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## Implementation of the Directive 2006/7/EC in Selected EU Member States in the 2017-2019 Period

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**Abstract:**

**Purpose:** The aim of this article is to present bathing water quality in the EU, with particular emphasis on Poland and neighbouring countries. In the authors' opinion, identification of the possible deficiencies of the adopted solutions may allow to assess and amend the content of the normative acts.

**Approach/Methodology/Design:** Desktop-based research that consisted in a document and database review of available information, statistics and other data from international, national, regional sources. The statistical analysis: performed on the basis of qualitative data collected from Poland and other European Union member countries via statistical databases. Subjective scope of the research: countries fulfilling the criteria of membership in the European Union and the nearest neighbourhood of Poland. Time frame for the research: was set up for the 2017-2019 period. Supplementary, a case study has been applied to present how the Directive 2006/7/EC was implemented in Poland.

**Findings:** The analysis of the data presented in this paper shows that implementing Directive 2006/7/EC in Poland resulted in the decrease in the number of bathing sites. Moreover, it resulted in a lack of monitoring and transparency of water quality assessments in other types of designated water areas.

**Practical Implications:** This paper identifies that it is not possible to quantify water quality on a 4-year basis for the majority of bathing sites in Poland and thus the transparency of water quality assessments in Poland has been impaired. The paper also raises awareness about problems with the implementation of the Directive 2006/7/EC in Poland and indicates the need for change.

**Originality/Value:** The presented overview may be useful for improving the management of bathing water quality in Poland, as it contributes to its proper current diagnosis.

**Keywords:** Bathing waters quality, bathing area, water profile, well-being, tourism.

**JEL classification:** F53, I31, Z30.

**Paper Type:** Research study.

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## 1. Introduction

The purpose of Directive 2006/7/EC – the *Bathing Water Directive* (BWD) (Directive 2006/7/EC, 2006), adopted in February 2006, was to preserve, protect and improve the quality of the environment and of protecting human health, thus continue the assumptions of the policy stemming from the Decision No 1600/2002/EC of the European Parliament and of the Council (Decision 1600/2002/EC, 2002). This Directive continued the activities already taken within the European institutions in the 1970s, in particular the 1976 BWD, which required the European Community to take harmonized actions in order to achieve good quality of bathing water and a high level of protection in member states (Directive 2006/7/EC, 2006). This Directive included provisions governing the control and the classification of the quality of bathing water, the management of water quality and the provision of information to the public about the quality of bathing water. It also required EU member countries to implement or adjust laws, regulations and administrative provisions required for the implementation of the Directive.

The initial implementation of the BWD requirements was finalized by 24 March 2008, and the full implementation of the above Directive, including the comprehensive classification of the quality of bathing water, was to be finalized in all EU member states in the 2015 bathing season (Kaznowska and Wasilewicz, 2020). Nevertheless, most EU member countries began reporting much earlier, more specifically, Germany, Lithuania and Slovakia began the reporting to the European Commission already in 2008, whereas Poland did so in 2011 and the Czech Republic only in 2012. The provisions of the Directive introduced uniform nomenclature (e.g., definitions of waters), methods of assessment and classification of the quality of bathing water, which, first of all, helped to compare and then provide to the public information about the water quality in the form of annual reports (EEA, 2019).

The provisions of the *BWD* provide only for the organization of bathing waters as sites of water recreation. As a rule, such bathing waters are organized during the summer season, and each country individually determines the start and end dates. Bathing waters need appropriate supervision over the quality of water by, among other things, collecting water samples four times at the minimum (first sample should be collected before the bathing season and the other three during that season) and testing water with the reference method for the presence of bacterial strains, the so-called enterococcus faecalis and *Escherichia coli* (Directive 2006/7/EC, 2006). Tests of water samples help to determine the current quality of bathing water. The assessment covers four bathing seasons and analyzes test results of sixteen water samples.

