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The post-2015 development agenda

Poland stakeholder perspectives on a water goal and its implementation



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1 Comments on recommended Sustainable Development Goal and Targets for water

During a UN summit in September 2000, the world leaders of 189 States adopted the Millennium Declaration containing 8 Millennium Development Goals (MDGs).

The seventh Millennium Goal aims at ensuring environmental sustainability. It stipulates the necessity to implement a sustainable development policy leading to secure environmental stability worldwide. Another assumption of this Goal is to halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation, as well as to achieve, by 2020, a significant improvement in the lives of at least 100 million slum-dwellers.



The Millennium Goals have not been fully achieved but they clearly set in motion the process of combating poverty. In June 2012, during the Rio de Janeiro conference, the participants assessed the degree of realisation of the Goals and introduced new Sustainable Development Goals (SDGs), to follow up on the Millennium Development Goals.

In November 2012, UN-Water agency considered it necessary to elaborate a new, more comprehensive procedure towards achieving sustainable development after 2015, aiming at fulfilling the needs of over one hundred nations, identified in national consultations. The new concept is to be based on specific priorities agreed upon during eleven international thematic consultations devoted to global problems of education, ecosystems' sustainability, conflicts, energy, food provision, governance, employment, health, social inequalities, increase of the population and water.

Polish consultations led under the UN patronage by Global Water Partnership Poland and the Polish Ecological Club (Polski Klub Ekologiczny) were based on a document elaborated by UN Water – “A Post-2015 Global Goal for Water: Synthesis of Key Findings and Recommendations from UN-Water”. The objective of the consultations (held on March 20th and April 11th) was to confront Polish sustainable development realities and assess their further realisation after 2015. Consultations were carried out in the scope of the following, interlinked issues: 1. Water resources; 2. Water resources management; 3. Water, Sanitation & Hygiene (WASH) 4. Waste water, pollution & water quality; 5. Natural disasters and water-related catastrophes. As a result of the consultations, it was agreed that the global (holistic) approach to the water circulation in the environment and the need to protect it constitute the basic solution for many problems related to food provision, health, energy, education, as well as combating social inequalities and all kind of discrimination.

1.1 Water resources

The target is to improve the state of waters and to ensure sustainable use of water resources in every country. All decisions and activities should take into consideration both the human needs and the environmental protection requirements. Water abstraction should be carried out in a sustainable way, enabling regeneration of resources. In order to guarantee various water abstraction

related services, it is always necessary to aim at preservation and possible restitution of ecosystems. It is essential to improve the effectiveness of exploitation of the available water resources.

Poland is a country whose “hydrographic boundaries” practically cover the catchment basins of two large European rivers: the Oder and the Vistula. The country’s own surface water resources amount to ca. 53.9 km³ per annum (average values for the years 1946-2011). Moreover, Poland disposes of resources flowing from outside of its boundaries amounting to 7.72 km³, and ca. 2.80 km³ of water outflows to the neighbouring countries. These resources are quite limited in comparison with other European countries and amount to 1,840 m³ yearly per inhabitant (22nd place in Europe). On the other hand, the available resources of surface waters constitute a total of 40% of the average, what is an equivalent of 24.4 bln m³ of water according to the Institute of Meteorology and Water Management (Instytut Meteorologii i Gospodarki Wodnej – Państwowy Instytut Badawczy). The available resources of flowing waters of the country (with a 95% guarantee) amount on average to 10 bln m³. Groundwater resources are estimated at nearly 14 bln m³/year out of which ca. 20% is used.

Nationwide, the demand for drinking quality water reaches ca. 1.8 bln m³ yearly, 70% out of which is covered by the groundwater resources. The total water abstraction for the purposes of public utilities (ca. 20%), agriculture and forestry (10%), industry and power generation (70%) amounts to an average of ca. 11 bln m³; in the last decade, it has fluctuated from 10.9 to 12.1 bln m³/year [Water-Related Threats Assessment Committee (Komitet Badań nad Zagrożeniami Związanymi z Wodą) “Raport Komitetu nad Zagrożeniami Związanymi z Wodą”, NAUKA, PAN, 2013, (chapter 2, page 8)].

