CHANGES IN LEGAL REGULATIONS AS A WAY OF IMPROVING WATER MANAGEMENT IN POLAND

ZMENY V PRÁVNEJ ÚPRAVE AKO SPÔSOB ZLEPŠENIA VODNÉHO MANAŽMENTU V POĽSKU

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I. Introduction

There are very few places in the world where there are no problems with water. Most often we have three unfavorable and usually temporally and spatially variable situations: too little water, too much water and water resources unusable due to pollution. Of course, adapting water management to the needs of municipalities, industry and agriculture, especially in terms of climate change, is a long-term process that requires knowledge and education, investments, proper organization, financial resources and, above all, perfected legislative basis. Poland is one of the countries that urgently need to improve water management. Therefore, in 2017, the Polish Parliament passed a new law on water management, aimed, inter alia, adapting to European Union directives. New Water Act⁽¹⁾ introduced significant changes as compared to the previous ones⁽²⁾. The most important of them was the new system of water manage-

ment consisting in its centralization by establishing an administrative unit called the State Water Enterprise Polish Waters, responsible for all activities in the field of water management. Their competences include, among others, all matters related to finance, investment planning and implementation, maintenance of water facilities, issuing administrative decisions, including water permits. The Water Act entered into force on January 1, 2018 and has been so far amended several times. At the same time, in 2018 the Water Resources Department was transferred from the Ministry of Environment to the Ministry of Maritime Economy and Inland Navigation, and then in 2020 to the Ministry of Infrastructure. The common opinion was that these shifts had no substantive justification, but were of a personal and political nature. After more than three years of implementing the Water Act, questions arose about the purposefulness of the introduced legislative changes and their consequences. In view of the existing and forecasted hydrological extreme phenomena and the generally assessed condition of water management as bad, a multi-person group

⁽¹⁾ Water Act. 2017. Journal of Law (Dziennik Ustaw) No. 1566 Act 20 July 2017.

⁽²⁾ Pierzgalski (2018).

Abstract (EN)

The article presents 9 water alerts illustrating the state and problems of water management in Poland three years after the entry of the new Water Act into force on January 1, 2018. The alerts were developed by a group of experts critically assessing some of the introduced legislative changes. The alerts analyzed the main problems related to drought and flood protection as well as the specificity of water management in cities and rural areas. Postulates to improve the legal regulations in the field of water management and financing, its integration with spatial planning and educational needs in this regard were also presented. The content of 8 alerts is briefly discussed, and the problem of water-agriculture interaction is presented in more detail. The article indicates that legal regulations of water management are particularly difficult as they apply to the entire society, almost all economic sectors and the natural environment, and its preparation must be carried out with extreme care after many analyses and debates.

Keywords (EN)

water act, water management, Poland

Abstrakt (SK)

Príspevok sa zameriava na 9 varovaní o vode, ktoré ilustrujú stav a problémy vodného hospodárstva v Poľsku tri roky po nadobudnutí účinnosti nového vodného zákona z 1. januára 2018. Varovania vypracovala skupina odborníkov, ktorí kriticky hodnotili niektoré zo zavádzaných zmien. V rámci varovaní sa odborníci zameriavali na analýzu hlavných problémov týkajúcich sa sucha a ochrany pred povodňami, ako aj špecifickosti vodného hospodárstva v mestách a na vidieku. Prezentované boli aj požiadavky na zlepšenie právnych predpisov v oblasti vodného hospodárstva a financovania, integrácie s územným plánovaním a vzdelávacími potrebami. Príspevok obsahuje stručný obsah deviatich varovaní a podrobnejšie sa venuje problému interakcie vody a poľnohospodárstva. Výsledky analýzy naznačujú, že právne predpisy týkajúce sa vodného hospodárstva sú obzvlášť zložité, pretože sa uplatňujú na celú spoločnosť, na takmer všetky hospodárske odvetvia a prírodné prostredie, pričom ich príprava musí byť vykonaná s mimoriadnou opatrnosťou a na základe mnohých analýz a diskusií.