Member countries can shorten this period to 3 years. The only exception allowing for the bathing water quality classification to be carried out over a shorter period of time than prescribed – up to one bathing season only – is granted if a given water body is classified as a *newly-created bathing water*. Article 5 of the Directive

presents a four-grade scale used for assessing bathing water quality, 'poor', 'sufficient', 'good' and 'excellent' (Directive 2006/7/EC, 2006).

The BWD promotes a proactive approach to managing the beach environment by determining the water profile, in order to ensure quality assessment of potential sources of pollution connected with physical, geographical and hydrological characteristics of the beach environment. It was intended for the BWD to become a driver encouraging to identify and solve the issue of microbiological pollutions, which can contribute to the deterioration of bathing water quality and constitute a public health risk (Quilliam, 2015). To a large extent, the Directive adopts the bottom-up public governance model, which gives the local people an opportunity to become involved. Every European member country is facing its own specific problems (whose nature stems from physical, administrative, and socioeconomic constraints) in terms of bathing water management and implementation of the Directive (Globevnik *et al.*, 2020).

However, it is often pointed out that there are significant issues due to the lack of comparable data pertaining to the ecological status and due to consequences of measures pertaining to water quality at both the national and the EU levels, making it difficult to plan efficient actions (Wuijts *et al.*, 2018). Unfortunately, policy makers at the national level sometimes tend to display limited ambitions in this respect, making use of the ambiguity of potential consequences of the absence of implementation and, in particular, of different interpretations of requirements imposed under the Directive (Dieperink *et al.*, 2012).

Also, scientific literature does not present a consistent analysis of various aspects of water quality management – there are only few empirical studies concerning potential positive impact of management methods on water quality (Wuijts *et al.*, 2018). It is indicated in the literature that another problem concerns the fact that there still is some inconsistency between the country drafting and implementing the policy in this regard, and the individual – the person using the beach. It is not only recommended to focus resources on ensuring compliance with the Directive, but also to disseminate the information about bathing water quality among beach users, to also encourage the public to become more involved in the protection of the aquatic environment (Quilliam *et al.*, 2019).

It is necessary to raise the society's awareness regarding negative consequences of polluting the water used for recreation purposes and the responsibility of bathers and visitors to the designated bathing areas (Galic *et al.*, 2020). It also should be noted that the essence of the BWD is a selective choice of water quality indicators and some discussion should be had regarding changes (Gyraite *et al.*, 2020; Pronin, 2021). The BWD is also significantly different from the American standards (Tiwari *et al.*, 2021). Bathing water quality, and thus suitability of water ecosystems for bathing, is highly varied depending on the type of an ecosystem (Ivankovic and Pikelj, 2017, Buet *et al.*, 2018).

## 2. Methodology

Research methodology was based on the desktop-based research that consisted of a document and database review of available information, statistics and other data from international and sources (Embase), reports and publications of the European Environment Agency (EEA), and reports of the Chief Sanitary Inspector of Poland. The statistical analysis was performed on the basis of qualitative data collected *via* statistical database WISE. Time frame for the research was set up for the 2017-2019 period.

Desk research consisted of following analyses, number and location of bathing waters in selected EU member countries, number of bathing waters reported to the European Commission by EU member countries and analysis of selected EU member countries with respect to the number of bathing waters with excellent water quality in the 2017-2019 period. The subjective scope of the research was determined by the availability of data and the premise that a given country is a EU member country and directly neighbours Poland. Therefore, the research included the following countries: Poland, Lithuania, Czech Republic, Slovakia and Germany.

## 3. Research Results

In the 2017-2019 period, the European Union member countries had 21,509 bathing waters in 2017, 21,831 bathing waters in 2018, and 21,981 bathing waters in 2019. The percentage classification of bathing water quality in EU member states in the reference period is presented in Table 1.

