ASSESSMENT REPORT

on financial needs of individual Danube states for completion of waste water treatment plants and sewerage systems in order to meet the goals of the Council Directive 91/271/EEC

Waste water collection and treatment is one of the key factors influencing water quality in the region. Untreated domestic waste waters, but especially industrial water can lead to catastrophe endangering the drinking water sources and water for ecosystems. Implementation of the Council Directive 91/271/EEC significantly reduced discharges of major pollutants such as organic load and nutrients, main drivers for eutrophication in waters. Moreover, for many pharmaceutics and their metabolites there are not defined limits and they are not detected in the water and the future will show the danger it poses to human health and ecosystems. Therefore, the question of waste water treatment in the Danube Region is crucial and highly topical.

The objective of PA4 work was to gain the information from all the Danube countries related to urban waste water treatment. The outcome of the questionnaire was expected to reveal the financial needs of individual states of the Danube Strategy for completion of waste water treatment plants and sewerage systems; to provide the amount of currently available financial means from the Operational Programmes 2014-2020 and the remaining costs needed to meet Council Directive 91/271/EEC goals. Last, but not least the questionnaire was to gain the summary of available waste water treatment technologies.

To fill the objectives mentioned above, PA4 prepared the questionnaire in accordance with the PA4 Roadmap actions:

Action 4: To continue boosting major investments in building and upgrading urban wastewater treatment facilities across the Danube Basin, including measures to build capacity at the regional and local level for the design of such infrastructure
Milestone 2, Work 3: Preparation of a financial plan for the implementation programme on update for the UWWT
Outcome: survey of financial needs of individual states of the Danube Strategy for completion of waste water treatment plants and sewerage systems; amount of currently available financial means from the Operational Programmes 2014-2020 and remaining costs needed in the form of a questionnaire
Milestone 3, Work: To promote investments to foster penetration, where necessary, of improved UWWT technology based on research or already proved "state of the art" technologies
Outcome: summary of available technologies

The questionnaire comprised of 8 questions was prepared, see evaluation below.

The work was strongly related to the principles of the **Urban Waste Water Treatment Directive (UWWTD, 91/271/EEC) –** later on "Directive".

Urban waste water treatment directive plays an important role in urban waste water management, in protection of recipient (surface water) and water part of our environment. Its implementation in EU-15 countries still represent significant challenges even 15 years after the adoption. These challenges are even more serious for EU-10 countries since the directive is one of legal EU legislation documents with the most difficult implementation requirements. EU-10 countries negotiated individual transitional periods for its implementation. Last deadline for meeting the requirements is 31 December 2015. Simultaneously there will be the significant financial support available from financial tools, e.g. Cohesion Fund, Regional Development Fund.

Uncollected and untreated wastewater generated by the EU's 500 million inhabitants is a major source of pollution that affects quality of fresh and marine waters and presents a risk to human health and biodiversity.

The Urban Waste Water Treatment Directive establishes minimum requirements for collection and treatment of urban wastewater and is one of the key policy instruments under the EU water *acquis.* Implementation of the UWWTD since its adoption in 1991 has, in particular, significantly reduced discharges of major pollutants such as organic load and nutrients, main drivers for eutrophication in waters. However, implementation is still far from complete. Some of the Member States that joined the EU in 2004 or later face important compliance gaps.

Implementation is challenging due to financial and planning aspects linked to the construction of waste water infrastructure. To help meet these challenges, the EU dedicated a significant amount of funding under the EU Cohesion Policy funds (17.8 billion EUR in the 2007-2013 programming period, which is still subject to changes). Investments in infrastructure lead, directly and indirectly, to economic growth and employment and therefore contribute to one of the key priorities of the current Commission to boost jobs, growth and investment.

Continued efforts to improve and maintain compliance with the UWWTD are essential, as also recognised by the 7th Environmental Action Programme, which states that, in order to protect, conserve and enhance the EU's natural capital by 2020, the impact of pressures on transitional, coastal and fresh water must be significantly reduced in line with the WFD's requirements.