The above data indicate that the total available water resources in Poland are close to the current total demand for water. However, while reflecting on the sufficiency of the country’s water resources, we cannot limit ourselves to the average values. An important characteristics, often decisive for the available water resources volume in Poland, is their high variability in time, as well as in space. Water resources of the Polish rivers change irregularly on every time scale – seasonally, half-yearly, yearly, within a decade (10 years) period, etc. At the same time, the natural surface retention in lakes, swampy areas and peatlands is relatively small, and artificial retention reservoirs have a retention capacity of only 6.5% of the yearly water outflow. The total reservoir storage is too small to significantly mitigate the effects of temporary water shortages and excesses – droughts and floods. Periodical water deficits are particularly frequent during hydrological droughts manifesting themselves by decrease of precipitations, reduction of the water flow in rivers, i.e. low waters, and lowering of the groundwater table.

The discussion underlined the necessity to save water and constantly strive to limit its abstraction. As for the public utilities purposes, it can be achieved mainly by limiting losses in the municipal water distribution network, installation of water meters and increase of water prices for households, which would encourage the users to economise on it. The basic method of saving water in industry is the use of water-saving technologies in all water using processes and closing water circuits, which is of particular importance in case of cooling water circuits in large thermal power stations. Small retention also contributes to solving the water deficit problem. Losses in agriculture, supplied in our country mainly with water originating directly from precipitation, are relatively small; however, they can increase in the future should the necessity to construct artificial fields irrigation systems arise as a result of the climate change.

1.2 Management

The basic target is to reinforce the fair, participational, responsible and integrated method of water resources management. In order to strengthen the system, it is necessary:

- a) to implement an integrated approach towards the water management at the local, the river basin and the national level, taking into consideration a wider participation (of stakeholders) in the decision-making process;
- b) to ensure that the water supply, the access to sanitation and waste water treatment services are realised in an available, responsible, as well as ecologically and financially sustainable way;
- c) to implement appropriate legal regulations concerning water resources, infrastructure and services management, and to increase the effectiveness of the public authorities and their water operators activity;
- d) to improve information communication effectiveness, as well as support knowledge and skills development.

All the tasks related to the inland waters management in Poland are coordinated and controlled by a minister competent for the water management and realised in cooperation with the government and self-government institutions, appointed for the water resources management. Among such institutions are the President of the National Water Management Board (Krajowy Zarząd Gospodarki Wodnej) and seven Regional Water Management Boards (Regionalne Zarządy Gospodarki Wodnej), as well as opinion-issuing and advisory bodies: the National Council of Water Management (Krajowa Rada Gospodarki Wodnej) and water management councils in water regions. The Regional Water Management Boards are responsible for the water resources management; however, they do not dispose of the necessary instruments, in particular the powers to grant water use licences. Moreover, according to the Water Act in force, the institutions competent for the water management are voivodes and representatives of the self-government units (marshal, starost, voiv, mayor, city president). An important role is played by the Voivodeship Drainage, Irrigation and Water Facilities Boards (Wojewódzkie Zarządy Melioracji i Urządzeń Wodnych), reporting to the voivodeship self-governments. The Regional Water Management Boards act in areas identified based on hydrographic considerations. The Voivodeship Drainage, Irrigation and Water Facilities Boards act within the administrative boundaries of voivodeships, which are not related to hydrography.

However, the defective organisational structure is not the water management's weakest point. The basic problem lies in improperly formulated tasks and incorrectly realised administration functions. The defective activities result from the aforementioned unsuitable legal provisions and lack of "political will" of the decision-makers to implement modern water policy principles in our country. The procedures that currently have the most negative impact on the water management results are: incorrect planning, problems with financing and insufficient control of the water users.

Good planning is the basis for efficient and effective actions. The plans should cover all the activities improving water and valley systems. They should also take into consideration all economically justified needs of the users that are consistent with strategic goals. The basic guidelines for spatial planning should be the catchment basin water capacity and threats posed by the water resources.

In order for the water management plans to be realistic, the Water Framework Directive contains a provision on the principle of water services reimbursement. This mechanism guarantees that water management bodies have available funds for all tasks stipulated in the plans. Poland still does not have an efficient system for water management financing, even though it was supposed to be implemented by 2010. Due to this, the water management bodies cannot realise their tasks for lack of funding. Funds for water resources management originate from the State budget but are scattered among different sectors (e.g. maritime economy, water management, agriculture, transport, environment). The financing of water management exploitation and investments is

divided between two groups of the aforementioned institutions: the Regional Water Management Boards and the Voivodeship Drainage, Irrigation and Water Facilities Boards.