**Table 1.** Bathing water quality classification in EU in the 2017-2019 period

Bathing Waters Quality	Years		
	2017	2018	2019
Excellent	85.0%	85.1%	84.8%
Sufficient and good quality	11.0%	10.3%	10.0%
Poor quality	1.40%	1.3%	1.31%
Quality classification not possible*	2.60%	3.2%	3.20%

**Note:\*** *Quality classification not possible: not enough samples/new bathing waters/bathing waters with changes/closed.*

**Source:** *Own study based on WISE database.*

Due to geographical conditions, such as air and water temperature, day length or insolation, the bathing season begins in late spring and lasts until autumn. The season is different for individual member countries and depends on the location of a given bathing water, e.g., whether inland or coastal. The analysis shows that the longest bathing season is in Germany and lasts from 12 May to 15 September (for coastal bathing waters) and from 1 April to 1 October (for inland bathing waters). The countries included in the study had the majority of their bathing waters located

in inland water areas, whereas only 30-45% located at the seaside. The data pertaining to the number of bathing waters and their location during the reference period are presented in Table 2.

**Table 2.** *Number and location of bathing waters in EU member states in the 2017-2019 period*

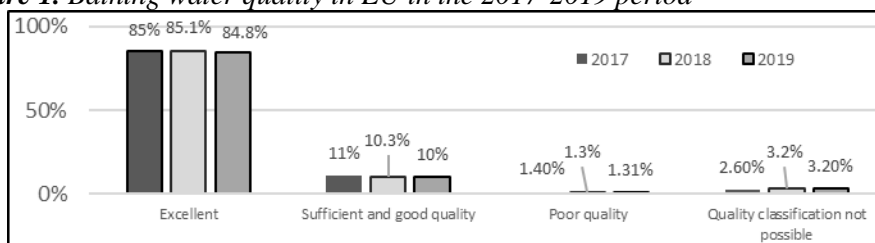
Country	Bathing waters - 2017			Bathing waters - 2018			Bathing waters - 2019		
	total reported	coastal	inland	total reported	coastal	inland	total reported	coastal	inland
Poland	205	97	108	483	146	337	606	163	443
Czech Republic	154	0	154	153	0	153	153	0	153
Germany	2,287	366	1,921	2,289	366	1,923	2,291	367	1,924
Lithuania	114	16	98	117	16	101	117	16	101
Slovakia	32	0	32	32	0	32	32	0	32

**Source:** *Own study based on WISE database.*

The data presented in Table 1 shows that the majority of reported bathing water in 2017 were in Germany (2,287). Poland came second in terms of the number of reported bathing waters – there were over 11 times fewer of them (205). The lowest number of bathing waters was in Slovakia – only 32. Large differences can be observed during the reference period in terms of the total number of bathing waters in selected countries. During the three years (2017-2019), the number of bathing waters reported in Germany and Lithuania only changed slightly (increased by four and three, respectively), however, the change was much more noticeable in Poland and amounted to 401 bathing waters.

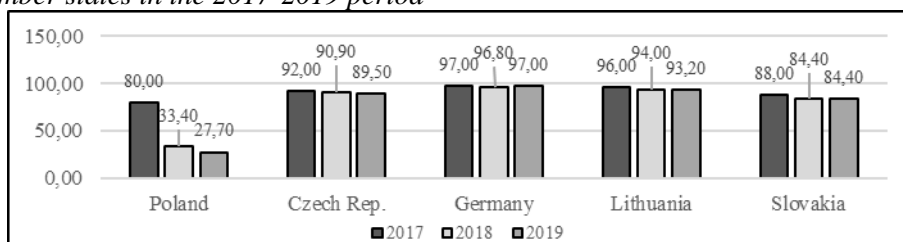
Furthermore, the analyses indicated certain correlations in terms of attractiveness of touristic regions, tourist accommodation and availability of water areas. The countries included in the study had the majority of their bathing waters located in inland water areas, whereas, for instance, the Mediterranean countries had the majority of their bathing waters at the seaside. In 2019, there were in total 2,234 bathing waters reported in Spain, including 1,968 coastal and only 266 inland ones (EEA Spain, 2019). The same year in Italy there were in total 5,535 reported bathing waters, including 4,864 coastal and 671 inland ones (EEA Italy 2019).

