

**PUBLIC OPINION SURVEY AS A FORM OF PUBLIC  
PARTICIPATION IN THE IMPLEMENTATION OF WATER  
FRAMEWORK DIRECTIVE**

**CASE STUDY - LESKOVAC FIELD IRRIGATION**

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**Abstract.** *The adoption of the Water Framework Directive is a turning point in the development of European water resources management. For the first time in the history of Europe, a uniform strategy for environment protection and water resources management was created. According to the proclaimed policy of the European Union, the Water Framework Directive pays a careful attention to the public participation in the issues concerning the water resources development.*

*The paper gives a short presentation of the public participation in the Water Framework Directive and complementary EU directives. The right question that becomes an issue in the countries in transition is, how much the public, including the users of waters, is willing to actively participate in the implementation of the Water Framework Directive. In an attempt to obtain the answer to this question, the Regional Center for Sustainable Development and Ecology of Nis, conducted a survey of the public opinion (users of waters) about the irrigation of the Leskovac field.*

*The public opinion survey that was conducted in the Leskovac municipality shows that a great majority of farmers comprehends the great importance of irrigation, but a negligible part of the respondents accepts the fact that the construction of the system inevitably brings about the changes in crop structure, irrigation methods and water price. The obtained answers show how much the public participation, including the users of waters, is significant for the decision making in water resources management. The first task in the application of the Water Framework Directive is informing the widest possible public with the need to rationally use and protect the water resources. When the public is better acquainted with the water resources issues, it will be capable to assist in their solution.*

## 1. INTRODUCTION

The European Union policy in certain field is carried out through the directives issued by the European Parliament and EU Council. These directives do not only oblige the member states, but also all the candidate states for the EU pay a due attention to the to the EU directives, in order to adjust the local regulations to the legislature of the EU.

The European parliament and the EU Council adopted the directive 2000/60EC (Water Framework Directive) on 23<sup>rd</sup> of October 2000. This directive was issued on 22 of December 2000 in the Official Journal of the European Communities (OJ) L 327, pages 1 – 72, and it came into effect on the same day (paragraph 25 of this directive). The Water Framework Directive has twenty-six paragraphs and eleven annexes. It was supplemented by the decree of the European Parliament and Council number 2455/2001/EC since 20<sup>th</sup> of November 2001 that was issued on 15<sup>th</sup> of December 2001 (OJ L 331, p.1) and came into effect a day later. By this decree, a list of priority substances in the area of water resources is established and added as the annex X to the Water Framework Directive (paragraph 1, decrees 2445/2001/EC).

Adoption of the Water Framework Directive is a turning point in the development of the European water resources management. For the first time in the history of Europe, a uniform strategy for environment protection and water resources management was created. The water resources in the territory of the EU become the concern of the whole Union and no autonomous decision making of the individual state in this field is allowed. The importance of this directive surpasses the boundaries of the European Union. By the force of its political and economic authority, the EU manages to enforce the directive not only in the candidate countries, but in all the countries which have the common large river basins with the EU. It is in the best interest of the Serbian water resources management to, irrespective whether Serbia will become a member of the EU or not, pay a due attention to the Water Framework Directive, and other water resources related EU directives.

Many studies presented examples of WFD implementation. Wasson et al. (2003) presented five examples of issues related to water modeling for the implementation of the WFD, based on studies underway in France. Three examples of application of river basin models for different areas in Denmark were presented in Dorge and Windolf (2003). The authors concluded that river basin models might play an important role in WFD implementation process. The dynamic conceptual DPCER (Driving forces-Pressures-Chemical state-Ecological state-Response) framework was developed to fit better to the implementation of the WFD (Recolainen et al. 2003). The first experience in the application of this directive for the Havel River, Germany, was presented in the paper Lahner (2004). The author developed the new concept in water resources management on the regional level, through the application of the system for decision-making support (Decision Support System – DSS). Bazzari et al. (2004) developed DSS applied in irrigation, and is based on the Water Framework Directive. In Lithuania, the topology and ecologic classification of the lakes according to this directive was developed (Poikane et al. 2004). Macedonia is preparing the new law on waters that is completely adjusted to the Water Framework Directive. The territory of Macedonia is completely divided into four river basins, which will be subject to integrated management (Dodeva and Pulevska 2004). Slovenia also adopted a water resources management that is adjusted with this directive (Krajnc and Blazeka 2004). Jirka et al. (2004) discussed about the "combined approach" in the WFD.

Tsagarakis (2005) focused on the valuation of recycled water, the involvement and education of users, and the impact of information. Krause-Jensen et al. (2005) analyzed how the depth limit of eelgrass in Danish coastal waters can be used as a bioindicator of water quality under the WFD.