Kľúčové slová (SK)

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of experts⁽³⁾ developed documents in the form of nine water alerts, in which the existing state and the need to improve water management were assessed. All alerts are available on the website www.oees.pl/dobrzewiedziec. The title of each alert defines the issue. They were dedicated to following areas:

- Alert No.1 We are threatened by a great water crisis.
- Alert No.2 It is necessary to reduce floods and droughts.
- Alert No.3 Water in cities.
- Alert No.4 Water management in strategic documents promoting development.
- Alert No.5 Water and agriculture – a problem not only for farmers.
- Alert No.6 Water in spatial planning.
- Alert No.7 Education and training in the field of water management.
- Alert No.8 Integrated approach to water management.
- Alert No.9 Water management in Poland.

The most important problems presented in the above-mentioned alerts are below summarized briefly, whereas water-agriculture interaction issues (Alert No.5) are presented in more details.

II. The Problems Indicated in the Alerts

Alert No. 1. We are threatened by a great water crisis

The authors characterized the situation in Poland in terms of water resources, which are relatively small compared to other European countries. Their main feature is spatial and temporal variability. Annual rainfall amounts on average are about 620 mm, with the highest occurring in the mountains in southern Poland amounting to 800–1000 mm, and the lowest in the central part of the country varying between 400–500 mm. Catastrophic phenomena in the form of severe droughts, but also excess water, which result in floods in extreme situations, are becoming more and more frequent. The title of this alert is related to the modeling results of projected hydrological changes due to climate change. The results of this work indicate the possibility of the water conditions deteriorating mainly as a result of changes in the distribution of precipitation over time, an increase in air temperature and the water infrastructure inadequate to these changes. As a result of this process, problems with water supply to the population will increase, and the risk of floods, including flash floods in urbanized areas, will increase. It was emphasized that much more attention should be paid to increasing the possibility of water retention and its saving. The authors criticize the introduced legislative changes concerning water management. Alert No. 9 is devoted to this problem in more detail.

Alert No. 2. It is necessary to reduce floods and droughts

In Poland, as in many countries in Europe and the world, floods and droughts have occurred, are occurring and will continue to occur. These are natural and random phenomena, and their range, intensity and natural, economic and social effects are largely influenced by anthropogenic activities. The title of alert 2 indicates that despite significant progress in the protection against floods and droughts, the threat and the magnitude of the effects of these events do not decrease, but even increase. The air temperature rises, the distribution and intensity of rainfall changes. These are symptoms of climate change. The forecast scenarios of climate change indicate a further deepening of the currently observed trends. Droughts that used to occur in Poland every 5 years now occur every two years. The frequency of floods is changing in a similar way, including more and more often the so-called flash floods. The material effects of droughts and floods amount to approximately 0.4% of GDP each year, and even up to 1% of GDP every five years. The alert made a critical review of the methods and tools used to reduce the effects of drought and reduce the risk of flooding. Very high educational, investment and financial needs were indicated in order to improve the situation. It was found that the central management of water management introduced by the new Water Law also has disadvantages consisting in the lack of a cooperation network between central, regional and local entities. Some of the changes made by the Water Law did not work, and instead of improvements, they even caused deterioration. The need for legislative changes is evidenced by the adoption of several dozen changes in the provisions of the Water Act in the last three years. Moreover, the alert calls for the introduction of monitoring of the implementation of legal acts. It is also necessary to pass the EU Drought Directive, similar to the EU Floods Directive.

Alert No. 3. Water in cities

The water problems of cities include all generally known water problems, i.e. water shortage, surplus in the form of flooding and flooding, and water pollution. However, these problems in cities are different from those in non-urban areas. Their specificity lies in the necessary activities of large water supply and sewerage projects, spatial planning adapted to the needs of the population, management of rainwater flowing from large sealed areas. An important role in running good water management in cities is played by its financing, usually from the city budget, residents' fees and national and European Union aid programs. The alert indicated that the main actions in cities influencing water management are the reduction of green areas, including wooded areas, the development of buildings limiting the infiltration of water into groundwater, increasing water demand, and the use of drinking water for other purposes.