The water management sector is chronically under-financed. In the years 1995-2008, 0.17-0.37% of the GDP was allocated for investments in water management. The investment outlays for water management since 2000 have amounted only to 1.06-1.66% of the total investment outlays in the national economy. Estimates show that the State budget covers only 20% of the current water management tasks financing reported by the Regional Water Management Boards. Besides, still remains the issue of verification and revaluation of those needs. The constant under-financing of water management results in a steady increase of safety risks in the facilities. If the conservation and renovation works continue to be withheld, numerous water facilities and installations will gradually lose their functionality, which will eventually lead to their depreciation, and they will stop serving any purpose whatsoever.

An important issue for reducing the anthropopressure on the water resources is also the efficient supervision of water users. According to the Water Act in force, this is done by the starosts and marshals (state administration units), who are not active enough in this field.

We need far-reaching modifications of the water policy, forcing changes in the water management organisational units. In order to introduce such changes, it is necessary to implement legal regulations derived from the full transposition of EU law. Until now, such changes have not been fully implemented in Poland.



The main problem of water management system in Poland is the lack of coordination and cooperation between administrative units, compliant with the Water Framework Directive, as well as economic, financial and legal implementation instruments. This makes it very difficult to correctly implement the EU directives, as well as hinders sustainable management. In order to create a modern system, we need improvements in this respect; we should use contemporary scientific achievements, have suitable legal mechanisms and proven economic instruments, based on public participation.

During the discussions organised within the public consultations devoted to the new Sustainable Development Goals After 2015, the following issues concerning water management were raised:

- we should guarantee the conditions for an effective management by establishing competent institutions that would manage the issue and solve the problems, appropriately funded and having adequate instruments as well as enjoying social trust – amendment of the Water Act;
- we should create an Integrated Water Resources Management System – starting by simplifying the current structure, reconstructing the institutional system, defining competences and detailed tasks, and, subsequently, ensuring appropriate financing. This system should function within an organisation adapted to the hierarchic structure of the river network;
- the management should take place in areas defined based on hydrographic and organisational factors;

- the Polish water management system requires improvement of the basic legal document – the Water Act;
- lack of strategic documents defining the water management targets;
- water management problems, e.g. current infrastructure, investments in key areas, being under-financed;
- two unsynchronised state institutions: the Regional Water Management Boards (Ministry of Environment), and the Voivodeship Drainage, Irrigation and Water Facilities Boards (Ministry of Agriculture and local self-governments).

Activities proposed to streamline the water management system in Poland:

- the minister for water management should be the author of organisational and legal conditions (policy) for water management structures and the controller of water services' compliance with the legal and State policy requirements (concentration of competences);
- three-tier subjective water management structure: at the national level (the National Water Management Board with the Oder and the Vistula catchment basins treated separately – policy implementation), at the regional catchment basin level
- (the Regional Water Management Boards) and at the partial catchment basin level (the Catchment Basin Boards);
- new role of the boards appointed at the regional level and of the catchment basin (with active participation of self governments), vested with appropriate competences;
- sufficient personnel resources and secured financing;
- modification of the financing system;
- separation of planning and water resources management from maintenance of waters and administration of the Treasury property in water management.

1.3 Water, Sanitation & Hygiene (WASH)

Globally, the purpose of WASH is to eliminate open defecation and ensure general access to drinking water, basic sanitation and hygiene facilities for households, schools and health centres by the end of 2030. Realising the seventh Millennium

Goal, Poland's focus was on: "Access to safe drinking water and basic sanitation for households". The research carried out by the Central Statistical Office (Główny Urząd Statystyczny, 2012) showed estimates according to which the percent of urban population using waterworks increased from 91.7% in 2000 to 95.4% in 2012. Rural population using water supply services of the collective waterworks increased from 60% in 2000 to 82% in 2012.

A much more important challenge is the problem of sanitation and waste water treatment in Poland. Despite a significant progress in the construction of the sewage systems equipped with central waste water treatment plants (an obligation imposed by the Accession Treaty), a huge part of the population in rural agglomerations below 2,000 [population equivalents], not covered by the National Programme for Municipal Waste Water Treatment (Krajowy Program Oczyszczania Ścieków Komunalnych), remains outside the waste water treatment plants construction programmes, which could be financed with the EU funds by 2015. In 2009, urban population with access to sewage systems amounted to 88.1% of the entire urban population, but the rural population using sewage systems amounted only to 26.9% [Chief Inspectorate of Environmental Protection (Główny Inspektorat

Ochrony Środowiska) "Stan środowiska w Polsce - Sygnały 2011", (p. 47)]. Disproportions between cities and villages are caused by a high dispersion of buildings in rural areas and by the fact that, according to the provisions of the National Programme for Municipal Waste Water Treatment, the

priority until now was given to implementation of sanitation solutions (sewage and industrial waste disposal) in agglomerations above 2,000 p.e. For this reason, in smaller agglomerations it is necessary to implement individual systems of waste water discharge and treatment, such as hydrophyte, biological and active sediment treatment plants.

