry sector is controlled by the above-mentioned four forestry farms (Velingrad Municipality, 2015). They produce multifunctional household and office furniture, wooden toys and wood for both domestic usage and export (mainly for Greece and Turkey). The larger woodworking and carpentry companies are concentrated mainly in the town of Velingrad.

The Forest Stewardship Council (FSC) is one of the most used certification systems in the forestry sector. The FSC includes two sub-standards: FM (forest management) and CoC (product traceability). Sustainable and environmentally-friendly forest silviculture and management are achieved by controlling the processes and, in turn, this is achieved by introducing the standards of ISO: e.g. 9001, 14 001, 18 001 (FAO, 2015). One of the main problems in the implementation of certification and standards in the forestry sector in Bulgaria is the lack of sufficient stakeholder and public awareness of the mechanisms and the meaning of their application (Stiptsov, Mihaylov, 2015).

NATURA 2000 is a pan-European network of protected sites, aiming to ensure the long-term preservation of the most valuable species and habitats of community importance. On the territory of the municipality of Velingrad, there are parts of two protected sites:

1. Protected site **BG0001030 “Rodopi - Zapadni”** - a protected site under the Directive 92/43 /EEC on the conservation of natural habitats and of wild fauna and flora, which overlaps with a protected site under the Directive 79/409/EEC-BG0002063 “Zapadni Rodopi”

2. Protected site **BG0001386 “Yadenitsa”** - protected under Directive 92/43/EEC

A preliminary wide-range investigation in the Velingrad Municipality forestry sector was done in the frame of the Seventh Framework Programme (FP7) project: INTEGRAL “Future-oriented integrated management of European forest landscapes“ (<http://www.integral-project.eu/>), enhancing, participatory planning, multiple ownership integration within the process of developing sustainable forest management and policy initiatives. The officially accepted “Plan for the development of the forests on the territory of Velingrad Municipality” has a very important impact for the Velingrad Municipality (Velingrad Municipality, 2015) as it offers an excellent overview of the main problems, priorities and the technical options for carrying out sustainable forest management in the region. One of the five priority axes approved in this plan is the need to improve the public relations, training and interaction between the institutions and business in the regional forest sector with accents on biodiversity preservation, certification and ecosystem services. In this regard, it is necessary to explore the public awareness of the aforementioned topics, which would increase the efficiency of implementation of the identified priority initiatives for the sustainable development of the forestry sector in the Velingrad Municipality (Paligorov et al., 2017). The purpose of this study was to survey the current public awareness in the Velingrad Municipality in terms of biodiversity preservation, certification and ecosystem services in the regional forestry sector.

## Materials and Methods

The survey was anonymous and voluntary and was conducted in the Velingrad Municipality with regard to participants (Kvale, Brinkmann, 2009; Bryman, 2016) via manually filling in a questionnaire. This questionnaire contained a total of 18 questions, grouped in three main thematic areas as follows:

Biodiversity and ecosystem services in the regional forest sector- eight questions

Certification and standards in the regional forest sector- four questions

Regional NATURA 2000 protected sites- three questions

The last three questions aimed at specifying the respondent's age, gender and relations with the forestry sector. In order to facilitate the respondents' knowledge systems (Villamor et al., 2014), short facts and relevant information were added before the start of each of the three main thematic groups of questions in the questionnaire. In order to achieve a balanced and representative sample of a wider range of stakeholders in the municipality of Velingrad, a total of 150 questionnaires (hard copies) were distributed as follows:

Fifteen questionnaires to employees from the Public Administration of Velingrad Municipality (<https://m.velingrad.bg/>).

Sixty questionnaires to the respondents from four selected schools in the municipality: National Vocational School of Forestry "Hristo Botev" (<https://www.pggs.info/>)- Velingrad (Municipality Centre with the population of 21 256 people (National Statistical Institute, 2018)), Innovative Secondary School "St. st. Cyril and Methodius" (<http://new.soukim.com/>) – Velingrad, Secondary School "Metodi Draginov" (<http://www.sou-draginovo.org/>) – Draginovo Village (the biggest village in the municipality with the population of 4664 people (National Statistical Institute, 2018)) and Secondary School "Hristo Smirnenski"- Draginovo Village (situated around the NATURA 2000 protected site - BG 0001386 "Yadenitsa", with the population of 1531 people (National Statistical Institute, 2018)).

Sixty questionnaires to the respondents from four woodworking and furniture small- and medium-sized enterprises (SMEs) in Velingrad.