High quality sanitation services are also an important concern for EU Citizens, as reflected in the European Citizen's Initiative (ECI) 'Right2Water'. The Commission recognised this and has committed to take steps to meet the concerns raised. These include reinforcing implementation, actions to improve transparency in water data management and a more structured dialogue between the stakeholders.

The questionnaire related to UWWT topic comprised of 8 questions was prepared and consequently sent to SG members. Although reminded, only 5 countries replied (A, CZ, SK, BG, MD – see replies below). The rest of data was searched in available data sources - http://ec.europa.eu/eurostat/data/database, ICPDR - The Danube River Basin District Management Plan – Update 2015, Annex 3 and 8th Technical assessment of the implementation of Council Directive concerning Urban Waste Water Treatment (91/271/EEC) report http://ec.europa.eu/environment/water/water-urbanwaste/implementation/implementationreports_en.htm.

We must emphasize that the data collected are reported to the reference year 2012, i.e. before finishing the financial period of the Operational programs 2007-2013. Therefore, many of the

waste water treatment plants and sewage systems were under construction, not finished, and they were not registered in these reports. So the data provided (2012) should differ from the present state (2016). We expected, as EUSDR added value, to update the data on UWWT available in EU reports, but unfortunately due to very low level in countries feedback it did not happen.

Questionnaire evaluation

Question 1 and 2

1. **What is the total share of inhabitants connected to the public sewerage system out of the total population in your country?**
2. **What is the share of inhabitants connected to the public sewerage system in agglomerations above 2000 p.e. out of the total population in agglomerations above 2000 p.e.?**

States concentrate on bigger municipalities, since bigger cities produce more pollution. It is visible that the share of connected inhabitants in agglomerations above 2000 p.e. in monitored counties (*p.e. = population equivalent means the organic biodegradable load having a five day biochemical oxygen demand (BOD 5) of 60 g of oxygen per day*) is bigger in comparison with the total share of connected inhabitants within the country. Small municipalities are not obliged to be connected to public sewerage system, however, there have to be established individual or other appropriate systems of waste water treatment which correspond with the requirements of the Council Directive 91/271/EEC (water proof cesspits, other individual or appropriate systems). Capacity of waste water treatment plants has to correspond with totally generated waste water including waste water accumulated in individual or other appropriate systems. There has to be mentioned that the implementation of the Council Directive 91/271/EEC is really demanding from technical, time and financial viewpoint which is clearly seen when it is implemented into practice. We can see that there is a huge difference between original European Union members, recent EU members and non-EU members. Although the countries which accessed the European Union relatively a short time ago pay a full attention to these issues, they considerably lag behind original EU countries. **In the end we can say that the defined objectives are much more ambitious than the reality of its fulfilment seems to appear.**

Question 3

3. **What share of agglomerations above 2000 p.e. is in accordance with the requirements of the Urban Waste Water Treatment Directive - 91/271/EEC (according to the Articles 3, 4 and 5) out of the total number of agglomerations above 2000 p.e. in your country?**

Quotation of the Articles 3, 4 a 5 of the Council Directive 91/271/EEC:

Article 3

1. *Member States shall ensure that all agglomerations are provided with collecting systems for urban waste water,*

a. *at the latest by 31 December 2000 for those with a population equivalent (p.e.) of more than 15000, and*
b. *at the latest by 31 December 2005 for those with a p.e. of between 2000 and 15000.*

2. *For urban waste water discharging into receiving waters which are considered „sensitive areas" as defined under Article 5, Member States shall ensure that collection systems are provided at the latest by 31 December 1998 for agglomerations of more than 10000 p.e.*
3. *Where the establishment of a collecting system is not justified either because it would produce no environmental benefit or because it would involve excessive cost, individual systems or other appropriate systems which achieve the same level of environmental protection shall be used.*
4. *Collecting systems described in paragraph 1 shall satisfy the requirements of Annex I (A). These requirements may be amended in accordance with the procedure laid down in Article 18.*