In Serbia, the papers that were aimed at informing the professional public with the significance of the Water Framework Directive were published (Dalmacija et al. 2003: Ljuljic and Aleksic 2003, 2004: Petkovic 2001, 2003a, b, 2004: Petkovic et al. 2003). Bogdanovic (2003) wrote about the great importance of the directive 96/61/EC about the integrated prevention and control of pollution, and comparison of our regulations with the EU directive 98/83/EC on the water quality intended for human consumption was done in Milojevic (2004). Sundac (2003) deals with the directives on hazardous substances (76/464/EEC and related sub-directives).

The participation of public has not been paid appropriate attention to up to now. The societies with the developed democratic consciousness tend to attain the widest possible social consensus on the issues of common social importance. The system institutions will be trained to act as a civil service if the state provides the participation of the citizens in the procedure, at all levels of decision making, if the functioning of state organs is public and if the public may, unimpeded, obtain information about it, and if the efficient legal protection is provided in case any of these rights is threatened. The active role of the public in the social processes is a reality in the developed countries, and is a necessity in the countries in transition. The aim of this paper is to point to the significance of the public participation in the implementation of the Water Framework Directive, and to show on an example how the users of those waters may influence the decision-making in water resources management.

## 2. PUBLIC PARTICIPATION IN THE WATER FRAMEWORK DIRECTIVE AND IN COMPLEMENTARY EU DIRECTIVES

The public participation concept makes possible that the individuals, groups of citizens, NGO's, corporations be informed and that they can express their opinion on the general acts or individual decisions which are of interest to them, and to express their dissatisfaction (through legal action) with the decisions of the state organs.

In the broad sense, the participation of the public appears in three basic forms:

- Right to access information
- Right to participate in the decision making process
- Right to access the justice.

In the narrow sense, the participation of the public comprises the right of all the interested parties to take part in the decision-making.

The European Union directives take care about the public participation in the issues of general social significance. In the area of waters and the environment protection, in 1990, Directive 90/313/EEC was passed, which was dedicated entirely to the freedom of access to environment information.

The paragraph 15 of IPPC directive (96/61/EC), which refers to the integrated protection, and control of pollution is about the access to information and the public participation in the procedure of issuing the integrated licenses. This paragraph states that the

member states of the EU are obliged to take the necessary measures to provide that the demands for issuing of the licenses are available to the public.

In the paragraph 6, of the directive 97/11/EC, which alters and complements the Directive 85/337/EEC on the estimation of the influence of certain public and private projects on the environment, states that the manner in which the public is consulted ought to be determined (via written reports, through the public survey etc.).

The fourth Ministerial Conference: "Environment for Europe", held in Aarhus, Denmark, adopted on June 25<sup>th</sup> 1998 the Convention on access to information, public participation in the decision making and justice in environmental matters. This Convention, which has 22 paragraphs and two annexes, is known as the Aarhus convention. By its adoption, a new era in the field of the environmental issues begun. It includes waters and it is the most ambitious enterprise in terms of democratization in the area of environmental matters. By the middle of 2003, forty-five countries signed this Convention (Korman and Maric 2003) and they committed to undertake the required legal measures to provide the compliance to the provisions of the convention (paragraph 1, article 3 of the Aarhus convention).

The European Union, as one of the signatories, adjusted its legislature with this Convention. For that purpose, the European Parliament and European Union Council adopted the directive 2003/04/EC about the public access to information of environmental matters and about the canceling of the directive 90/313/EEC. After the signing of the Aarhus convention, and the taken commitments, the European Union expressed the opinion that it was not possible to adjust the directive 90/313/EEC with the Aarhus convention, and that it was necessary to adopt a completely new directive which would regulate the relationships in the area of public access to information of the environmental matters.

The European Parliament and the European Union council also adopted the directive 2003/35/EC about the public participation in production of the outlines of certain plans and programs relating to the environment, and which supplement the directives 85/337/EEC and 96/61/EC (IPPC directive) issued by the Council. The directive 2003/35/EC directly invokes, in the preamble, the Aarhus convention and its objective is alteration and complementing of the previous directives 85/337/EEC and 96/61/EC through the provisions of the Aarhus convention. Thus the paragraphs 4 and 5 of the article 2 of the Aarhus convention concerning the defining of public and interested public were used as a model for the articles 1, 2 and 3 of the Directive 2003/35/EC. Thus the term "public" denotes one or more physical persons or corporations, and, in agreement with the national regulation or practice, their associations or groups. While the term "interested public" denotes the public, which is threatened or has an interest in decision-making concerning the environment, including waters.

