AWARENESS OF THE POPULATION IN RURAL REGIONS OF SERBIA ABOUT RENEWABLE ENERGY SOURCES

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ABSTRACT

Public awareness about renewable sources can contribute to social acceptance of sustainable development projects. The purpose of this study was to determine attitudes and level of awareness of the population of rural regions of Serbia about renewable energy sources. The research method included the random sampling of 400+ respondents in Southern, Eastern and Central Serbia. A questionnaire with closed-ended questions for expressing attitudes (Likert scale) was used. Collected data have been analyzed with SPSS. The results of this study clearly show that the citizens of rural regions of Serbia are relatively poorly informed not only of general aspects of energy production and consumption, but of specific aspects related to the use of renewable energy sources. This investigation emphasizes the need for intensive public information campaign about the advantages and benefits of renewable energy in order to have broader public support for the implementation of this form of energy into energy sector of Serbia.

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Introduction

The shift of the world economy which is based on fossil energy sources towards renewable energy sources requires the engagement of a wide range of participants.

The main actors are state governments and competent ministries whose main role is to create the most favorable conditions for more intensive use and investments in renewable energy sources providing favorable legal regulations and effective legislative framework. Additionally, it is necessary to establish an effective institutional and organizational framework and to strengthen administrative capacities through sustainable use of renewable energy.

Numerous research shows that today renewable energy sources are used to a greater extent in those countries where wider public support has been provided, created or received (Celikler, 2013; Zakaria , 2018; Szakály 2020; Haber , 2021). Renewable energy can solve numerous environmental problems, reduce poverty rate and increase energy efficiency, but various financial obstacles and investment risks of potential investors hinder its rapid growth (Panaitescu, et al., 2020). These facts represent a great challenge for state and local administration, because they have to provide the most favorable political and financial conditions that will enable renewable energy sources to become permanently present on the energy market. (Vojinović, , et al., 2017). In addition, above -mentioned actors must be as flexible as possible and ready to remove numerous obstacles that prevent the renewable energy sector from growing. The state faces numerous social and technical barriers when developing the renewable energy sector. These barriers and obstacles require prompt actions in the areas of financial incentives, developing infrastructure and technologies, regulatory reforms, development of local communities, information and education programs (Taqvia et al., 2021; McGreevy et al., 2021).

Generally speaking, sustainable development cannot be achieved without active participation and mobilization of citizens. Since renewable energy sources represent an important segment of sustainable development it is necessary to have greater participation of citizens for a broader support and implementation of renewable energy sources. Citizens have an important role through their own choice of greater use of renewable energy sources in their homes, clear and expressed support given to social actors for promoting renewable energy, as well as active engagement within environmental organizations of the civil sector. Numerous experiences show that it is very important, especially at the beginning, to provide public support for the implementation of renewable energy sources into energy system of a country and to educate citizens about all possibilities and benefits of such a complex and demanding process (Piwowar , 2020; Pawłowski, 2017). In most counties of the EU participation of the public in decision-making regarding the energy sector is inevitable (Bovan et al., 2015). Public awareness about renewable sources can contribute to social acceptance of projects from this energy sector and overall improvement of consumers' behavior towards energy. Demographic and socio-economic factors can determine someone's

knowledge about different forms of renewable energy (Spyridon, 2014; Assali et al., 2019; Szakály et al., 2020). Implementation development of renewable energy sources depends on geographical location, support and awareness of citizens as well as on policy and strategic decisions made by state and local administration. The studies also indicate that promotion of renewable energy sources should be directed much more towards the local population (Thellufsen et al., 2020; Jelti et al., 2021).

Citizens can take significant participation in supporting the use of renewable energy sources by financing some projects from this energy sector. Financing decentralized infrastructures of renewable energy is a complex issue due to the fact that state organs do not have enough money, while private investors generally have aversion toward limitations such as high transaction costs and financial uncertainty. Consequently, alternative concepts for financing through the participation of citizens have been developed. These concepts mean that individuals can contribute to the realization of infrastructural projects by investing in renewable energy projects through various business models of financing (Özgür Y., 2014; Wheatcroft E. et al., 2020; Brown et. al, 2019).

Serbia has good energy potential in the field of renewable energy sources. It is nearly 4 Mtoe per year and can meet one fourth of annual energy needs in Serbia (Petkovic, 2009). That potential is great, especially if it is compared with potential from some European countries that are lacking renewable energy sources. Biomass is considered to be the biggest potential.