Article 4

1. *Member States shall ensure that urban waste water entering collecting systems shall before discharge be subject to secondary treatment or an equivalent treatment as follows:*
   a. *at the latest by 31 December 2000 for all discharges from agglomerations of more than 15000 p.e.,*
   b. *at the latest by 31 December 2005 for all discharges from agglomerations of between 10000 and 15000 p.e.,*
   c. *at the latest by 31 December 2005 for discharges to fresh-water and estuaries from agglomerations of between 2000 and 10000 p.e.*
2. *Urban waste water discharges to waters situated in high mountain regions (over 1500 m above sea level) where it is difficult to apply an effective biological treatment due to low temperatures may be subjected to treatment less stringent than that prescribed in paragraph 1, provided that detailed studies indicate that such discharges do not adversely affect the environment.*
3. *Discharges from urban waste water treatment plants described in paragraphs 1 and 2 shall satisfy the relevant requirements of Annex I.B. These requirements may be amended in accordance with the procedure laid down in Article 18.*
4. *The load expressed in p.e. shall be calculated on the basis of the maximum average weekly load entering the treatment plant during the year, excluding unusual situations such as those due to heavy rain.*

Article 5

1. *For the purposes of paragraph 2, Member States shall by 31 December 1993 identify sensitive areas according to the criteria laid down in Annex II.*
2. *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, by 31 December 1998 at the latest for all discharges from agglomerations of more than 10000p.e.

3. *Discharges from urban waste water treatment plants described in paragraph 2 shall satisfy the relevant requirements of Annex I B. These requirements may be amended in accordance with the procedure laid down in Article 18.*
4. *Alternatively, requirements for individual plants set out in paragraphs 2 and 3 above need not apply in sensitive areas where it can be shown that the minimum percentage of reduction of the overall load entering all urban waste water treatment plants in that area is at least 75 % for total phosphorus and at least 75 % for total nitrogen.*
5. *Discharges from urban waste water treatment plants which are situated in the relevant catchment areas of sensitive areas and which contribute to the pollution of these areas shall be subject to paragraphs 2, 3 and 4.*
6. *In cases where the above catchment areas are situated wholly or partly in another Member State Article 9 shall apply.*
7. *Member States shall ensure that the identification of sensitive areas is reviewed at intervals of no more than four years.*
8. *Member States shall ensure that areas identified as sensitive following review under paragraph 6 shall within seven years meet the above requirements.*
9. *A Member State does not have to identify sensitive areas for the purpose of this Directive if it implements the treatment established under paragraphs 2, 3 and 4 over all its territory.*

There is a remarkable progress related to the Article 3 of the Directive. Individual member states present good results, the level of fulfilment is high. Almost all member states reach the requirements despite the fact that the several states apply individual or other appropriate systems of waste water treatment. Many states show high level (up to 20 %) of individual or other appropriate systems of waste water treatment usage. **The attention should be paid to connection of waste water producers to the new built public sewage systems.**

Regarding Article 4 and 5 of the Directive, the level of its fulfilment is not that high in the member states, but a considerable progress was achieved. It is necessary to remark that related to the level of accordance with Article 4 and 5 in recent EU member states, there is intensive completion of waste water treatment plants (WWTP) in accordance with the Directive requirements. Since the reference year of data collection is the year 2012, at that time many of WWTP and sewage systems financed by Operational Programs 2007-2013 were under construction. This fact is manifested mainly in recent EU members where intensive completion and intensification of waste water treatment plants and sewerage systems is happening in accordance with this article of the Directive. The significant progress is expected after finishing the constructions and putting them into operation, especially after 2015.