Nationwide activities and binding legal regulations focus on reducing water pollution with chemical compounds (mainly nitrogen and phosphor) originating from agricultural activity and municipal waste water. Referring to the required actions at the municipal level, an important task is to organise waste water management within each farm. Effective and skilful waste water management brings profits – a clean environment and improvement of the water quality in wells and in the neighbouring rivers and lakes – thus a noticeable ecological effect is achieved. In the longer term there is also an economic effect due to the possible recovery of biogenic substances contained in waste waters.

Ensuring social health is to a large extent dependent upon the level of the society's hygiene. Washing hands and personal hygiene should be promoted in health centres, kindergartens, schools and other public institutions. Survey results indicate that in Poland only 4 out of 10 people deem it necessary to wash hands after going to the toilet.

According to the epidemiological data of the State Sanitary Inspection (Państwowa Inspekcja Sanitarna), a total of 6,996 intestinal bacterial infections, 8,444 cases of salmonellosis and 10,053 of food poisonings were registered in 2012.

Poland has also an attestation system aiming at preventing introduction of materials and products dangerous for the health and life of inhabitants to public use or limiting their permitted scope and method of use in order to eliminate health threats. The suitable document – hygienic approval (or hygienic assessment) – is issued by the National Institute of Hygiene (Państwowy Zakład Higieny) for, among others:

- materials, coatings, products and equipment serving for treatment, storage and transport of drinking, usable, heating, flow-through and technological water, anti-corrosion coatings and preparations,
- water treatment and disinfection preparations,
- filters and other waterworks purifying equipment,
- new water treatment equipment and technologies,
- swimming pool water treatment and disinfection.

During the social consultations dedicated to the new Sustainable Development Goals After 2015, the following issues were raised:

- waste water treatment in rural areas is a difficult problems requiring particularly urgent solutions;
- the “tender trap” consisting in tenders promoting the cheapest solutions which do not ensure the expected waste water treatment effect;
- the need to educate children, residents, civil servants and agricultural consultancy centres;
- problems of hygiene assessments (attestations) which do not guarantee efficient waste water treatment;
- currently, in the public administration, the tasks of environment protection, water management, waste water and waste treatment are realised within 1/4 of a full time equivalent civil servant position; □ underestimated ecology-related problems and lack of ecological awareness; □ under-financed monitoring system.

1.4 Waste water, pollutions, water quality

The proposed target reflects the constantly raising and urgent need for efficient waste water management and water pollution prevention. In order to achieve this target it is particularly important to:

- reduce the volume of untreated domestic and industrial waste water (including waste water originating from agriculture);
- increase the volume of waste water suitable for safe reuse;
- reduce the pollution with biogenic substances.

The principles of waste water management in Poland are based on the requirements of the Water Framework Directive (2000/60/EC), the Urban Waste Water Directive (91/271/EEC) and the Nitrates Directive (91/676/EEC). The Accession Treaty stipulates that the EU legal regulations will become fully binding for Poland on 31/12/2015. The main assumption of the Water Framework Directive is to achieve good water status by 2015. However, this target will not be fully achieved in the majority of EU Member States.

Evaluation of the chemical status of waters in rivers and dammed reservoirs carried out based on the monitoring of water bodies led to a classification of 589 river water bodies, 377 out of which were classified as having good status and 212 – with their status below good. The most often exceeded values were the maximum concentration of mercury, the average concentration of benzo(g,h,i)perylene and indeno(1,2,3-cd)pyrene, the average concentration of cadmium and the average concentration of mercury.

Waters having good ecological status constitute 24% of the total amount of water bodies – the remaining have poor status. The Polish National Programme of Municipal Waste Water Treatment was elaborated and then several times updated (Updates of the National Programme of Municipal Waste Water Treatment) as part of the Urban Waste Water Directive implementation. Among the goals of this programme are:

- achieving standards of discharged waste water;
- within a given time, equipping agglomerations of over 2,000 p.e. in sewage systems for municipal waste waters and introduction of proper waste water treatment;
- ensuring at least 75% reduction of the total load of nitrogen and phosphor in the municipal waste water;
- 100% reduction of biodegradable pollutions by the end of 2015;
- proper treatment of waste water from agglomerations below 2,000 p.e., discharged to estuaries and from agglomerations below 10,000 p.e. – discharged to coastal waters;
- equipment of the agricultural and food industry plants above 4,000 p.e. with waste water treatment plants.