Broader implementation of renewable energy sources that allows reaching principles of sustainable development concept is a big challenge for Serbia (Žikić et al., 2017) One of the relevant characteristics of renewable energy sources in Serbia is their availability within specific and distinctive locations. When discussing their efficient use in Serbia, one should primarily take into account their potential at local level and their exploitation in order to meet the needs of the local community. Generally speaking, economically undeveloped, rural parts of Serbia have greater unused potential when renewable energy sources are concerned. So, for example, the cities in the southern part of Serbia (Nis, Kursumlija, Vranje) have the greatest capacities for the use of solar energy, while half of small water courses are located in the southern and western region. Wind energy can be used to the greatest extent in the region of windy area of southern Banat, areas in eastern Serbia, Kopaonik, Zlatibor and Pester. Accelerated development of renewable energy represents a significant opportunity for economic development of these regions that can greatly contribute to balanced regional development of Serbia (Marjanović, 2019).

In the terms of regional economic and social development of Serbia, biomass, which has a share of 63% in the total potential of renewable energy sources, is very attractive. Great potential of biomass lies in agricultural residue and wood biomass (Ratknić, et al., 2010).

Lalic et al. (2011) stated that Western Balkan countries have great potential for the development of energy production from renewable energy sources such as: biomass, geothermal, solar, wind and hydro energy. It is emphasized that renewable energy is a critical foundation for economic growth and social progress of all the Western Balkan

countries. Also, unused potential for energy production from renewable sources, together with an adequately set institutional framework, could create great possibilities for foreign investments (Golusin, 2010). Despite many challenges, Serbia's goal is to increase the share of energy from renewable sources in energy consumption, which is its obligation arising from its membership in The Energy Community of South East Europe, as a framework for the integration into the EU energy market (Djurišić-Mladenović N. et al., 2018; Maricic Karovic V. et al., 2018; Ristić D. et al., 2019).

Methodology

The research goals of this study were to determine attitudes and level of awareness of the population of rural regions of Serbia about renewable energy sources. The research was done in the cities of Kragujevac, Nis and Zajecar by random sampling of 400+ respondents, but the number was downsized to 400. These cities had been chosen for the research due to the fact that they represent administrative centers of central, southern and eastern rural regions and have great potential for the use of renewable energy sources. The sample consisted of 196 female and 204 male respondents. 2% (8) of the respondents have finished only elementary school, 232 respondents or 58% are with secondary school qualifications, while 160 respondents (40%), have high school education or have university degrees. A questionnaire with closed-ended questions for expressing attitudes (Likert scale) was used.

Collected data have been analyzed with SPSS. At the level of descriptive statistics, measures of central tendency (mean, median) and measures of variables (standard deviation) have been used. The following nonparametric tests have been used: Kolmogorov–Smirnov test, Mann-Whitney U test and Kruskal Wallis test. Post–hoc test (LSD) was also used. Processed data and obtained results are shown in tables.

The following hypotheses are tested in the research:

H1: Citizens are relatively poorly informed not only about general aspects of energy production and consumption but also about some specific aspects related to the use of renewable energy sources.

H2: Despite a relatively low awareness level of positive effects of sustainable development, people in rural regions of Serbia believe that renewable energy sources have greater economic, environmental and social importance than conventional fossil sources.

H3: The population supports the use of renewable energy sources that have the least negative impact on the environment, even in the case of high production costs of electricity.

H4: Citizens of rural regions of Serbia believe that the main causes of insufficient use of renewable energy sources lie in poorly informed population, complex administration procedures during the construction of facilities for the utilization of renewable energy, as well as the lack of state incentives.

Results

The questionnaire (Q1) starts by introducing respondents to the topics, asking them to assess their own knowledge about issues related to energy production and consumption (Table 1).

Table 1. Q1 - The respondents assessment of the own level of information about : Q1.1 - Plans of RS concerning electricity production in the future; Q1.2 - The impact of existing installation for electricity production on environment; Q1.3 - Economical use of energy in different areas of human activity

Q1	Extremly poorly	Poorly	Moderately	Well	Very well
Q1.1	16,0%	46,5%	31,0%	5,5%	0%
Q1.2	7,5%	56,0%	25,0%	11,5%	0%
Q1.3	12,5%	50,5%	27,0%	9,5%	0,5%

Source: Author's illustration based on research

In the second question (Table 2), the respondents were asked to assess their awareness about various forms of renewable energy sources. The respondents were best informed about solar energy whereby 12% of the respondents declared that they were well informed while 58% said that they were badly or extremely badly informed about this issue.