Many outdated storm water and combined sewage systems are leaky and fail-safe, and in many cases, with changed weather conditions, they are not able to drain water, e.g. from torrential rains. The regulations introduced in the new Water Act concerning fees for water services were critically assessed, and their implementation as excessively bureaucratic and imprecise, which leads to any interpretation. At the end of the alert, a number of postulates leading to the improvement of water management in cities were listed, including: development and

⁽³⁾ Co-authors of alerts: Kundzewicz, Z., Zaleski, J., Nachlik, E., Balcerowicz, M., Banasik, K., Błażejowski, R., Chudziński, P., Degórski, M., Dolny, J., Drzewiecki, S., Godyń, I., Hausner, J., Jania, J., Januchta-Szostak, A., Jokiel, P., Kochanek, K., Konieczny, R., Kozyra, J., Kutek, K., Licznar, P., Magnuszewski, A., Majewski, W., Nieznański, P., Okruszko, T., Ostrowski, K., Pierzgalski, E., Piniewski, M., Przybylak, R., Ramm, K., Romanowicz, R., Rosiek, K., Wałęga, A., Wawer, R., Wiatkowski, M., Ziętara, P.

implementation of an integrated water management strategy, integration of spatial planning with water management and integration of flood risk management with spatial planning and rainfall management.

Alert No. 4. Water management in strategic documents promoting development

Matters related to water management are taken up in various strategies, both governmental and in many development strategies of voivodships, cities and sectoral strategies. Water-only strategies developed in the past were basically forced by crisis situations. The matters related to the economy are taken up in various governmental strategies as well as in many voivodship and city development strategies and sectoral strategies. Water-only strategies developed in the past were basically forced by crisis situations. These include, for example, government programs: “Program for the Odra 2006”, adopted after a large flood in the Odra catchment in 1997, and implemented in the period 2001 – 2014, “Program for protection against flooding in the upper Vistula basin” approved after the flood in 2010 in The upper Vistula catchment area, implemented also in the same years, and also the National Program of Municipal Sewage Treatment, imposed by European Union directives, which has been implemented since 2005 until now. An autonomous water management development strategy has not been developed. The alert emphasizes the large dispersion of water issues in various development documents. An attempt to respond to the currently worsening situation are projects adopted by Polish Waters, such as the Drought Effects Counteracting Program. The alert stated that “at the level of strategic documents, the water management situation did not find and still does not find its proper place. The alert emphasizes the positive role in shaping sustainable water management played by European Union directives, in particular the Water Framework Directive, the Floods Directive, the Nitrates Directive and others, which force the creation of planning documents and their implementation. The summary highlights the urgent need to develop and adopt a National Water Management Strategy integrating all water management projects.

Alert No. 6. Water in spatial planning

Final conclusions of alert no. 3 “it is necessary to integrate spatial planning with water management, as well as the integration of flood risk management with spatial planning” were developed in alert no. 6. The analysis of documents determining the cooperation between the two institutions showed that the matter is complicated. It was found that “lack of vision and good legislation” hampers or even prevents good cooperation between water and spatial planning authorities. As an example, the control of floodplain management, which is dealt with by water management institutions in an authoritarian manner, without dialogue with municipalities establishing local law, and which cover the costs of their consequences. The alert indicates a few examples of problems requiring close cooperation. These include the issuing of building permits in areas at risk of flooding, projects aimed at increasing water retention, protection of green areas and biologically active surfaces, etc. The alert authors call for an urgent review and improvement of existing legal acts.

Alert No. 7. Education and training in the field of water management

The decade 2018–2028 under the name of “Water for sustainable development” was established by the United Nations in order to increase public awareness of the need for rational management of water resources. Lack of sufficient knowledge may affect ad hoc decisions, the effects of which in the long term may turn out to be negative. Research conducted in Poland in 2018 on environmental awareness, including water management, showed that it is relatively good for over 40% of Poles, but only 10% of respondents took action to reduce climate extremes, and participation in training on water management efficiency was indicated the least frequently. This indicates the need to fill the educational gaps in this regard, at all levels of education: from kindergarten through primary, secondary and higher education. Only good current knowledge can be the basis for actively supporting or criticizing planned water-related projects through various types of public consultations. The alert presents the following activities that are the basis for the preparation of individual social groups as partners for substantive participation in sustainable water management: access to information, access to guides and good practices, training and workshops, support for education of school children and youth, acquiring knowledge through action. A large part of the alert was devoted to education at the university level in the field of water issues, proposing, among other things, the creation of the field of study “Integrated water management”, which in addition to theoretical training should include laboratory classes, design and professional practices.