According to the working project of the 4th Update of the National Programme for Municipal Waste Water Treatment of 2013, the outlays for realisation of the activities and investments planned by agglomerations are estimated at nearly PLN 29.36 bln, taking into account the sewage system adjustment, including:

- a) for sewage networks - PLN 18.75 bln, PLN
- b) for waste water treatment plants - PLN 9.44 bln, PLN
- c) for sediments utilisation - PLN 1.17 bln. PLN

Agglomerations did not plan outlays for:

- a) verification of the agglomeration boundaries;

- b) compliance with Article 5.2 of the Directive 91/271/EEC, reading as follows: “Member States shall ensure that urban waste water entering collecting systems shall before discharge into sensitive areas be subject to more stringent treatment than that described in Article 4, for all discharges from agglomerations of more than 10,000 p.e.”;
- c) additional investments to adapt the waste water treatment plants capacity to the actual population equivalent of the agglomeration, calculated uniformly for all agglomerations, according to the European Commission recommendations.

The main reasons for non-compliance of 1,647 agglomerations with the Urban Waste Water Directive are:

- a) incorrectly designed capacity of waste water treatment plants,
- b) incorrectly planned sewage networks, which results from incorrect determination of the agglomeration boundaries; 91% of agglomeration areas are identified incorrectly,
- c) necessity of additional investments in order to adapt the existing system to Article 5.2 in 224 agglomerations, d) planned end of investments after 2015.

The projected amount of agglomeration pollution reduction stipulated in the 4th Update of the National Programme for Municipal Waste Water Treatment will be as follows:

- a) BOD5: 89.7%
- b) nitrogen: 76.9%
- c) phosphor: 85.2%

This means that the requirements resulting from the Water Act will be satisfied, but the material scope required by the 91/271/EEC Directive will not be fulfilled.

One of the Nitrates Directive goals was to indicate areas particularly exposed to contamination by nitrogen originating from agriculture. Since 2012, 48 particularly exposed areas (PEA) have been identified, constituting 4.46% of the country's surface. According to the European Commission, the number of PEAs is insufficient – when determining sensitive waters and indicating PEAs of agricultural origin Poland did not take into consideration the eutrophication of natural freshwater lakes and other water reservoirs.

Based on Member States' reports for 2008-2011, the pollution with nitrogen compounds amounted to:

- a) for ground water resources:
 - 13% >25 mg N/l,
 - 5% >50 mg N/l,
- b) for surface waters:
 - 4.5% >25 mg N/l,
 - 0.9% >50 mg N/l,
- c) rivers eutrophication – 43%,
- d) lakes eutrophication – 86%.

In 2012, the outflow of organic and biogenic substances to the Baltic Sea amounted to:

- a) a) BOD5: 109.8 k Mg/year;
- b) nitrogen: 103.4 k Mg/year;
- c) phosphor: 6.7 k Mg/year.

To sum it up, despite a significant improvement of the water quality, recorded in the last years and resulting from limited production in many industries, technology modernisation and construction of industrial and municipal waste water treatment plants, the quality of the flowing surface waters and

lakes is insufficient. The achievement and maintenance of satisfactory water status requires the adoption and implementation of a series of activities in the area of industry, agriculture, public utilities, spatial development, water relations and water environment protection, as well as organisational, legal and educational initiatives. To ensure water protection against pollution by the end of 2015, Poland should guarantee a 75% reduction of the total load of nitrogen and phosphorus in municipal waste waters, continuing the process of modernisation, development and construction of new waste water treatment plants as part of the National Programme for Municipal Waste Water Treatment. As for counteracting the eutrophication of the Baltic Sea, the modification of the Baltic Sea Action Plan and activities carried out as part of the first priority area of the EU Strategy for the Baltic Sea Region will be of key importance. Among undertaken steps one should mention further activities aiming at protecting waters against pollution with nitrates originating from agriculture according to the Council Directive 91/676/EEC of 12 December 1991 concerning the protection of waters against pollution caused by nitrates from agricultural sources. The overriding goal of the ecological policy of Poland for water resources protection is to maintain or achieve good status of all waters, including preservation and restoration of ecological continuity of watercourses. This goal will be achieved through a water management plan for each catchment basin area marked out in Poland and by realising the national water and environment programme for inland waters quality improvement. This, in turn, will positively influence the Baltic Sea ecosystem, i.e. the recipient of pollution flowing down the rivers and directly from the inland [Chief Inspectorate of Environmental Protection, "Stan środowiska w Polsce", Sygnaty, 2011].