Table 2. Q2 - The respondents are asked how much are they personally informed about the following energy sources:

Q2		Extremly poorly	Poorly	Moderately	Well	Very Well
Q2.1.	Biomass	19,5%	55,0%	20,0%	5,5%	0%
Q2.2.	Geothermal energy	20,0%	51,5%	23,0%	5,5%	0%
Q2.3.	Wind energy	15,5%	48,0%	26,5%	9,0%	1,0%
Q2.4.	Solar energy	13,5%	44,5%	29,0%	12,0%	1,0%
Q2.5.	Hydro energy	12,0%	53,0%	21,5%	12,0%	1,5%

Sources: Author's illustration based on research

Opinions on the impact of the energy sector on the environment are expressed in the question that asked the respondents to assess the risk to the environment resulting from the production of electricity from some energy sources (Table 3).

Table 3. Q3 - The respondents are asked about their opinion concerning the danger on the environment of producing electricity from the following energy sources:

Q3	Source	Negligible small	Small	Moderate	Great	Extremely great
Q3.1.	Biomass	22,5%	47,5%	25,0%	5,0%	0%
Q3.2.	Geothermal energy	22,0%	53,0%	23,0%	1,5%	0,5%
Q3.3.	Wind energy	44,2%	36,7%	13,6%	5,5%	0%
Q3.4.	Solar energy	43,5%	35,0%	18,0%	3,5%	0%
Q3.5.	Hydro energy	21,0%	45,0%	25,0%	6,0%	3,0%
Q3.6.	Fossil fuels	0%	6,5%	15,0%	38,0%	40,5%

Sources: Author's illustration based on research

In the next question the respondents were asked to link different forms of energy to some characteristics and properties. Obtained results are shown in Table 4:

Table 4. Q4 - The respondents are asked to connect energy sources with their qualities: Q4.1 - the best for the environment; Q4.2 - the safest; Q4.3 - gives most energy; Q4.4 - gives cheapest energy; Q4.5 – most encourages economic development Q4.6 - creates the greatest number of new jobs; Q4.7 – best contributes to local community; Q4.8 – best contributes to energy independence and efficiency.

Q4	Biomass	Geo-thermal energy	Wind energy	Solar energy	Hydro energy	Fossil fuels	Mean	Std. dev.
Q4.1	*12,5%*	*14,0%*	*31,0%*	*32,0%*	*10,0%*	*0,5%*	3,1	1,18
Q4.2	*6,5%*	*11,5%*	*31,5%*	*30,5%*	*18,0%*	*2,0%*	3,5	1,16
Q4.3	*6,0%*	*4,5%*	*25,0%*	*22,5%*	*24,5%*	*17,5%*	4,1	1,38
Q4.4	*8,0%*	*8,5%*	*31,0%*	*35,5%*	*13,5%*	*3,5%*	3,5	1,18
Q4.5	*12,5%*	*17,5%*	*15,5%*	*26,5%*	*18,5%*	*9,5%*	3,5	1,52
Q4.6	*17,5%*	*17,0%*	*13,5%*	*17,0%*	*22,0%*	*13,0%*	3,5	1,69
Q4.7	*16,5%*	*17,5%*	*14,0%*	*19,5%*	*28,0%*	*4,5%*	3,4	1,55
Q4.8	*15,0%*	*12,0%*	*20,0%*	*24,5%*	*23,0%*	*5,5%*	3,5	1,48

Sources: Author's illustration based on research

On the basis of obtained mean values and standard deviation for all renewable energy sources, the respondents opt, in the first place, for those sources that can provide most energy, that are safest, provide the cheapest energy and give the greatest contribution to energy independence and energy efficiency (Table 4). By checking deviations from mean values, we can conclude that there is an increasing homogeneity regarding this issue (Tables 4 and 5). In the next question (Q5) **t**he respondents are asked to what extent renewable energy sources should be used for electricity production in Serbia. (Table 5).

Table 5. Q5 - The respondents answer to what extent renewable energy sources should be used for electricity production in Serbia.

Q5		No.	%
1.	less than today	6	1,5
2.	as much as today	32	8,0
3.	more than today	346	86,5
4.	should not be used	16	4,0

Sources: Author's illustration based on research

Serbia's economic development will inevitably lead to higher consumption of all forms of energy. The respondents are asked to give their opinion on adequate resources to fulfill the requirement (Table 6**).**

Table 6. Q6 – Respondents opinion on adequate resources
Q6.1- Preference should be given to sources that have the least negative impact on the environment even if more expensive; Q6.2 - Preference should be given to the sources that generates cheaper energy, but they have a greater negative impact on the environment; Q6.3 - Preference should be given to higher price for electricity from renewable energy sources despite the fact that in most cases it is more expensive than the energy produced from conventional sources (oil, gas, coal).