Question 4 and 5

4. **What is the share of waste water treated in waste water treatment plants out of the total amount of produced waste water in your country?**
5. **What is the share of waste water treated in waste water treatment plants in agglomerations above 2000 p.e. out of the total amount of waste water produced in agglomerations above 2000 p.e.?**

We can state that the share of waste water treated in WWTP (emphasising the agglomerations over 2000 p.e.) in original and recent EU members gradually reaches the level 100 % in accordance with the Directive requirements. The Council Directive 91/27//EEC demands that all produced waste water in agglomerations shall be treated to appropriate level corresponding to the size category of agglomeration. Reaching this level depends on sufficient capacity of the waste water treatment plant for the specific agglomeration. **The level of waste water treatment in non-EU members is quite low from this viewpoint, so this is the challenge for non-EU members for the upcoming years.**

Question 6

6. **What is the planned amount of allocated financial means for reconstruction and completion of public sewerage systems and waste water treatment plants within the Operational Programmes 2014 – 2020 in your country out of the total financial means needed for meeting the requirements resulting from the UWWT Directive 91/271/EEC?**

Regarding the provision of financial resources for the intensification, reconstruction and completion of waste water treatment plants, the need of the European Union member states are completely different. Original EU countries have already met the requirements of the Council Directive 91/271/EEC and nowadays they mostly need to reconstruct and renew the facilities and maintain achieved status. However, recent EU members and other countries located in the Danube Region still need the financial resources for the intensification and completion of networks and waste water treatment plans to meet the requirements of the Directive. As it was said before, implementation of the Directive is technically and financially demanding and time-consuming. The planned amount of allocated financial means for reconstruction and completion of public sewerage systems and waste water treatment plants for an inhabitant per year moves from 13 Euro (CZK) to 67 Euro (HR). Amount of financial means planned for sewerage system and waste water treatment plans in individual countries reflects economic possibilities of the states. **Important benefit is the help of the European Union through EU financial mechanisms.**

Question 7 and 8

7. **Specify the most commonly used technologies for waste water treatment in your country?**
8. **Specify the best available technologies for waste water treatment applied in your country?**

Standard technologies are used, they are adjusted to the outcomes corresponding with the requirements of the Directive. Research is constantly progressing and countries are trying to apply the best available technologies on the market, e.g. membrane technologies.

The replies from the Danube countries and summary table follow:

Country: **Austria**

1. What is the total share of inhabitants connected to the public sewerage system out of the total population in your country?
   94,9% by 2011 (source: Draft RBMP 2015)
   The remaining 5,1% are treated in individual wastewater treatment plants or other appropriate systems. Due to the topographical situation and the settlement structure in Austria a 100% connection rate to public sewerage systems is neither possible nor meaningful.
2. What is the share of inhabitants connected to the public sewerage system in agglomerations above 2000 p.e. out of the total population in agglomerations above 2000 p.e.?
   > 99 %; according to the 7th EC implementation report 99.4% of the total generated load of all agglomerations ≥ 2,000 p.e. are collected in a collecting system, while the remaining fraction is addressed through individual and appropriate systems.
3. What share of agglomerations above 2000 p.e. is in accordance with the requirements of the Urban Waste Water Treatment Directive - 91/271/EEC (according to the Articles 3, 4 and 5) out of the total number of agglomerations above 2000 p.e. in your country?
   100% (source: e.g. 7th EC implementation report)
4. What is the share of waste water treated in waste water treatment plants out of the total amount of produced waste water in your country?
   100% of the Austrian wastewater is treated in wastewater treatment plants, individual systems or other appropriate systems. (source: UWWTD Status Report 2014)
5. What is the share of waste water treated in waste water treatment plants in agglomerations above 2000 p.e. out of the total amount of waste water produced in agglomerations above 2000 p.e.?
   100% of the Austrian wastewater is treated in wastewater treatment plants, individual systems or other appropriate systems. (source: UWWTD Status Report 2014)
6. What is the planned amount of allocated financial means for reconstruction and completion of public sewerage systems and waste water treatment plants within the Operational Programmes 2014 – 2020 in your country out of the total financial means needed for meeting the requirements resulting from the UWWT Directive 91/271/EEC?
   Around € 4 bn (source: Draft RBMP 2015)
7. Specify the most commonly used technologies for waste water treatment in your country.
   Activated sludge treatment with enhanced nutrients (nitrogen and phosphorus) reduction
8. Specify the best available technologies for waste water treatment applied in your country.

