

ENVIRONMENTAL AWARENESS PERCEPTION OF YOUNG PEOPLE LIVING IN THE BIOSPHERE RESERVE IN LATVIA

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Abstract. *Environmental education issues are topical at all levels of education, from kindergarten to lifelong learning. The focus of this study was on young people. Vidzeme University of Applied Sciences (ViA) is located in Vidzeme region in Latvia, where the only biosphere reserve in Latvia is located. ViA researchers started research in this area already in 2006, surveying the local population on environmental, social and economic issues in 2007. In 2018 ViA students repeatedly carried out a study of this area by surveying young people up to the age of 19 (n = 120) with an aim of exploring the views of young people living in the biosphere reserve on environmental issues. Environmental awareness is one of the key factors influencing people's behaviour in deciding on a sustainable lifestyle.*

The European Union regularly conducts research of its citizens on environmental issues. In the latest report the respondents from Latvia have shown one of the lowest indicators when responding to the statement "You can participate in environmental protection yourself" – 76% agree with this statement, in comparison with, for example, the Netherlands – 97%, Sweden – 96%.

The youth survey in a face-to-face form was conducted from April to May 2018; it was done by the students and the obtained results were analyzed and compared with the study of 2007 by the authors of the article to characterize the trends in the perception of young people of environmental issues in a specially protected nature territory.

The perception of environmental issues was analyzed according to Bolscho environmental awareness dimensions. In general, the understanding and knowledge of environmental issues of the young people surveyed living in the territory of North Vidzeme Biosphere Reserve (NVBR) is positive, especially on resource-responsible, economical use. In terms of attitudes and values, young people express their support for the preservation of cultural traditions. With regard to the visibility of the NVBR, more work is required to explain the functions and possibilities of the NVBR. Compared to 2007, the feeling of pride of the fact that a respondent lives in a protected nature area has increased.

Keywords: *biosphere reserve, youth, awareness, environment.*

Introduction

Environmental awareness is one of the key factors influencing people's behaviour in making decisions about a sustainable lifestyle, which includes responsible consumption. Raising environmental awareness takes place both in the family, at school and in society. Environmental education issues are topical at all levels of education, from the kindergarten to lifelong learning if global and local society wants to achieve the Sustainable Development Goals (United Nations, 2015). A New Roadmap for the Man and the Biosphere (MAB) Programme and its World Network of Biosphere Reserves (MAM Strategy 2015-2025; Lima Action Plan 2016-2025; Lima Declaration) identifies cooperation in research, training, exchange and capacity-building projects. In the cooperation among different stakeholders, the most significant target group is locals, which is outlined in the Seville Strategy. Mitrofanenko et al. (2018) explains and provides a literature review of the role of the local people in participatory activities on the way to sustainable development in biosphere reserves (Mitrofanenko et al., 2018)

In this study, the emphasis was on young people; students were collaborating with secondary schools in developing and strengthening environmental awareness by taking active action in the territory of the North Vidzeme Biosphere Reserve (hereinafter – the NVBR) in Latvia.

Literature review

The NVBR is a part of internationally recognised framework of the UNESCO programme “Man and Biosphere”. The biosphere reserves differ from other categories of protected areas by their functions: 1) nature conservation, including the protection of natural systems and the genetic fund; 2) ensuring socio-economic development; 3) scientific research and ecological education (Melluma, 1993). Hadley affirms that the biosphere reserves are benchmark regions for sustainable development (Hadley, 2002). In order to ensure the socio-economic development in the biosphere reserves, it is important to develop young people's awareness of this kind of protected areas, especially in the context of the population decline. The visibility of the biosphere reserves in the society is low, including among the local population and tourists (Druvaskalne & Livina, 2008; Wall-Reinius & Fredman, 2007).

Environmental awareness issues have long been the focus of researchers' attention. The historical development of research in Europe and the Baltic Sea Region is well described by Finnish researcher Kokkinen, 2013. In Latvia, Prof. R. Jūrmalietis, Prof. R. Ernšteins, Ē. Lagzdīņa and others have carried out research on environmental awareness issues. The dimensions of environmental

awareness have been studied by Professor Emeritus D. Bolscho, University of Hanover, Germany, who has pointed out that four dimensions should be distinguished when identifying issues of an individual's environmental awareness: environmental knowledge (cognitive component), attitudes and values, emotional experience and interest, and behaviour and action (Bolscho quoted by Jūrmalietis). Knowledge can be defined as information that remains in memory, but does not always determine an individual's behaviour and action (Ham et al., 2016). Therefore, the question of how to determine and identify environmental awareness is rather complex. The most popular research methods for identifying opinions are interviews and surveys.