Q6	Disagreed	Partially agreed	Neither agreed or disagreed	Agreed	Fully agreed
Q6.1	6,0%	16,0%	21,5%	45,0%	11,5%
Q6.2	34,0%	37,0%	19,5%	8,5%	1,0%
Q6.3	7,0%	20,0%	33,0%	26,5%	13,5%

Sources: Author's illustration based on research

When asked to assess the cause of insufficient use of renewable energy sources in Serbia, the respondents gave the following answers (Table 7):

Table 7. Q7 - The responds when asked to identify the cause of poor use of renewable energy in Serbia: Q7.1 - All fossil fuels haven't been consumed yet; Q7.2 - Their inconstant availability throughout a year; Q7.3 - Economically unprofitable; Q7.4 - Poor awareness of the population about the benefits of renewable energy; Q7.5 - Administrative procedures during the construction of facilities for the exploitation of renewable energy are complex; Q7.6 - Lack of incentives from the state.

Q7	Disagreed	Partially agreed	Neither agreed or disagreed	Agreed	Fully agreed
Q7.1	*14,0%*	*27,0%*	*26,0%*	*26,0%*	*7,0%*
Q7.2.	*12,5%*	*28,5%*	*29,5%*	*25,5%*	*4,0%*
Q7.3.	*10,5%*	*28,0%*	*25,5%*	*26,0%*	*10,0%*
Q7.4.	*4,0%*	*10,0%*	*11,0%*	*50,0%*	*25,0%*
Q7.5.	*3,0%*	*10,5%*	*14,0%*	*54,0%*	*18,5%*
Q7.6.	*3,5%*	*4,5%*	*14,5%*	*47,5%*	*30,0%*

Sources: Author's illustration based on research

On the basis of mean and median, with 95% certainty, the respondents consider mentioned causes as very significant regarding insufficient use of renewable energy sources in Serbia.

Assessing the importance of certain facts related to renewable sources, the following results have been obtained (Table 8):

Table 8. Q8 - The respondents opinion on importance of renewable energy: Q8.1 - Reduce environmental pollution; Q8.2 - Reduce greenhouse gas emissions; Q8.3 - They are inexhaustible; Q8.4 - Contribute to energy independence; Q8.5 - Contribute to job creation and community development

Q8	Negligible small	Small	Moderate	Great	Extremely great
Q8.1	*3,5%*	*8,5%*	*22,0%*	*37,0%*	*29,0%*
Q8.2	*2,0%*	*8,5%*	*23,0%*	*43,0%*	*23,5%*
Q8.3	*2,0%*	*9,0%*	*20,5%*	*46,0%*	*22,5%*
Q8.4	*2,0%*	*9,0%*	*18,0%*	*50,0%*	*21,0%*
Q8.5	*1,5%*	*4,5%*	*20,0%*	*50,5%*	*23,5%*

Sources: Author's illustration based on research

Further analysis based on mean and median values, with 95% certainty, shows that the respondents consider mentioned facts related to renewable energy sources to be extremely significant. All general variables were tested for normality of distribution using Kolmogorov–Smirnov test and so brought into dependence (Tables 9 and 10). All general variables with 99% of certainty differ from theoretical normal distribution which implies the use of nonparametric statistical tests (Mann-Whitney U and Kruskal Wallis). By using Mann–Whitney U test we have concluded that there is no statistically significant difference ($p>0.05$) in obtained answers regarding the sex of the respondents (Table s 11 and 12).

Table 9. Statistical processing of the obtained answers

	Kolmogorov-Smirnov test		
	Statistic	df	Sig.
Q1	0,153	398	0,000
Q2	0,164	398	0,000
Q3	0,104	398	0,000
Q6	0,151	398	0,000
Q7	0,086	398	0,000
Q8	0,144	398	0,000

Sources: Author's illustration based on research

Table 10. Statistical results of the obtained answers

Variables	Gender			
	Male		Female	
	Average	Std. deviation	Average	Std. deviation
Q1	7,0	2,01	7,0	1,97
Q2	11,6	3,26	11,2	3,57
Q3	14,1	2,73	14,2	2,89
Q6	8,8	2,00	8,5	1,78
Q7	20,3	3,60	20,0	4,11
Q8	19,0	3,49	19,1	3,87