All sorts of advanced technologies for waste water treatment are available in Austria and applied in specific cases, e.g. reduction of micro-pollutants by ozonisation and active-carbon-filtration, UV-disinfection, membrane-technologies,…). Furthermore Austrian treatment plants are continuously optimized according to treatment performance, cost-effective operation and energetic use as well as re-use of resources like sludge, wastewater and biogas.

Country: Czech Republic

1. What is the total share of inhabitants connected to the public sewerage system out of the total population in your country?
   83,9 % (Source: Czech Statistical Institute, 2014)
2. What is the share of inhabitants connected to the public sewerage system in agglomerations above 2000 p.e. out of the total population in agglomerations above 2000 p.e.?
   83,9%
3. What share of agglomerations above 2000 p.e. is in accordance with the requirements of the Urban Waste Water Treatment Directive - 91/271/EEC (according to the Articles 3, 4 and 5) out of the total number of agglomerations above 2000 p.e. in your country?
   In accordance with:
   Articles 3 – 100%
   Articles 4 – 87,4%
   Articles 5 – 53,7%
4. What is the share of waste water treated in waste water treatment plants out of the total amount of produced waste water in your country?
   Treated rain water 380 mil. m^3, treated industrial and other waters 140, 7 mil. m^3, treated waste water 291, 5 mil. m^3, untreated waste + untreated waste water 29, 8 mil. m^3. (Source: Czech Statistical Institute, 2014)
   96.9% of all waste water excluding rain water is treated
5. What is the share of waste water treated in waste water treatment plants in agglomerations above 2000 p.e. out of the total amount of waste water produced in agglomerations above 2000 p.e.?
   96,9%
6. What is the planned amount of allocated financial means for reconstruction and completion of public sewerage systems and waste water treatment plants within the Operational Programmes 2014 – 2020 in your country out of the total financial means needed for meeting the requirements resulting from the UWWT Directive 91/271/EEC?
   Total amount is 12 billion, amount of money for meeting the requirements resulting from the UWWT Directive 91/271/EEC should be minimal as the transitional period for the fulfilment of UWWT Directive 91/271/EEC requirements ended December 31, 2010.
7. Specify the most commonly used technologies for waste water treatment in your country.
   Mechanical biological treatment

8. Specify the best available technologies for waste water treatment applied in your country.
   Mechanical biological treatment with nutrient removal (nitrogen, phosphorus)

Country: Bulgaria

1. What is the total share of inhabitants connected to the public sewerage system out of the total population in your country?
   *74,33% **
2. What is the share of inhabitants connected to the public sewerage system in agglomerations above 2000 p.e. out of the total population in agglomerations above 2000 p.e.?
   *80%***
3. What share of agglomerations above 2000 p.e. is in accordance with the requirements of the Urban Waste Water Treatment Directive - 91/271/EEC (according to the Articles 3, 4 and 5) out of the total number of agglomerations above 2000 p.e. in your country?
   *Data are available for agglomerations above 10000 p.e. - 1.85% ***
4. What is the share of waste water treated in waste water treatment plants out of the total amount of produced waste water in your country?
   *56,06%**
5. What is the share of waste water treated in waste water treatment plants in agglomerations above 2000 p.e. out of the total amount of waste water produced in agglomerations above 2000 p.e.?
   *Data are not available for the referent year***
6. What is the planned amount of allocated financial means for reconstruction and completion of public sewerage systems and waste water treatment plants within the Operational Programmes 2014 – 2020 in your country out of the total financial means needed for meeting the requirements resulting from the UWWT Directive 91/271/EEC?
   *The planned amount of allocated financial means for reconstruction and completion of public sewerage systems and waste water treatment plants within the Operational Programme Environment 2014 – 2020 is approx. 930 million euros**** out of the total approx. 2 970 million euros***.*
7. Specify the most commonly used technologies for waste water treatment in your country.
   Most commonly used technologies for UWWT are conventional aeration tanks.
8. Specify the best available technologies for waste water treatment applied in your country.
   *Not able to specify***

* Data source: NISI - annual statistical survey on water supply and sewage, Reference year 2012