Alert No. 8. Integrated approach to water management

Integrated Water Resources Management doesn't contain a catalog of practical solutions to be used in all catchments of the world, but indicates the objectives of using integrated water management on a river basin scale, including both quantitative aspects of all waters (rainfall, surface and groundwater), as well as functional aspects, that is, “ensuring economic productivity, social justice and environmental sustainability”. Due to the fact that water is important for the supply of people, for each type of economic activity and the natural environment, the implementation of an ideal integrated management of water resources is very difficult, as it may cause conflicts, violating the interests of various social groups. The alert critically assessed the state of implementation of integrated water management in Poland, listing the administrative and industry sectoral character as factors largely responsible for such a state and significantly dispersed in water management. Water management in agricultural, forest and urban areas as well as water and water-sewage management in urban areas were analyzed. The specificity of problems in the above-mentioned areas and examples of conflicting goals of various institutions were presented. The problems of integrating the tasks of water management at the national and regional levels were also analyzed. A big problem at these levels is still the lack of an integrated approach to protection against floods and droughts and navigability on the main rivers in the country (Vistula and Odra) and their basins. The most urgent measures to improve the current situation include: development of standards for the assessment of the effects of implementation of measures

under plans and projects, implementation of multi-thematic research and studies on the catchment scale constituting the basis of masterplans, development of rules for the practical implementation of an integrated approach in water management in the form of guides and good practices, development of requirements and rules for respecting limitations resulting from flood risk, retention projects and others in local spatial development plans.

Alert No. 9. Water management in Poland

The alert describes the current institutional system of water management introduced in the Water Act of 2017. Its characteristic feature is strong centralization through the establishment of a new institution, the State Water Enterprise Polish Waters, responsible for all matters of water management and armed with strong administrative powers, i.e. public authority, but also having an ownership function for public waters. The authors of the alert stated that “The connection in the centralized organization of Polish Waters to the competences of the water user and the public authority issuing administrative decisions to other water users is a dubious solution in the context of impartiality and disinterestedness. The solutions to the water law currently in force in the matter of ensuring a two-instance appeal process against administrative decisions issued by Polish Waters, guaranteed by the Constitution of the Republic of Poland, raise serious doubts.” They also postulate that the current model of water management should be decentralized, including the transfer of some of its competences by Polish Waters to the local authorities, i.e. from the central level to lower management levels. It was also deemed necessary to introduce changes to the adopted system of financing water management, including the system of fees for water services, in particular.

III. Water and Agriculture – the Problem Not Only for Farmers

Sources of water

The surface water resources in Poland are small compared to other European countries. Average outflow per year per capita amounts to approx. 1600 m³ and is one of the lowest in Europe. Precipitation, which is the primary renewable source of water resources, is characterized by high spatial and temporal variability. It is the main cause of flood hazards and droughts. Most (about 70%) of abstracted surface and groundwater is used in agriculture worldwide. In Poland, the proportions of water used are different. About 70% is used by industry, 20% is municipal needs, and only 10% of the water taken is for filling fish ponds and a small amount for irrigation⁽⁴⁾. This means that currently crop production depends on precipitation. However, the progressive climate change and the related forecast increase in rainfall irregularities will translate into an increase in the frequency and intensity of threats related to excess and shortage of water. Modern agriculture is expected to intensify agricultural production and its stable level, for which optimal

moisture conditions are a prerequisite. In the near future, irrigation of crops will become more and more important and agriculture will become the main user of water. Then the key problem will be the availability of water sources of appropriate quality and, of course, its price. It should be emphasized that the consequences of agriculture's water problems concern not only this sector, but every citizen buying food. Improving the quantitative status of water resources requires projects to increase the retention capacity of the catchment area by slowing down the outflow of rainwater and meltwater, as well as storing water in periods of its excess and using it in periods of drought. Such activities include the construction of small water reservoirs, slowing down the outflow of water in natural watercourses, canals and ditches with the use of damming structures, regulating the outflow of water from drainage systems, the use of agrotechnical treatments increasing the infiltration capacity and retention properties of soils, retaining rainwater on the farm.