Sources: Author's illustration based on research

Table 11. Statistical results of the obtained answers

	Q1	Q2	Q3	Q6	Q7	Q8
Mann-Whitney test	19798,0	18454,0	19586,0	18580,0	19332,0	19674,0
p	0,865	0,177	0,854	0,215	0,567	0,782

Sources: Author's illustration based on research

Table 12. Statistical results of the obtained answers

Variables	**Degree**					
	Elementary school education		Secondary school education		Higher / University degree	
	Average	Std. deviation	Average	Std. deviation	Average	Std. deviation
Q1	6,4	1,84	7,2	2,01	6,8	1,96
Q2	12,2	3,22	11,6	3,51	11,0	3,27
Q3	14,6	3,37	14,2	2,76	14,1	2,85
Q6	9,2	1,69	8,4	1,95	8,9	1,79
Q7	19,4	3,17	20,0	3,60	20,4	4,24
Q8	19,0	4,00	19,1	3,61	19,0	3,78

Sources: Author's illustration based on research

According to Kruskal Wallis test there is a statistically significant difference ($p < 0.05$) in mean assessments of answers regarding individual awareness about the topics related to the production of electricity, as well as questions related to the willingness to pay a higher price for the electricity produced from renewable sources. There is also statistically significant difference ($p < 0.05$) in answers to the question whether the preference should be given to those energy sources that have less negative impact on environment although the energy from those sources is more expensive, or preference should be given to those sources that produce cheaper energy, although their negative impact on the environment is great (Table 13).

Since we have concluded that there is a statistically significant difference, we have proceeded to further analysis using Post Hoc test (LSD) and concluded that there is a statistically significant difference ($p < 0.05$) in those answers given by the respondents with secondary and high (university degree) education (Table 14).

Table 13. Statistical results of the obtained answers

	Q1	Q2	Q3	Q6	Q7	Q8
Kruskal Wallis test	5,982	5,149	0,540	8,417	2,074	0,143
df	2	2	2	2	2	2
p	0,049	0,076	0,763	0,015	0,355	0,931

Sources: Author's illustration based on research

Table 14. Statistical results of the obtained answers - Post Hoc test (LSD)

Variables	(I)	(J)	Average differences	p	95% confidence interval	
					Lower	Upper
Q1	Elementary	Secondary	-0,781	0,223	-2,04	0,48
		University	-0,359	0,579	-1,63	0,91
	Secondary	Elementary	0,781	0,223	-0,48	2,04
		University	0,422	0,040	0,02	0,82
	University	Elementary	0,359	0,579	-0,91	1,63
		Secondary	-0,422	0,040	-0,82	-0,02
Q6	Elementary	Secondary	0,769	0,207	-0,43	1,97
		University	0,263	0,669	-0,95	1,47
	Secondary	Elementary	-0,769	0,207	-10,97	0,43
		University	-0,506	0,010	0,89	-0,12
	University	Elementary	-0,263	0,669	-1,47	0,95
		Secondary	0,506*	0,010	0,12	0,89

Sources: Author's illustration based on research

Discussion

Our first hypothesis (H1) was that citizens are relatively poorly informed not only about general aspects of energy production and consumption but also about some specific aspects related to the use of renewable energy sources. The results in Table 1 show that the respondents believe they are badly informed both about issues related to the plans of Serbia regarding production of electricity and energy savings and about the impact that existing installations for electricity production have on the environment (62,5% and 63,5%). The answer to the question in this group, about economic issues of energy in different areas of human activity is in the middle with 63%. Also, Table 2 reveals that lack of information about biomass, geothermal energy, wind energy, solar and hydro energy are expressed from 63,5 up to 74,5% of the respondents. Therefore, answers received for Q1 and Q2 support H1.

The second hypothesis (H2) was that despite a relatively low awareness level of positive effects of sustainable development, people in rural regions of Serbia believe that renewable energy sources have greater economic, environmental and social importance than conventional fossil sources. When we analyze Table 3, it is obvious that respondents have clear attitude upon danger of producing electricity from the following energy sources, because biomass, geothermal energy, wind energy and solar energy are widely considered safe (in range 70-80%), hydro energy is following with 66% in contrast to the attitude expressed toward fossil fuels (great danger 38, 0% and extremely great danger 40, 5%-together 78, 5%). Again, in Q4 (Table 4), fossil fuels are considered least safe, just like with answers to questions that follow: encouraging economic development, contribution to local community and contribution to energy independence and efficiency. So, we conclude that H2 is fully proven.