The directive 2001/42/EC of June 27<sup>th</sup> 2001 has a great importance for the application of the Water Framework Directive. The paragraph 19 in the preamble of the Directive 2001/42/EC deals with the obligation of the member states of the EU to incorporate the agreed and common procedures of this directive and the Water Framework Directive. The article 6(4) of the directive 2001/42/EC states that the member states of the EU are obliged to identify the public exposed to the negative influence, or one interested for the decision making process, and that it is a duty of the member states to pass the more elaborate regulations in the field of public participation in the evaluation of the influence of certain plans and programs on the environment, including waters.

According to the proclaimed policy of the EU, the Water Framework Directive pays great attention to the public participation in the issues concerning the development of the water resources. In the paragraph 14 in the preamble of this Directive, it is stated that the success of the Water Framework Directive depend, both on the close cooperation of the member states of the EU, and the informing, consultation and participation of the public, including the users of waters. Further on, the paragraph 46 of the preamble, states that, for the purpose of ensuring the public participation, including the users of waters in the establishing and alterations of the plans of river basin management, it is necessary to provide the appropriate information on the planned measures and report of the progress in the course of their application, taking into account the public participation prior to making the final decisions on the adoption of necessary measures.

The article 44 of the Water Framework Directive regulates the issues of informing and consulting the public. This article states that the member states will support the active participation of the interested public in the application of the Water Framework Directive, especially in the phase of making, reassessment and changing the plans of the river basin management.

The member states are obliged to, in the strictly predetermined intervals, ensure that the following documents are subject to the remarks of the public or the water users:

Work plan and dynamic plan (at least three years prior to the start of the application of a plan)

- Preliminary list of the significant elements for management (at least two years prior to the start of the application of a plan)
- An outline of the river basin management plan (at least a year prior to the start of the application of a plan)

In this article the member states are obliged to provide at least six months for the remarks in the written form, to these documents, for the purpose of the active participation and consulting the public. The same procedure is applied in the reassessment and alterations of the plans for the river basin management. The article 13 of the Water Framework Directive deals with the obligation to produce the plans of the river basin management at latest nine years since this Directive has come into effect (22<sup>nd</sup> of December 2009), and the reassessments and changes of plans are carried out every six years.

From the said paragraphs of the preamble and the article 14 of the Water Framework Directive, it may be seen does not refer to the status of the environment, as it is the case in the directives that are complementary with the Water Framework Directive. Such relationship stems from the fact that the water resources management is a very complicated process, where protection of the environment is just a segment of the whole process. The public participation is specially expressed in the production, reassessment and changing of the plans for river basin management. That is why it is required that the Water Framework Directive be adjusted to the directive 2001/42/EC on the estimation of the influence of certain plans and programs on the environment. The basic data on the EU directives mentioned in this chapter are given in table 2. More on these directives may be found in the publication Bogdanović (2002).

Table 1. Basic data on the EU directives complementary to the Water Framework Directive

No.	Directive	Official Journal	Publishing date	Topic of the directive
1	85/337/EEC	OJ L 175, p. 40	05.07.1985.	Assessment of the effects of certain public and private projects on the environment
2	90/313/EEC	OJ L 158, p. 56	07.06.1990.	Freedom of access to the information on the environment
3	96/61/EC	OJ L 257, p. 26	10.10.1996.	Integrated pollution prevention and control
4	97/11/EC	OJ L 073, p. 05	14.03.1997.	Amending Directive 85/337/EEC
5	2001/42/EC	OJ L 197, p. 30	21.07.2001.	Assessment of the effects of certain plans and programs on the environment
6	2003/04/EC	OJ L 041, p. 26	14.02.2003.	Public access to environmental information and repealing directive 90/313/EEC
7	2003/35/EC	OJ L 156, p. 17	25.06.2003.	Public participation in respect of the drawing up of certain environmental plans

The specifics of the implementation of the Water Framework Directive in the field of public participation reflect in the fact that only in this directive one group is clearly outlined – users of water as a special part of the public. Such attitude is absolutely justified because the users of water in the field of water resources management are, should be, the most interested part of the public.

The right question for the countries in transition is to what extent the public, including the users of water, are ready to actively take part in the implementation of the Water Framework Directive. Attempting to obtain the answer to this question, the Regional center for the sustainable development and ecology of Nis, surveyed the public (users of water) on the question of irrigation of the Leskovac field. The irrigation was taken as an example since the implementation of the Water Framework Directive, in the part of introduction of the economic price of water (article 9 of the directive) may produce a certain resistance at the farmers, who are the end users of the irrigation systems.