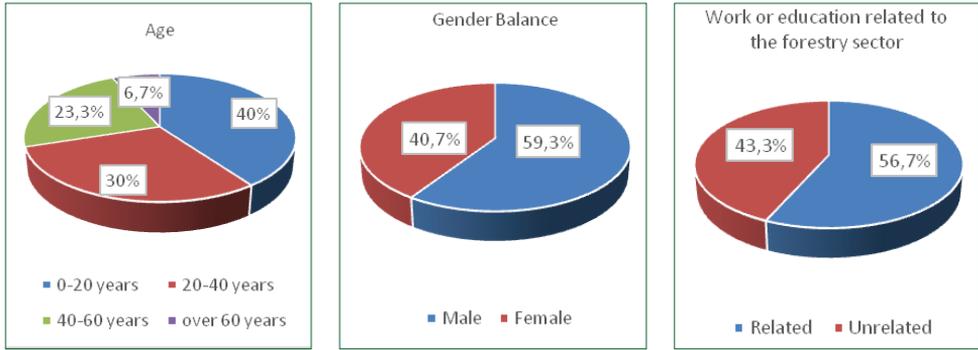
Fifteen questionnaires to randomly selected citizens of the Velingrad Municipality, that voluntarily agreed to participate .

The responses to the questionnaires were analyzed following the basic principles of social research methods described by Bryman (2016). The results are summarized in percentage based on the number of all recorded questionnaire responses of the surveyed participants.

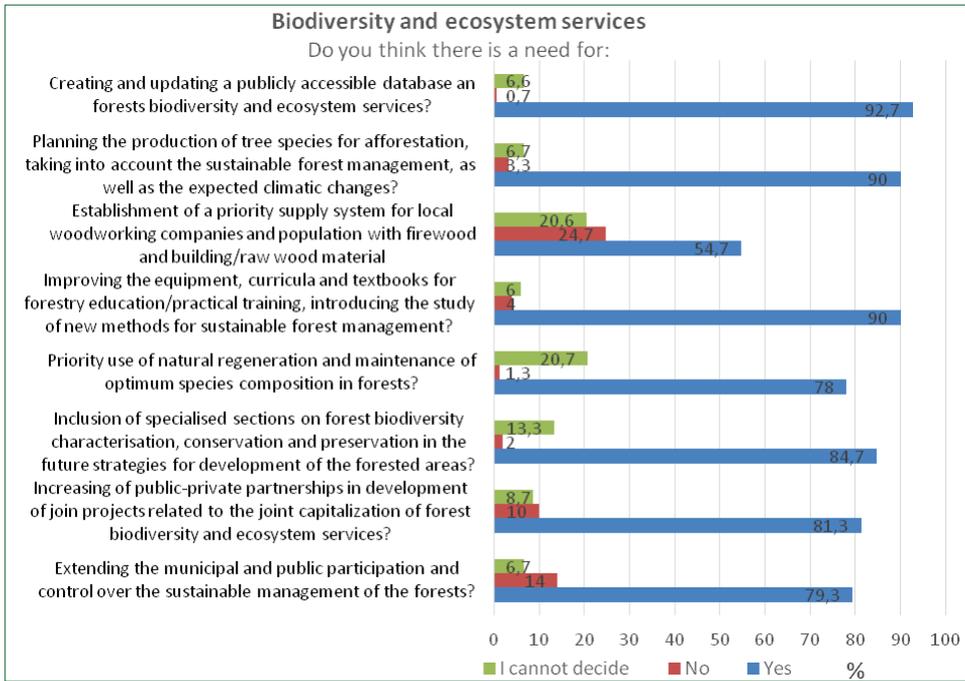
## Results

The results of the survey are summarized and presented in Fig. 1, Fig. 2, Fig. 3 and Fig. 4.

The answers to questions related to biodiversity and ecosystem services showed good awareness and a very positive attitude of respondents regarding the need for

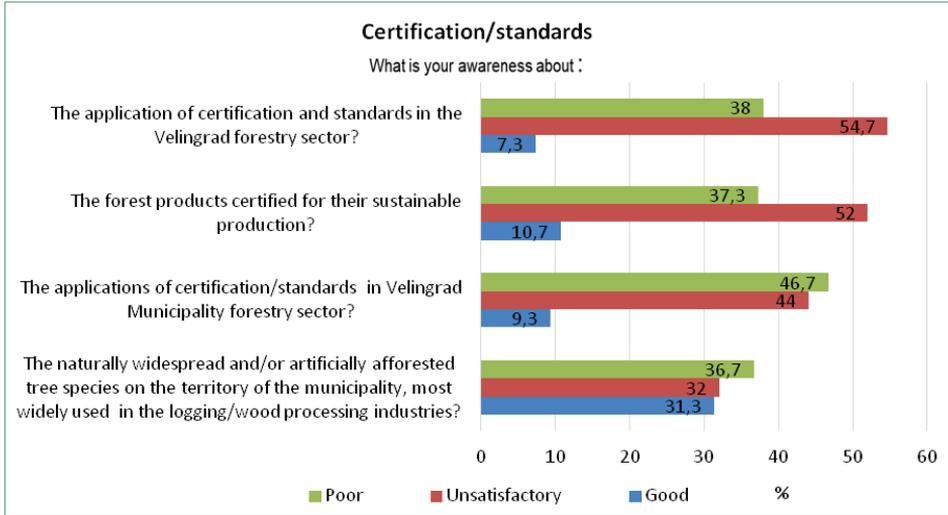


**Figure 1.** Profile of the respondents from the Velingrad Municipality concerning age, gender and relations to the forestry sector