The need for regular and long-term research on the sustainable use of environmental resources cannot be put off, as well as the research on the ecological and economic assessment of biodiversity and ecosystem services, and the conservation plans of these sensitive natural resources, which is an integral part of "the green economy". Therefore, it is essential that research related to environmental and sustainable development issues is recognized as an important field of science in Latvia (VARAM, 2013).

Since in 2007 the researchers of Vidzeme University of Applied Sciences (hereinafter –ViA) conducted a population survey on sustainable development issues in the territory of the NVBR, and the territory of the NVBR is historically one of the most important research areas of ViA researchers, it was considered appropriate to repeat the survey after 11 years and compare the changes in the environmental awareness in the area of the NVBR in the youth age group. In January 2019, ViA HESPI (Institute of Social, Economic and Humanities Research) has acquired the status of an internationally recognized UNESCO Chair, which furthermore imposes a responsibility to conduct regular research in the area of the NVBR.

From the UNESCO and the United Nations policies and agenda, let's move on the European Union (EU). The EU regularly conducts research on environmental issues among its citizens. In the last report (2017), the respondents of Latvia have highlighted the problem of waste growth (65% of the respondents of Latvia have indicated this as one of the main problems, 59% of the respondents are worried about the increase in plastic waste, 64% – about the impact of various chemicals in daily consumption). The respondents from Latvia have shown one of the lowest indicators regarding the statement "You can participate in environmental protection yourself" – 76% agree with this statement, in comparison with, for example, the Netherlands – 97%, Sweden – 96% (European Commission, 2017).

The study focuses on strengthening the implementation of the Sustainable Development Strategy "Latvia 2030", which stipulates that Latvia should be "the EU leader in the preservation, enhancement and sustainable use of the

natural capital”. The NVBR sustainable development monitoring results (2017) showed that there are decrease of social indicators, but more stable are environment indicators and stagnation of economic and institutional indicators (Arklina, 2018).

Methodology

Description of the case study area

The NVBR is the only biosphere reserve in Latvia, covering 7.3% of the territory of Latvia (457,600 hectares of land and 16,750 hectares of sea) and home to 2.5% of the population of Latvia (49,519 inhabitants on 01.01.2017.). The natural increase indicator is negative in the NVBR, however, it has a tendency to decrease. The area includes 25 nature restricted areas, 1 nature park and 2 almost fully protected marine areas (Ainaži-Salacgrīva, Vitrupe-Tūja). The Landscape Ecological Plan (2008), the NVBR Coastal Tourism Development Plan (2009-2011), and other territorial management documents have been developed for the area.

The object and subject of the study is the knowledge of environmental awareness of young people (up to the age of 19) living in the territory of the NVBR. The youth target group has been selected taking into account three factors: 1) the EU policy “Europe 2020”; 2) the previous training activities in the study area were focused on children and youth; 3) raising the awareness of the biosphere reserve for youth with an aim of attracting youth to the NVBR.

The researchers started the research in this area already in 2006, surveying the local people on environmental, social and economic issues in 2007. And in 2018, ViA students repeatedly researched this area by surveying young people on environmental awareness issues and the life in the biosphere reserve.

The questionnaire contained 5 groups of questions. The first group of 13 statements was related to obtaining opinions on environmental awareness, in which a respondent had to choose whether to agree, disagree or have no opinion on the respective statement. The second group, in which the respondent had to name 3 popular tourism sites, was included in order to find out the respondents' knowledge of the natural and cultural-historical values of their neighbourhood and the NVBR area. The third group was devoted to the assessment of the quality of life, in particular the infrastructure available to the respondents. The respondents had to evaluate the availability and the possibilities of 15 different infrastructure elements and services, evaluating it on a scale from 1 – 5, where 1 - very poor, but 5 - very good. The fourth group of questions was included in order to find out the preferred information channel by which the respondents could get information on news and other issues regarding the NVBR. The respondents had to list the mentioned information sources in order of priority.