The third hypothesis (H3) was that population in rural regions of Serbia supports the use of renewable energy sources that have the least negative impact on the environment, even in the case of high production costs of electricity. This hypothesis is not confirmed, because 40% of the respondents support this idea, 33% neither agree nor disagree, while 27% disagree or strongly disagree. Although in the future more and more information about renewable energy sources, the energy prices cannot be predicted easily in cases of small countries that are not independent considering energy, so the support for such an idea can easily shift from one attitude to another because one third of the respondents are neutral.

The forth hypothesis (H4) was that citizens of rural regions in Serbia believe that the main causes of insufficient use of renewable energy sources lie in poorly informed population, complex administration procedures during the construction of facilities for the utilization of renewable energy, as well as the lack of state incentives. H4 is partly confirmed, since economic unprofitability is said to be one of the reasons for insufficient use of renewable sources (26% of the respondents agree with such statement, 10% fully agrees, while 38,5% disagrees or fully disagrees and 25.5% are neutral); half of the respondents agree, while exactly quarter of them fully agree that poorly informed population has led to insufficient exploitation of renewable sources; too complex administrative procedures during the construction of facilities for exploitation of renewable sources for most of the respondents represents a cause of insufficient use of renewable sources (54%), while 25,5% are neutral; 47.5% of the respondents agree and 30% fully agree that lack of incentives by the state is a cause of insufficient use of renewable energy (Table 7 - Q7 group of questions)

When assessing the impact of the energy sector on the environment, the respondents have recognized fossil fuels as particularly dangerous, while all forms of renewable energy have been assessed for little or extremely little dangerous by more than 70% of the respondents. On the basis of obtained answers, the respondents are primarily in favor of those sources that can produce the greatest quantities of energy (wind and hydro energy), that are the safest (wind and solar energy), can provide the cheapest energy or give the greatest contribution to the energy independence and its efficiency (solar and hydro energy). Considering mean values deviation, there is pronounced homogeneity on this issue.

It is interesting that the respondents hardly connect mentioned characteristics to fossil and nuclear sources of energy. The respondents supported to a great extent the use of renewable energy sources, because the majority of them (86.5%) believe that these sources should be used more than they are used today.

Conclusion

Since renewable energy sources are an important segment of sustainable development that cannot be achieved without mobilization of citizens, their greater participation in supporting and using renewable energy sources is necessary. Numerous experiences show that, at the

beginning of the implementation of renewable energy sources into the energy system of a country, it is important to obtain public support, conduct a program to inform and educate citizens and familiarize them with all possible benefits and costs of such a complex and demanding process. Broader implementation of renewable energy sources which enables achieving the principles of sustainable development concept represents a great challenge for Serbia. In addition to numerous obstacles to the increased use of renewable energy sources in Serbia, a prominent place is taken by social barriers, that is, lack of knowledge and information.

The results of the survey clearly show that the citizens of rural regions in Southern, Eastern and Central Serbia are relatively poorly informed not only of general aspects of energy production and consumption, but of specific aspects related to the use of renewable energy sources. When assessing the impact of the energy sector on the environment, the respondents have recognized fossil fuels as particularly dangerous, while all forms of renewable energy have been assessed for little or extremely little dangerous by more than 70% of the respondents. It is interesting that the respondents hardly connect mentioned characteristics to fossil and nuclear sources of energy. The respondents supported to a great extent the use of renewable energy sources, because the majority of them (86.5%) believe that these sources should be used more than they are used today. Based on obtained answers we can conclude that the respondents support the use of those renewable energy sources that have less negative impact on the environment, despite the fact that the energy obtained from these sources is more expensive. Asked to assess the cause of insufficient use of renewable energy sources in Serbia, majority of the respondents agree that the causes are poorly informed population, too complex administration procedures during the construction of facilities for the exploitation of renewable energy and the lack of state incentives.

Although the research was organized in certain rural regions in Serbia and therefore the sample is not representative on national level, these results undoubtedly show poor awareness of the population regarding renewable energy sources and point to the need to inform the public more intensively about the advantages and benefits of renewable energy in order to have a broader public support for the implementation of this form of energy into energy sector of Serbia. Further investigation should follow research on national level and the optimal ways to inform and mobilize the public in order to create a stable public opinion on this subject.

Conflict of interests

The authors declare no conflict of interest.

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