However, taking into account bathing water quality in EU member countries, the data analysis (Figure 1) shows that in 2017 85% of bathing waters had excellent quality, 11% had sufficient and good quality, and only 1.4% had poor quality. In the course of the three years, the number of bathing waters with excellent, good, sufficient and poor quality water dropped slightly – by 0.02 p.p. and 1 p.p and 0.09 p.p. At the same time, it may be surprising that the number of bathing waters with unclassified water quality rose by as much as 23% during the reference period.

**Figure 1.** Bathing water quality in EU in the 2017-2019 period

**Source:** Own study based on WISE database.

The analysis of water quality in EU countries states included in the study, based on the data in Figure 2, shows large disproportions between the countries under analysis. At the beginning of the reference period, the percentage of bathing waters with good and excellent water quality amounted to 80% (Poland) and as much as 97% (Germany). In the course of the three years, 80% of the countries under analysis maintained a good percentage (88%) of bathing waters with good and excellent water quality. However, surprisingly, one of the countries under analysis – Poland – noted a very significant drop by 65% of bathing waters with good and excellent water quality. E. Kaznowska and M. Wasilewicz emphasized that the drop was not related to a drastic deterioration of bathing waters quality, but it was a consequence of the methodology adopted to assess bathing waters (Kaznowska and Wasilewicz, 2020).

**Figure 2.** Percentage of bathing waters with good water quality in selected EU member states in the 2017-2019 period

**Source:** Own study based on WISE database.

Taking into account the number of bathing waters with each water quality classification, the analysis of the data in Table 3 suggests that in the 2017-2019 period a significant majority (80%) of the EU member countries under analysis had a steady number of bathing waters with consistent bathing water quality level, and, except for Slovakia and Poland, the percentage of bathing waters with water quality continuing at good and excellent level exceeded 90%. The unfavourable situation in Slovakia was impacted by a small (32) number of bathing waters and water quality level dropping to poor on one of its bathing sites, thus significantly decreasing the percentage of excellent quality bathing waters compared to the total number of bathing waters. The unfavourable situation in Poland was not caused by a dramatic deterioration of bathing water quality, but the abovementioned change in the

methodology which excluded newly-created bathing waters. In 2018, newly-created and unclassified bathing waters amounted to as much as 62.3% (EEA, 2018), and in 2019 – as much as approximately 70% (EEA Poland, 2019) of all the reported bathing waters.

The data analysis (Table 3) also allowed us to notice that the number of reported bathing waters in Poland almost tripled during the reference period. This was primarily due to the amendments to provisions of law which had been in force since 2010 (the 2010 Statute) and enabled the implementation of the *Bathing Water Directive*. The reports of the Chief Sanitary Inspector of Poland show that within the seven years when the provisions were in force, organizers of bathing waters limited their number, instead creating sites used for bathing (SUFB). Organizers of such sites made use of simplified submission procedures, did not need to determine the water profile and were able to commission just two water tests during one season (it is required to have at least four tests for bathing waters).

As a result of the organizers using a certain “loophole”, the number of sites used for bathing was significantly higher than the number of traditionally defined bathing waters. The trend from the previous year continued in 2017, as there were 19% of bathing waters (inland – 113 and coastal – 88) and as much as 81% of sites used for bathing (in total – 861) out of all organized locations for bathing in Poland (GIS, 2016). The trend of bathing waters “giving way” to sites used for bathing resulted in July 2017 in amendments being introduced to the *Water Law* (Journal of Laws of 2017, item 1566). They primarily consisted in restraining the worrying trend of closing bathing waters in Poland in order to create sites used for bathing by, for instance, excluding the possibility of organizing sites used for bathing and replacing them with sites occasionally used for bathing (SOUFB). However, it seems that the most important change was the introduction of time constraints on the creation of such sites (SOUFB) – up to 30 days in a year, and preventing certain substitutes from being created during the entire bathing season.