And at the end of the questionnaire, the respondents were asked to provide information about themselves, indicating age, nationality, length of residence in the current place of living, type of dwelling, place of residence (including municipality/town). In this article is analysed results from first group of answers. The research tasks were:

- 1) to identify the most significant problems in the youth audience in the context of environmental issues in the territory of the NVBR;
The answers will provide an opportunity to understand which areas of the environment regarding the NVBR need an in-depth work.
- 2) To identify the satisfaction of the young people with the availability of existing infrastructure and services at their place of residence;
One of the factors characterizing the quality of life that determine a person's happiness, well-being, self-realization, health, fulfilment, meaningful existence, etc. is the availability of public services and infrastructure at the place of living that must be provided by the state. To some extent, this also determines the existence (living, working) of population at a particular geographical location. These opinions would help identify positive and negative trends in the service and infrastructure offer.
- 3) to compare the data of both surveys to the extent possible (2007 and 2018)

The limitation of the study is that the results obtained cannot be compared with the previous study in the context of administrative districts, since after the administrative reform carried out in 2009, the area of the NVBR is currently located in the territories of 10 municipalities, while in 2007 there were 43 local municipalities (33 parishes, 1 region, 6 towns with rural areas, 3 districts), 16 administrative areas were only partially covered.

Research results

By age structure, the most respondents (67.9%) were young people aged 15-19, Latvians (94.6%) living in the territory of the NVBR (55.4%) since birth or more than 11 years (18.8%) (Table 1).

When carrying out the survey, the aim was to survey the youth group in proportion to the population of the respective municipality located in the NVBR. However, it was not always possible to meet so many young people at the respective place and time.

The respondents were also asked about the type of their dwelling, as it also relatively often determines various environmental activities and habits, such as the possibility to sort waste, leisure activities, etc. 28.6% indicated they were living in an apartment house in the village. The second largest group were those

living in farmsteads outside the village – 20.4%, the third largest group (18.4%) – the respondents living in a detached house in the village area.

Table 1 Age, nationality, length of residence of the respondents in the current place of residence in the NVBR area

Age	Young people aged 12 - 14		Young people aged 15 - 19		
		32,1 %		67,9 %	
Nationality	Latvian		Russian		
	94,6 %		5,4 %		
Length of residence in the NVBR area	Since birth	11-19 years	6-10 years	2-5 years	1 year
		55,4 %	18,8 %	4,5 %	17,9 %

The survey included 13 statements reflecting the respondents' views on environmental issues in the area of the NVBR (Table 2). According to Bolscho environmental awareness dimensions, the statements can be divided in the following way (see Table 2). (Bolscho & Hauenschild, 2006).

Table 2 Classification of the statements included in the questionnaire according to Bolscho environmental awareness dimensions

Environmental awareness dimensions	Statements included in the questionnaire
Knowledge of environment (<i>cognitive component</i>)	<ul style="list-style-type: none"> • Any economic activity in the territory of the NVBR is prohibited. • Felling forests in the area of the NVBR should be restricted, as I think it is too extensive. • The Internet connection is very important for business development in the NVBR area.
Attitude and values	<ul style="list-style-type: none"> • I believe that preservation of natural resources is possible through their careful use by everyone. • I think I will stay here for life. • We need to preserve our traditions by promoting the activities of amateur choirs and dance groups.
Emotional experience and interest (<i>emotional component</i>)	<ul style="list-style-type: none"> • I am proud to live in a specially protected nature area. • I have noticed the logo, stands and signs of the NVBR in many places, and I can say it is visible.
Behaviour and action (<i>conative component</i>)	<ul style="list-style-type: none"> • I support waste sorting as a way to save resources. • I support measures for the conservation of the salmonids. • I participate in the events, seminars and festivals organized by the Nature Conservation Agency, NVBR. • I save resources on everyday basis (electricity, water, heat). • I would gladly participate in the voluntary nature observation campaign throughout the year in the NVBR area.

When considering the results, it can be observed that for 7 statements (out of a total of 13), more than half of the respondents have answered positively. For

example, 93.8% of the respondents agreed with the statement that the preservation of resources was possible through their careful use by everyone. 88.4% of the respondents supported waste sorting, 86.6% agreed with the preservation of cultural traditions by promoting activities of amateur choirs and dance groups, and 79.5% agreed on the importance of the Internet resources in business development.

The most controversial responses were received on the statement that any economic activity in the territory of the NVBR was prohibited. 46.4% of the respondents did not know the answer, 17% responded incorrectly, only 37.5% answered that the economic activity was allowed.

In the NVBR concept it is more important to indicate the essential difference that this is a special area with one of the main functions being particularly the promotion of economic activity (Sacchetti & Campbell, 2017). It should also be explained that the word "reserve" used in the name of the biosphere reserve is no longer associated with the Soviet term "reserve", which was the most strictly protected nature area with many prohibitions.