** Data source: National reporting under the Directive 91/271/EEC, Reference year 2012

*** Data source: Operational Programme Environment 2014 – 2020 approved by the EC on 15 June 2015

Country: Republic of Moldova (Ministry of Environment)

1. What is the total share of inhabitants connected to the public sewerage system out of the total population in your country?
   According to the Strategy of water supply and sanitation for 2014-2028, (base year 2012), the number of people with access to sanitation services was 761,000 people, which represents 21.4% of the population, including 50.1% in urban areas and only 1.0% in rural areas. The highest share of population with access to improved sanitation services is recorded in the North - 23.4%, followed by the Centre -10.2% South - and Gagauzia 6.7% - 2.2%.
2. What is the share of inhabitants connected to the public sewerage system in agglomerations above 2000 p.e. out of the total population in agglomerations above 2000 p.e.?
   The agglomerations have not been defined yet in the Republic of Moldova. According to the Moldova-EU Association Agreement, signed in 2014, the evaluation of the status of implementation of the Council Directive 91/271/EEC of 21 May 1991 concerning urban waste-water treatment will be conducted, including the delimitation of aglomerations and identification of sessitive areas.
3. What share of agglomerations above 2000 p.e. is in accordance with the requirements of the Urban Waste Water Treatment Directive - 91/271/EEC (according to the Articles 3, 4 and 5) out of the total number of agglomerations above 2000 p.e. in your country?
   No evaluation has been made according to the requirements of Urban Waste Water Treatment Directive - 91/271/EEC.

4. What is the share of waste water treated in waste water treatment plants out of the total amount of produced waste water in your country?
   The total amount of waste water evacuated (year 2014) – 670,27 million cubic meters, out of which 108,97 million cubic meters are sufficient treated in waste water treatment plants.
5. What is the share of waste water treated in waste water treatment plants in agglomerations above 2000 p.e. out of the total amount of waste water produced in agglomerations above 2000 p.e.?
   No evaluation has been made according to the requirements resulting from the Urban Waste Water Treatment Directive - 91/271/EEC.
   According to the Strategy of water supply and sanitation for 2014-2028, the estimated costs for the implementation of the Strategy related to management of waste water is 1,04 billion EUR. Such investments are inaccessible for the Republic of Moldova.
6. What is the planned amount of allocated financial means for reconstruction and completion of public sewerage systems and waste water treatment plants within the Operational Programmes 2014 – 2020 in your country out of the total financial means needed for meeting the requirements resulting from the UWWT Directive 91/271/EEC?
   No information available at the moment.

7. Specify the most commonly used technologies for waste water treatment in your country.
   Classical treatment (mechanical and biological), constructed wetlands.
8. Specify the best available technologies for waste water treatment applied in your country.
   Classical treatment (mechanical and biological).

Country: Slovakia

1. What is the total share of inhabitants connected to the public sewerage system out of the total population in your country?
   64,67% (source: WRI materials for the Statistical Office of the Slovak Republic, reference year 2014)
2. What is the share of inhabitants connected to the public sewerage system in agglomerations above 2000 p.e. out of the total population in agglomerations above 2000 p.e.?
   82,72% (source: WRI materials for 8th report for the European Commission on the implementation of the Directive 91/271/EEC, reference year 2012)
3. What share of agglomerations above 2000 p.e. is in accordance with the requirements of the Urban Waste Water Treatment Directive - 91/271/EEC (according to the Articles 3, 4 and 5) out of the total number of agglomerations above 2000 p.e. in your country?
   Out of 356 agglomerations above 2000 p.e., 65 agglomerations have transitional period as of 31 December 2015. Remaining 291 agglomerations reach the following accordance for individual articles: Article 3 – 100% accordance (including debatable accordance), Article 4 – 91,47%, Article 5 – 50,62%. Article 5 is relevant for only 81 agglomerations (since they are above 10 000 p.e.). (source: WRI materials for 8th report for the European Commission on the implementation of the Directive 91/271/EEC, reference year 2012)
4. What is the share of waste water treated in waste water treatment plants out of the total amount of produced waste water in your country?
   98,52% (source: WRI materials for the Statistical Office of the Slovak Republic, reference year 2014)
5. What is the share of waste water treated in waste water treatment plants in agglomerations above 2000 p.e. out of the total amount of waste water produced in agglomerations above 2000 p.e.?
   85,15% (source: WRI materials for 8th report for the European Commission on the implementation of the Directive 91/271/EEC, reference year 2012)
6. What is the planned amount of allocated financial means for reconstruction and completion of public sewerage systems and waste water treatment plants within the Operational Programmes 2014 – 2020 in your country out of the total financial means needed for meeting the requirements resulting from the UWWT Directive 91/271/EEC?
   To construct/intensify waste water treatment plants and to complete sewerage systems 750 million Euro is necessary.
7. Specify the most commonly used technologies for waste water treatment in your