During the social consultations dedicated to the new Sustainable Development Goals After 2015, the following issues were raised:

- under-financed and incoherent (surface vs. ground water) monitoring system;
- limited number of measurement points, results often based on extrapolation and not on actual measurements;
- financial cutbacks in monitoring of the Voivodeship Inspectorates of Environmental Protection with simultaneous introduction of a new obligation to monitor priority substances;
- problems related to the assessment of ecological status of waters due to the high costs of measurements;
- problems concerning hydro-morphological assessment;
- the good status of waters is undermined by biological aspects – the chemical status of waters is usually good;
- too limited number of PEAs, economic barriers in identifying a higher number of PEAs;
- in comparison with the EU, we have the most rigorous standards concerning the discharge of nitrogen but, in comparison with other countries located in the Baltic Sea basin, we produce the lowest amount of nitrogen per person;
- the problem is that the entire country is located in the Baltic Sea basin and our total discharge of biogenic compounds is still too high.

1.5 Natural disasters and water-related catastrophes

This target consists in reducing the number of fatal accidents, health and economic damages related to water catastrophes such as floods, droughts and hydro-technical facilities breakdowns. The realisation of this target is to be supported by:

- broadening knowledge on disasters, such as floods, droughts, hurricanes, especially those provoked by climate change;
- elaboration of an integrated catastrophes risk management system, including appropriate selection of structural and nonstructural solutions in order to reduce the number of casualties and economic losses;

- adoption and implementation of a monitoring system and of an early warning system for natural catastrophes.

In Poland, there are different types of flood threats: torrential, storm, meltwater and ice jam floods. The flood damage demonstrates high diversity in different years. Due to the limited artificial storage capacity, the basic flood protection system in lowlands consists of embankments and river regulation.

Poland is bound by the Floods Directive (2007/60/EC), the main goal of which is to reduce flood risk and mitigate the consequences of floods in EU Member States. Poland is currently elaborating flood risk management plans in catchment basins.

The Directive recommends a complex approach, which shall include:

- actions to reduce high water stage (threat), i.e. “put the flood tide away from people”;
- activities to mitigate the losses through rational spatial development;
- activities to implement appropriate behaviours and teach how to live in conditions of threat exposure (education, construction standards, operational plans).

The Floods Directive recommends solutions leading to increase of the retention in the catchment basins in order to safely reduce high flood flows. For large lowland rivers it consists in restoring natural inundation areas (moving or dismantling embankments) or constructing inundation or flow-through polders.

Poland is a country suffering from droughts in the vegetation season, which has a negative impact on water management, especially in agriculture. Regions most exposed to water shortages are the Polish Lowland, Wielkopolska in particular. Small amount of available surface waters makes it impossible to cover the water shortages. The drought phenomenon is provoked by climatic factors but it is also results from human activity. Among the activities which decrease the retention capacity of agricultural catchments and intensify soil erosion are, among others, incorrect river regulation, drainage of river valleys, deforestation, drainage of midfield water bodies and of small watercourse valleys in high plains.



The methods for counteracting droughts' consequences are described in the Water Act. According to the Act, the protection against droughts lays within the competences of the government and self-government bodies. Drought protection is carried out in compliance with the drought effects prevention plans in catchment basins and drought effects prevention plans in water regions. The drought preparedness plans include also a catalogue of actions aiming at mitigation of the drought impacts. The problems connected with the issue of catastrophes caused by water facilities breakdowns in Poland lay within the remit of the Dam Technical Control Centre (Ośrodek Technicznej Kontroli Zapór) charged with:

- Organisation and operations of services monitoring the state of water facilities (dams, flood embankments, etc.)

- Technical state of facilities, scope and course of the conservation, renovation and modernisation works, and - Designing rules for water facilities, selection of hydrological characteristics, etc.