### 3. RESULTS AND DISCUSSION

Irrigation of the Leskovac field has been topical since 1960 when the design of the irrigation of the Leskovac field was completed, which envisaged irrigation of 3,400 ha from the Southern Morava River. This design was not realized. This idea was re-actualized when the reservoir Barje on the Veternica River was built. The analyses showed that at least 3,000 ha of arable land could be irrigated with this water (Potic and Trajkovic 2003). The municipality of Leskovac adopted the Municipality development strategy, where the prominent place is occupied by the irrigation. In the public discussion prior to the adoption of this document, the opinion of the users of water was not heard.

The survey (of the users of water) was conducted by the mid July 2003, in the villages Donji Bunibrod, Gornji Bunibrod, Donji Guberevac, Gornji Guberevac and Velika Grabovnica. These villages, inhabited by around 4,000 people, are in the immediate vicinity of Southern Morava River, in the most fertile section of the Leskovac field. The most part of the villagers is agricultural and there is a long tradition of irrigation in these

villages. One hundred and seventeen households took part in the survey, and they were chosen randomly. The respondents could complete assertions:

1. Irrigation is necessary
  - a) Yes
  - b) No
  - c) Partially
2. I irrigate
  - a) 70-100% of my land
  - b) 30-70% of my land
  - c) Less than 30% of my land
  - d) I do not irrigate
3. I use for irrigation:
  - a) Underground water
  - b) Surface water (river, stream)
  - c) Still water (pond, lake)
  - d) Other
4. Most frequently used irrigation method
  - a) Surface irrigation
  - b) Irrigation by sprinklers
  - c) Other
5. In irrigation, I use the advices of:
  - a) A professional
  - b) Other farmers
  - c) I use none's advices
6. Do you need new irrigation equipment
  - a) Yes
  - b) No
  - c) Perhaps, but I cannot buy it
7. If an irrigation system is constructed, I am ready to pay
  - a) 80-100% of the price
  - b) 40-80% of the price
  - c) Less than 40% of the price
  - d) I would not use the water from the system
8. If an irrigation system is constructed, I am ready to cultivate other crops.
  - a) Yes
  - b) No
  - c) Perhaps

Table 2. Results of the survey of the irrigation water users

Attitude	Number of respondents	% of the total number of respondents	% of those who irrigate	Attitude	Number of respondents	% of the total number of respondents	% of those who irrigate
I				V			
1a	102	87.2	-	5a	3	2.6	2.9
1b	4	3.4	-	5b	12	10.3	11.5
1c	11	9.4	-	5c	89	76.1	85.6
II				VI			
2a	6	5.1	-	6a	2	1.7	1.9
2b	38	32.5	-	6b	66	56.4	63.5
2c	60	51.3	-	6c	36	30.8	34.6
2d	13	11.1	-	-	-	-	-
III				VII			
3a	93	79.5	89.4	7a	3	2.6	-
3b	11	9.4	10.6	7b	6	5.1	-
3c	0	0.0	0.0	7c	17	14.5	-
3d	0	0.0	0.0	7d	91	77.8	-
IV				VIII			
4a	101	86.3	97.1	8a	5	4.3	-
4b	3	2.6	2.9	8b	64	54.7	-
4c	0	0.0	0.0	8c	48	41.0	-

A large majority of the respondents, more than 87%, supports the attitude on the necessity of irrigation. Around 89% of the respondents irrigate their agricultural land. However, the most of them (60 respondents, 51%) irrigates less than 30% of their land. For irrigation, the underground water is mostly used (89% of the respondents who irrigate), and the surface irrigation is the dominating method (97% of the respondents who irrigate). Such response indirectly indicates that the equipment of the majority of respondents consists only of the pumps. The answer to question no 6 shows that 66 respondents (around 64% of the respondents who irrigate) are quite satisfied with such modest equipment. Only two respondents expressed a wish to buy the new, modern equipment, which in accordance with the opinion expressed by 89 respondents, that they do not use the advices of the experts or other farmers in irrigation.

The Water Framework Directive introduces the principle of the economic price of water from 2010 on (article 9 of the Directive). The answers to question no 7 showed that almost 78% of the respondents refused to use the water from the system if they had to pay at least a portion of the real price of water. Only three respondents agreed to pay more than 80% of the economic price of water. The explanation offered to the surveyors was that up to now, the irrigation water is for free.