country.

In the referential year 2012 the most common technology for waste water treatment was the usage of mechanical-biological treatment. (Source: WRI materials for 8th report for the European Commission on the implementation of the Directive 91/271/EEC, reference year 2012). Mechanical stage includes applied technologies for trapping gravel and sand (with sand washing), trapping flowing debris at coarse and fine screens (with washing and pressing) and sedimentation processes usage (primary sedimentation tanks). Biological stage mostly includes technological modifications of low loaded activation process with nutrient removal. Sludge management consists of sludge thickening, sludge anaerobic stabilization, mechanical sludge dewatering and energetic biogas usage. Currently many constructions from the Environmental Quality Operational Programme are already finished and further constructions from this programme are in the preparation phase which contributes to the improvement of waste water treatment in the upcoming time.

8. Specify the best available technologies for waste water treatment applied in your country.

   In the Slovak Republic there are all modern waste water treatment technologies available. The most used examples are technological modifications of mechanical-biological treatment with nutrients removal (N and P) with using the elements of process automation and optimization. In justified cases a tertiary treatment is applied, e.g. membrane processes, microfiltration, etc.

Questionnaire on financial needs of individual Danube states for completion of waste water treatment plants and sewerage systems in order to meet the goals of the Council Directive 91/271/EEC

No	Question	D	A	CZ	SK	HU	SLO	HR	SRB	MTE	BiH	RO	BG	UA	MD	Supplemented information source
1	What is the total share of inhabitants connected to the public sewerage system out of the total population in your country?	*97,3*	94,90%	84%	64,67%	*75*	*62,6*	*53*	*57,8*	*35*	*35,2*	*47,1*	74%	*no data*	21.4% of the population, including 50.1% in urban areas and only 1.0% in rural areas	*http://ec.europa.eu/eurostat/data/database*
2	What is the share of inhabitants connected to the public sewerage system in agglomerations above 2000 p.e. out of the total population in agglomerations above 2000 p.e.?	*99,8*	> 99 %	84%	82,72%	*98,2*	*92,6*	*no data*	*no data*	*no data*	*no data*	*88,99*	80%	*no data*	The agglomerations have not been defined yet in the Republic of Moldova	*ICPDR - The Danube River Basin District Management Plan – Update 2015 ANNEX 3*
3	What share of agglomerations above 2000 p.e. is in accordance with the requirements of the Urban Waste Water Treatment Directive - 91/271/EEC (according to the Articles 3, 4 and 5) out of the total number of agglomerations above 2000 p.e. in your country?	*A3 100% A4 100% A5 100%*	100%	Articles 3 – 100%; Articles 4 – 87,4%; Articles 5 – 53,7%	Out of 356 agglomerations above 2000 p.e., 65 agglomerations have transitional period as of 31 December 2015. Remaining 291 agglomerations reach the following accordance for individual articles: Article 3 – 100% accordance (including debatable accordance), Article 4 – 91,47%, Article 5 – 50,62%. Article 5 is relevant for only 81 agglomerations (since they are above 10 000 p.e.). A3 100% A4 91,47% A5 50,62%	*A3 100% A4 84% A5 64%*	*A3 57% A4 15% A5 35%*	*A3 A4 25% A5*	*A3 A4 10% A5*	*no data*	*A3 A4 2% A5*	*A3 99% A4 47% A5 16%*	Data are available for agglomerations above 10000 p.e. - 1.85% *A3 13% A4 7,4% A5 1%*	*no data*	No evaluation has been made	*8th Technical assessment of the implementation of Council Directive concerning Urban Waste Water Treatment (91/271/EEC) - REPORT http://ec.europa.eu/environment/water/water-urbanwaste/implementation/implementationreports_en.htm REFERENCE YEAR 2012*