The next statement relates to the identity of the NVBR; the respondents were asked about the presence of the NVBR logo in nature and its visibility. 44.6% of the respondents indicated they could agree with the statement, but 34.8% disagreed with it, 20.6% didn't know. If we compare these answers with those obtained in the 2007 survey, then the answers were divided more similarly: 38.8% replied that they recognized the logo, 34.7% did not recognize it, but 26.5% did not know the answer. If we compare the real situation in nature, currently there are the NVBR signs on the main national roads, the logo is visible on the information boards placed in nature.

The third statement which received relatively more (69.6%) negative responses was related to the participation in the events organized by the Nature Conservation Agency (NCA) in the territory of the NVBR. Only 17.9% of the respondents agreed with the statement and attended events. Our research findings of youth participation in the biosphere reserve activities confirm the results achieved by Mitrofanenko et al. (2018), namely that the activities with participation should be strengthened (Mitrofanenko et al., 2018). It should be noted that the number of events organized by Vidzeme region administration of NCA in the territory of the NVBR is irregular and considerably smaller than before. In 2017, the first NVBR Traveller Days were organized, which also took place in 2018. The activity of the Nature Education Centre "North Vidzeme", which educates the public on environmental issues, is of great importance. Since 2014, more than 100 classes with nearly 3,000 participants take place each year (Arkliņa, 2018).

The result regarding the statement whether the young people would stay in their place of residence until the end of their lives was no surprise either: 27.7%

responded positively, 57.1% would not stay, but 12.5% did not know. If we consider this statement in the light of the years that young people have lived in the territory of the NVBR, there is a certain correlation ($r = 0.25$): those who had lived there longer, more often indicated that they wanted to stay in this area. If we evaluate the positive correlations between the duration of residence in the territory of the NVBR and other statements, a positive correlation can be observed in the question on the preservation of cultural traditions ($r = 0.156$), the preservation of natural resources ($r = 0.33$), prohibitions of economic activity ($r = 0.30$), waste sorting ($r = 0.94$).

Regarding the statement of being proud to live in a specially protected nature area, 73.2% of the respondents indicated that they were really proud, but 22.2% indicated they did not really know the answer. Comparing this question with the survey of 2007, it can be concluded that in the 2018 survey this indicator is higher than in 2007 - in the age group up to 14 years - 60.6% agreed that they were proud, while 21.2% revealed that they did not know, but in the age group of 15-19 years 57.8% were proud, but 23.9% did not know the answer.

If we consider the respondents' answers to environmental questions in the context of the kind of dwelling a respondent lives in, there is a weak positive correlation in the questions on waste sorting ($r = 0.098$), saving of natural resources ($r = 0.073$), the NVBR logo and sign visibility ($r = 0.026$), the preservation of cultural traditions ($r = 0.061$), as well as comparatively weaker correlations on forest felling ($r = 0.022$), resource saving ($r = 0.028$), attendance of events organized by the NCA ($r = 0.016$).

Conclusions and/or recommendations

The understanding and knowledge of environmental issues of the young people living in the NVBR area is generally positive, especially in terms of responsible, economical use of resources. Compared to the 2007 survey, the responsibility for saving resources has increased (in 2007, 37% of the young people confirmed that they saved electricity, water, heat, in 2018 - 63.4%). In the context of the waste sorting issue, the data collected show the same results in both surveys (88% of the young people confirmed that they supported waste sorting).

Compared to 2007, the feeling of pride that a respondent lives in a protected nature area has increased (73.2% in 2018, 59% in 2007 indicated that they were proud about the fact). According to Vaeliverronen et al. (2017) study conclusions, the engagement of locals, particularly youth, is significant to improve the quality of life in an area. We found that the concept "youth for youth" is valuable and applicable in the future for research and environment

awareness activities. Youth estimates youth contribution in environment awareness activities. As well as that, the Eco Schools programme runs in 67 countries, including Latvia. The programme is contributing to the sustainable development education actively and it must continue and expand. ViA has an Eco-University Certificate and only one school – Vidriži – in the NVBR has an Eco-School Certificate for the academic year 2017/2018, and six institutions have a Green flag in the NVBR territory (Vides fonds, 2018).

We agree with the statement of Mitrofanenko et al. (2018) that the level of youth participation in the activities organised by biosphere reserves and the level of the environment awareness knowledge is linked to the management of a biosphere reserve.

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