The construction of the irrigation system comprises the change of crop structure, more extensive presence of the industrial cultures (sugar beet, sunflower, soybean), and introduction of preconditions for the industrial cultures and other crop (Molnar et al. 1989). However, only 5 respondents wished to change its crop structure. Such answer could be expected after the attitude of the majority that does not want to pay not a part of the eco-



conomic price of water. If the answers to seventh and eighth question are compared, a certain disharmony in the answers may be observed. Even though 91 respondents claimed that they would not use the water from the irrigation system, only 64 said that they would not change the crop structure. There are two basic reasons for such disharmony: either the respondents did not understand the eighth question well; or the significant part of the respondents was thinking about using the water from the system and would perhaps change their opinion if they were acquainted with all the advantages of the irrigation system and with the need for the rational usage and protection of waters. The survey results have been given in the table 2.

The construction of the irrigation system effects the modernization of the complete agricultural production. However, the expressed attitudes demonstrate that there is a strong resistance in the potential users of water to any modernization. In this case, there are no realistic conditions for the successful operation of the irrigation system, so that the construction cannot be recommended in this region. The obtained results demonstrate that one of the reasons for degrading of a large number of the irrigation systems lies perhaps in the fact that no public was consulted in the making of decision to build the systems.

#### 4. CONCLUSION

The adoption of the Water Framework Directive is the turning point in the development of European water resource. This directive requires that all the water resources institutions of the EU work in a uniform manner, to regularly inform the public, and to have the citizens express their opinion on all the significant water resources plans. In the future, for all water resources systems the prior consent of the representatives of the public will be required (class associations, individuals, NGO sector, users of water).

However, very low degree of understanding of water resources problems is present in Serbia. The survey of the public opinion, conducted in the municipality of Leskovac demonstrates that a large majority of farmers comprehends the significance of irrigation, but a negligible part of the respondents accepts the fact that the construction of the system inevitably leads to the changes in the agricultural production (new crop composition, modern irrigation methods, and economic price of water).

The long-lasting regime that did not respect the logic of economy led to the fact that the greatest majority of the public holds that the state is obliged to provide water to all the users per low, non-economic prices. Water should finally become the economic category in our country. Without the economic price of water, there are no conditions for development of any water resources segment.

The obtained answers demonstrate how extensive the public participation is, including the user of waters, in the decision making in water resources management. The first task is to inform the widest interested public with the necessity to use rationally and protect water resources. The users of water should have the realistic concept of the finances required for construction and unimpaired function of the water resources systems. The education of the importance of water should be started as soon as possible. The whole education process should be pervaded with the accent on the protection of the environment, including waters. The individual formed in such an environment will behave rationally and responsibly. When the public is acquainted with the water resources problems, it will be able to help in their solving.

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## **ISPITIVANJE JAVNOG MNJENJA KAO VID UČEŠĆA JAVNOSTI U IMPLEMENTACIJI OKVIRNE DIREKTIVE O VODAMA PRIMER NAVODNJAVANJA LESKOVAČKOG POLJA**

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*Usvajanje Okvirne direktive o vodama predstavlja prekretnicu u razvoju evropske vodoprivrede. Po prvi put u istoriji Evrope izgradjena je jedinstvena strategija za zaštitu životne sredine i upravljanje vodama. U skladu sa proklamovanom politikom Evropske unije, Okvirna direktiva o vodama poklanja veliku pažnju učestvovanju javnosti u pitanjima koja se tiču razvoja vodoprivrede.*

*U radu se daje kratak prikaz učešća javnosti u Okvirnoj direktivi o vodama i komplementarnim EU direktivama. Zemljama u tranziciji nameće se pitanje koliko je javnost, uključujući i korisnike voda, spremna da se aktivno uključi u implementaciju Okvirne direktive o vodama. U želji da dobije odgovor na ovo pitanje Regionalni centar za održivi razvoj i ekologiju iz Niša vršio je ispitivanje javnog mnjenja (korisnika voda) o navodnjavanju Leskovačkog polja.*

*Istraživanje javnog mnjenja sprovedeno u opštini Leskovac pokazuje da ogromna većina poljoprivrednika shvata značaj navodnjavanja, ali da zanemarljiv deo ispitanika prihvata činjenicu da izgradnja sistema neminovno dovodi do promena u setvenoj strukturi, metodi navodnjavanja i ceni vode. Dobijeni odgovori pokazuju koliki značaj ima učešće javnosti, uključujući korisnike voda, na donošenje odluka u vodoprivredi. Prvi zadatak u primeni Okvirne direktive o vodama jeste upoznavanje najšire zainteresovane javnosti sa potrebom racionalnog korišćenja i zaštite vodnih resursa. Kada se javnost bolje upozna sa vodoprivrednim problemima, moći će da pomogne u njihovom rešavanju.*