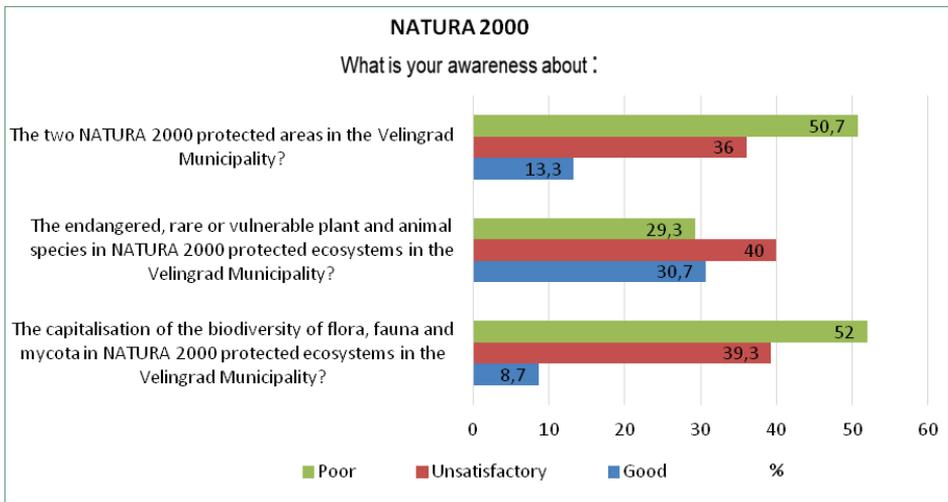


**Figure 2.** Awareness of respondents from the Velingrad Municipality about the regional forest biodiversity and ecosystem services

conservation and sustainable use of biodiversity, as well as improving of the ecosystem services. Accordingly, the positive responses ranged from 79.3% to 92.7%. An exception in both cases was the question related to the establishment of a priority supply system for local woodworking companies and population with firewood and raw wood material for construction, where the negative answers reached up to 24%. This could be explained by some reservations and distrust of the respondents to the current system of priority supply in the municipality.



**Figure 3.** Awareness of respondents from the Velingrad Municipality about certification/standards in the forestry sector



**Figure 4.** Awareness of respondents about NATURA 2000 protected sites in the Velingrad Municipality

At the opposite pole was the situation in terms of awareness of the respondents about the certification / standards in the forestry sector, as well as the regional NATURA 2000 protected sites. In the first case, the declared as poor / lack of awareness of the surveyed ranged from 36.7% to 46.7%, while in the second one it was from 29.3 to 52%. The declared good awareness by the respondents ranged between only 7.3% and 31.3% for certification/standards issues and 8.7% to 30.7%, respectively for the questions related to regional NATURA 2000 protected sites. The unsatisfac-

tory awareness among surveyed groups was also high, reaching 54.7% and 40%, respectively, in the first case and in the second one.

## Discussion

Vukoja et al. (2018) reported that the simultaneous implementation of ecologically responsible, socially useful and economically sustainable standards plays a key role for the successful development of the forestry sector. In this respect, we have structured the questions in our survey to cover these three basic standards. Our results show that when questions are formulated both as a source of additional information, on the one hand, and as good practices, on the other (biodiversity and ecosystem services part), the percentage of positive responses is higher. Such dependence has been observed also in similar studies by other authors (Carlson, Palmer, 2016; Garrido et al., 2017; Rafael et al., 2018). On the other hand, according to our results when the questions have been specific, including a psychological element of self-assessment (certification and NATURA 2000 part), the percentage of respondents who are uncertain or negative in their responses is increasing. In general, the results of our survey confirmed the hypothesis that the public opinion and awareness have to be mandatory integral parts of the sustainable forest management (Kozak et al., 2008; Eriksson et al., 2018; St-Laurent et al., 2019). Recognising and integrating the different types of knowledge and a wide range of different citizen groups will surely lead to a more comprehensive understanding of problems, dynamics and processes related to the biodiversity, certification and ecosystem services in the forestry sector.

## Conclusion

On the basis of the results obtained in the present study, we could formulate the following main conclusions:

Good awareness and a very positive attitude of the Velingrad Municipality respondents regarding the need for conservation and sustainable use of biodiversity and improving ecosystem services.

Still poor or lack of awareness of the surveyed groups, concerning certification and standards in the local forestry sector, as well as the regional NATURA 2000 protected sites.

The municipality of Velingrad has a great potential and long-standing traditions in the forestry sector in terms of education, training and production (well-functioning National Vocational School of Forestry “Hristo Botev”, Vocational School of Wood Processing “Hristo Botev”, Experimental Base of University of Forestry-Sofia, over 350 woodworking companies and carpentry companies). This makes us optimistic that the public awareness about biodiversity, certification and ecosystem

services is improving in the Velingrad Municipality. The successful implementation of internationally integrated projects (such as the mentioned INTEGRAL and BIO-PROSPECT) is an additional guarantee for this.

## Acknowledgments

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