Water infrastructure

Water infrastructure drainage, drainage-irrigation and irrigation systems are the basic elements of infrastructure used to shape water resources and their use in agriculture and rural areas. They can perform productive functions (regulating water relations in the soil), they can be used to increase water resources (channel retention), as well as for protection against flooding, delaying the runoff of water masses to rivers. Their non-production function, including environmental protection and reduction of greenhouse gas emissions from the decomposition of dried soil humus, is becoming more and more important. The technical and functional condition of melioration devices is currently very bad, as most of them were made 50–70 years ago, and the organizational and financial system did not ensure proper maintenance and operation of the devices. Most of the drainage systems should be modernized in order to improve their functioning and adapt them to perform not only drainage and irrigation functions, but also other functions, including non-production ones. Reducing the risk of flooding and drought, protecting the environment, and reducing greenhouse gas emissions benefit society as a whole.

Financing

The current level of financing of water infrastructure does not ensure proper water management in agriculture, including the maintenance of water facilities in good condition. For the efficient and rational use of water infrastructure, a stable, multi-level financing system is needed, based both on private and public funds. The basic component of this system should be a water drainage fund, e.g. at the disposal of Polish Waters as a supervising and coordinating entity, supported with funds from European funds and a special-purpose subsidy from the state budget. In order to create systemic, rational conditions for financing and carrying out the reconstruction and development of the catchment retention potential, a statutory obligation should be introduced to develop a plan for the maintenance of drainage devices and to supervise its implementation. A number of other changes to the financing of agricultural water management should also be considered. For example, it would be advisable to introduce systemic compensation for

⁽⁴⁾ Bagiński, Balcerowicz, Pierzgański, Popek (2021).

farmers for activities that bring production losses, but are profitable for the state budget as a result of reducing flood losses. An example of such action may be the use of a regulated outflow from drainage devices in order to delay the inflow of water masses to rivers and reduce the volume of the flood wave. Also, increasing the organic carbon content of soils should be an important goal perceived by the authority, deserving financial incentives.

Legislative regulation

The existing legal regulations in the field of water resources management in agriculture and in rural areas do not fully meet the challenges resulting from the water management reform, as well as from the anticipated climate changes. There is still a lack of adequate regulations ensuring integrated water management in agriculture, including systemic, rational conditions for conducting such an economy. One of the significant changes concerning agriculture was the abolition of the division into basic and specific drainage facilities existing in the previous Water Act of 2001. Basic devices were financed from the state budget, and specific by land owners who “benefit from melioration devices”, with the support of public funds with their partial return in the form of the so-called drainage fee. The introduced change may have negative effects, because the drainage systems, in order to properly fulfill their functions, must have the possibility of draining or supplying water. For this purpose, in Poland, mainly watercourses and canals, which were previously classified as basic melioration, are used. According to the current Water Act, the regulations concerning the regulation and maintenance of rivers do not take into account their key role in the functioning of drainage systems. The specificity of the drainage and supply of water for agriculture is basically omitted. Knowing the difficulties solved by the 2018 reform of the Voivodship Melioration and Water Facilities Boards with obtaining funds for basic melioration devices and the maintenance of watercourses important for agriculture, it can be expected that the state of insufficient financing of these facilities will continue after the reform.

IV. Conclusions

The entry into force of the Water Act on January 1, 2018 brought all waters under one authority. At the same time, this regulation changed the management system of waters essential for agriculture. Institutions financing, supervising and administering drainage systems, small rivers and most of the flood

protection devices were liquidated. The Water Law Act 2018 introduced many systemic changes in water management in Poland, however, they do not fully ensure the operational use of state policy instruments in the field of water management for the needs of agriculture and rural areas, including in particular the construction and maintenance of drainage facilities. The necessary actions that should be taken to improve the current state of water management in rural areas, and legal provisions to facilitate and stimulate them, include:

- reconstruction and modernization of water infrastructure,
- development of irrigation systems with high water use efficiency,
- increasing the retention capacity in terms of the catchment area,
- care for soils and their retention properties,
- protection and revitalization of the spatial order that is friendly to water efficient management,
- modernization and adaptation of agricultural practices for farming in conditions of limited water resources,
- social education and consulting in the field of solidarity and efficient use of water resources.

The experience from improving the legislative regulations so far show that they undoubtedly lead to the improvement of water management in agriculture.

Observing the frequent new concepts of water management, emerging with new political authorities, the aspect of making the national economy independent from the impact of these current changes should be considered.

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