During the social consultations dedicated to the new Sustainable Development Goals After 2015, the following issues were raised: Concerning floods:

- a need for cooperation between engineers and environmentalists and nature protection activists while agreeing on flood protection solutions;
- limiting construction in risk areas, which unfortunately is often continued;
- controversial method of marking potential flood areas;
- flood threat arises in catchment basins, in the hydrographic system, but the spatial planning is carried out as part of the administration system;
- lack of environmental impact assessments for undertakings related to flood protection;
- necessity to change the definition of flood, limiting the possibility to obtain compensation – “water temporarily covering an area, excluding water covering an area for reasons of high water stage in sewage systems”;
- considering flood threat in spatial development will be based on flood threat and risk maps; the planning documents should be updated within 18 months from presentation of the threatened areas’ boundaries; however spatial planning specialists consider this time limit as unenforceable – currently, works are being carried out on extending this deadline to 30 months;
- scope of the flood threat maps (large river valleys), but what of the areas threatened by overflows from smaller rivers and the areas threatened by flooding?
- education – information on threats, behaviour during a threat occurrence, urbanisation standards;
- conflict between environmental protection and safeguarding the population against flood consequences;
- problem of shifting responsibility for floods towards the State, unreasonable development of inundation areas;
- problem of construction in areas of underground waters protection;
- in some cases, lack of economic justification of the purposefulness of undertaken flood protection activities; small capacity of reservoir retention;
- the implementation plans of the Floods Directive cover large rivers – omission of small rivers constitutes a significant problem during the elaboration of local plans;
- flood threat maps cover large rivers, there are no maps for small rivers and areas threatened by flooding; need for drainage and irrigation strategies;
- small retention as a solution for small watercourses.

Concerning droughts:

- identification of the threat – space and time scale, losses – agricultural, public utilities, navigation, natural sector;
- the basis for the drought protection strategy should be the drought effects prevention plans in the catchment basin areas (the National Water Management Board) in consultation with the Minister of Environment and the Minister of Agriculture, as well as the drought effects prevention plans in water regions (the Regional Water Management Boards), including:
 - 1) analysis of the possibility to increase the available water resources;
 - 2) proposition of construction, development or reconstruction of water facilities;
 - 3) propositions of necessary changes in the scope of water resources use and changes in the natural and artificial retention;
 - 4) propositions of drought risk management system including an early warning system.

2 Key implications and means of implementation identified for achieving the Goal and Targets over the period 2015-30

In order to improve the state of water management and water resources, in 2010 the Ministry of Environment together with the National Water Management Board elaborated a Draft State Water Policy by 2030 (taking into consideration the 2016) - SWP 2030. This draft policy takes into account the SDGs but has not yet been approved.

The overriding goal of the SWP 2030 is to ensure general access to clean and healthy water, significantly limit threats caused by floods and droughts while maintaining good status of waters and their ecosystems, as well as to satisfy the water needs of the national economy, to improve territorial cohesion and to attempt to level interregional disproportions.

The goal is to be achieved through defined strategic and operational targets. The changes are based on reforms of legal, financing, monitoring and information systems. Moreover, it is necessary to ensure the appropriate level of cooperation or coordination of activities between autonomous entities in the area of the broadly understood water management.

2.1 Legal instruments:

Currently, work is being carried out on the amendment of the Water Act, taking the proposed changes in the water management into consideration. The reform of the water resources management system demands full harmonisation of the Polish legislation with the EU water policy requirements. Legal regulations must take into account the principle of water management in the catchment basins system, and at the same time integrate the water-related sector, self-government and regional activities undertaken by public authorities (government and self-government bodies) in the country's administrative system. It is necessary to properly realise the commitments of international conventions and agreements on water management, in particular the Helsinki Convention, as well as in agreements signed with the neighbouring countries concerning cooperation on trans-boundary waters. The law must ensure that the water policy principles and related EU legal acts reach all sectors of the Polish economy, just as other EU policies directly concerning these sectors (e.g. energy policy or common agricultural policy). It implies the necessity to develop inter-ministerial cooperation procedures. It is essential to create law that is enforceable, provides control and execution instruments and is unambiguous; it is particularly important with regard to implementation of the EU regulations into the Polish legislation, where a high degree of diligence is required in matters concerning terminology and precise representation of the purpose of proposed regulations.