**Table 3.** *Bathing waters quality in Central Europe 2017-2019*

Country	Excellent	Good	Sufficient	Poor	Not classified
<b>2017</b>					
Poland	137	26	14	5	23
Czech Republic	126	15	2	1	10
Germany	2090	121	30	8	38
Lithuania	97	12	1	1	3
Slovakia	19	9	0	1	3
<b>2018</b>					
Poland	135	26	18	3	301
Czech Republic	125	14	2	2	10
Germany	2,123	93	27	6	40

Lithuania	99	11	2	1	4
Slovakia	18	9	1	1	3
2019					
Poland	131	37	17	2	419
Czech					
Republic	124	13	4	2	10
Germany	2,120	103	27	8	33
Lithuania	102	7	6	0	2
Slovakia	20	7	1	1	3

*Source: Own study based on WISE database.*

#### 4. Implementation of the Bathing Water Directive - Case of Poland

Implementation of the *BWD* in Poland was not quick or problem-free. The Directive introduced the term of the organizer (of bathing waters) that may be a natural person, a legal person or an organizational unit without legal personality (GIS, 2016). It shows that the legislator assumed that the supervision would only be imposed over leisure areas by the water, for which it is possible to determine an entity running a given bathing water or a site used for bathing, thus the liability for introducing the assumptions of the Directive would mostly be imposed on bathing water organizers (Skotak *et al.*, 2012). This approach omitted locations that are traditionally used by local people for bathing, where water quality is, *de facto*, not subject to tests and assessment. It seems that adopting such an approach may significantly limit the scope of assessment provided for in the Directive 2006/7/EC, whose implementation should guarantee control over every element of surface waters, where it is expected that a lot of people will bathe. The *BWD* did not provide for the creation of other forms than bathing waters.

However, as mentioned above, the 2010 Water Law (Journal of Laws of 2017, item 1566) allowed such a form of bathing recreation, with the restriction that it was a solution dedicated to organizers who were obliged to ensure safety of bathing in exceptional circumstances, such as competitions, scout camps or other types of camps, seasonal vacation centres or agritourism (Kaznowska and Wasilewicz, 2020). Such sites used for bathing constituted a separated and designated part of surface waters, which was not a bathing water, but a water area used for bathing (the 2010 Statute). The legislator imposed less strict requirements on organizers of sites used for bathing than on organizers of bathing sites (Kaznowska and Wasilewicz, 2020). The legislator also decreased the minimum number of water tests in one bathing season to two tests. The above July 2017 amendment to the Water Law (Journal of Laws of 2017, item 1566) reinstated the initial assumptions of the *BWD* from 2006, thus limiting the use of the “loophole”. The amendment made it possible to partially eliminate the lack of monitoring and reporting regarding water quality of other forms of recreation than bathing waters, and the impediment to or even potential lack of possibility to inform the public on bathing water quality in Poland.



## 5. Conclusion

The analysis included in this article allows us to conclude that the number of bathing waters will continue to grow in Poland. It seems to be the consequence of the 2017 legislative changes, including the time constraints imposed on the operation of sites occasionally used for bathing (up to 30 days in one season), which constitute a certain “substitute” for bathing waters. However, due to the COVID-19 pandemic and numerous consequential limitations (including the *de facto* freeze of water tourism), summer seasons after 2019 will not be profitable for tourism and bathing water organizers. If the provisions implementing Directive 2006/7/EC were to be unequivocally evaluated, the result would be negative. The primary reason lies in the decrease in the number of bathing waters (in Poland, there were 315 bathing waters organized and monitored in 2010 (EEA Poland, 2010), whereas there were only 205 in 2017, but there were also 835 “replacements” – sites used for bathing). It also resulted in the lack of monitoring and transparency over the assessment of water quality of sites used for bathing. As a consequence, it is impossible to quantify water quality on a 4-year basis for the majority of bathing sites in Poland, and thus the transparency of bathing water assessment is impaired.

With the research and the COVID-19 situation in mind, it may be compelling to determine the impact that the COVID-19 pandemic exerted on the number of bathing waters in Poland and other EU member states, which, in the opinion of the authors, requires further study.

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