2.2 Economic instruments:

One of the basic management instruments in the water management – next to legal and administrative instruments – are economic instruments. It is necessary to elaborate a coherent and complementary set of instruments, where economic and financial mechanisms will support the effectiveness of legal tools and contribute to improve the effectiveness of the water policy targets achievement, among others by influencing water users' behaviours. Creating new economic instruments in the water management administration, besides the already applied water use fees, the "polluter pays" and the "user pays" principles, must fully take into account the principle of water services costs reimbursement. The design and implementation of this system shall strive to internalise the external costs generated by water users, i.e. create mechanisms (instruments) that will assign external costs to persons responsible for their generation. The effective realisation of this

postulate means creating legal mechanisms and procedures, as well as methodological standards allowing systemic analysis of environmental and resource costs and analysis of the water services provision costs, taking into consideration the necessary investment outlays and exploitation costs. The system of economic instruments will be constantly evaluated in terms of its economic effectiveness, social justice (distribution of costs and benefits), ecological effectiveness, as well as organisational and legal possibilities to implement different instruments. The role of this system is to stimulate and redistribute, inform and impose taxes, providing constant encouragement to reduce the level of emitted pollutions and shaping correct behaviours of water users. It will cover the most significant types of water resources' use. The economic instruments in the water management administration will include fees/taxes for use of waters, insurance mechanisms, financial incentives, financial sanctions and other solutions. The purposefulness and possibility to use instruments based on market transactions will also be considered. The current system of environmental fees for the use of waters will be analysed in terms of its effectiveness and efficiency, and then will be adjusted accordingly. While taking into consideration the social consequences of such instrument, the verification will be based on the efforts to achieve a more efficient reduction of the pressure on the water environment, mainly through the correction of cost accounting in all types of the water use (water abstraction, pollution emission, but also the use of water for agricultural, power generation or navigation purposes), as well as through evaluation of the hitherto level of water use fees and the system of exemptions. Incentives supporting pro-ecological actions will consist in financial support for investment and non-investment activities, allowing sustainable management of waters (improvement of the waters and water-dependent ecosystems status, protection of people and property against extreme phenomena and implementation of modern water resources management). Financial sanctions will constitute an element of the economic system which will help eliminating some behaviours consisting in non-respect of the environmental standards and breaching administrative decisions. The system of penalties should be effective, therefore the sanctions should be inevitable and adequate.

An additional element to ensure rational and sustainable water management in all these planned activities, in particular the investments, will be the generalised use of economic analyses (including also social consequences of such activities).

One of the main goals for introducing new administration principles in water management is aiming at internalisation of environmental costs and increase of water management self-financing. Therefore, water users should participate to a constantly increasing degree in financing of the investment and exploitation costs of water management, proportionally to the derived benefits. The efforts to achieve a higher level of water management self-financing will take place in stages, gradually lowering the state budget contribution to the water management financing.

2.3 Monitoring and information systems:

The creation of the water resources monitoring system must be reinforced in the context of the EU directives. In terms of organisational and legal problems the most important ones are issues related to the incoherence of the reference layers, the necessity to verify boundaries of the surface and underground water bodies, the typology of waters, ensuring proper water management financing and constant improvement of the personnel's competences.

Irrespective of the constant improvement of the monitoring systems, a properly designed and exploited water management information system is also necessary. Such a system should ensure the harmonised collection and analysis of data and uniform reporting. An important element thereof should be recognised information tools allowing water resource management, forecasts of their status, evaluation of the corrective actions' effectiveness and updates on water management plans.

2.4 Social participation:

The new water policy is based on an alignment of the economic development and environmental requirements. It also results from the belief that one of the most important life quality indicators is the quality of the surrounding environment. However, although the Polish society understands the necessity to improve the state of the environment, we should take into consideration that the new water policy and reform of the water management system, in the initial phase of their implementation, may be difficult to understand by the general public and may even meet with resistance from some social groups. The general problem results from the high expectations of the Polish society towards Poland's membership in the EU: people expect that dozens of years of economic underdevelopment will be quickly compensated and that they will achieve the living standard of the "old" EU countries. At the same time there is a low social acceptance for reducing environmental losses related to realisation of infrastructural investments. The consequence of these opposing attitudes are strong conflicts and delays in investments realisation. The effective solution of the aforementioned problems will be of key importance to the successful achievement of the SWP targets [SWP 2030].



Taking into consideration the investment directions in water management, in compliance with the "State Ecological Policy", it is estimated that the outlays required for fulfilling SWP targets in 2011-2016 will amount to ca. PLN 62 bln. Yearly (till 2016), an average of PLN 10.3 bln will be spent. The yearly average funds involved in implementation of the water management reform will amount to ca. 0.22% of outlays for water management.

3 Concluding comments specific to the country

Currently, Poland is in a difficult situation. We are now at the beginning of a period when the implementation of the requirements agreed upon with the European Union will be verified. Due to inconsistencies between the Polish and the EU regulations, as well as the unsynchronised system of water management in Poland, many obligations were not realised. Implementation of the State Water Policy until 2030 would enable the realisation of the Water Framework Directive objectives and may impact the realisation of SDGs after 2015.

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