4	What is the share of waste water treated in waste water treatment plants out of the total amount of produced waste water in your country?	*no data*	100%	Treated rain water 380 mil. m3, treated industrial and other waters 140, 7 mil. m3, treated waste water 291, 5 mil. m3, untreated waste + untreated waste water 29, 8 mil. m3. 96.9% of all waste water excluding rain water is treated *98,99%*	99%	*no data*	*no data*	*no data*	*no data*	*no data*	*no data*	*no data*	56,06%	*no data*	The total ammount of waste water evacuated (year 2014) – 670,27 million cubic meters, out of which 108,97 million cubic meters are sufficient treated in waster water treatment plants - i.e. 16,25%	
5	What is the share of waste water treated in waste water treatment plants in agglomerations above 2000 p.e. out of the total amount of waste water produced in agglomerations above 2000 p.e.?	*100,00%*	100%	96,90%	85%	*86,5*	*80,3*	*49,12% **	*13,36% **	*6,1% **	*14,64% **	*59,40%*	Data are not available for the referent year *80,5 %*	*36,30% **	No evaluation has been made	*8th Technical assessment of the implementation of Council Directive concerning Urban Waste Water Treatment (91/271/EEC) - ANNEX V http://ec.europa.eu/environment/water/water-urbanwaste/implementation/implementationreports_en.htm REFERENCE YEAR 2012 *ICPDR - The Danube River Basin District Management Plan – Update 2015 ANNEX 3*
6	What is the planned amount of allocated financial means for reconstruction and completion of public sewerage systems and waste water treatment plants within the Operational Programmes 2014 – 2020 in your country out of the total financial means needed for meeting the requirements resulting from the UWWT Directive 91/271/EEC?	*4400 mil €/year 54 €/inh/year*	around 4 bn EUR *415 mil €/year 49 €/inhabitant/year*	Total amount is 12 billion CZK *133 mil €/year 13 €/inhabitant/year*	To construct/intensify waste water treatment plants and to complete sewerage systems 750 million Euro is necessary. *124 mil €/year 23 €/inhabitant/year*	*462 mil €/year 47 €/inhabitant/year*	*79 mil €/year 38 €/inhabitant/year*	*288 mil €/year 67 €/inhabitant/year*	*no data*	*no data*	*no data*	*734 mil €/year 37 €/inhabitant/year*	Operational Programme Environment 2014 – 2020 approx. 930 million euros out of the total approx. 2 970 million euros *371 mil €/year 52 €/inhabitant/year*	*no data*	1,04 billion EUR	*8th Technical assessment of the implementation of Council Directive concerning Urban Waste Water Treatment (91/271/EEC) - ANNEX V http://ec.europa.eu/environment/water/water-urbanwaste/implementation/implementationreports_en.htm REFERENCE YEAR 2012*

No	Question	*D*	A	CZ	SK	*HU*	*SLO*	*HR*	*SRB*	*MTE*	*BiH*	*RO*	BG	*UA*	MD	Supplemented information source
7	Specify the most commonly used technologies for waste water treatment in your country.		Activated sludge treatment with enhanced nutrients (nitrogen and phosporus) reduction	Mechanical biological treatment	In the referential year 2012 the most common technology for waste water treatment was the usage of mechanical-biological treatment. Mechanical stage includes applied technologies for trapping gravel and sand (with sand washing), trapping flowing debris at coarse and fine screens (with washing and pressing) and sedimentation processes usage (primary sedimentation tanks). Biological stage mostly includes technological modifications of low loaded activation process with nutrient removal. Sludge management consists of sludge thickening, sludge anaerobic stabilization, mechanical sludge dewatering and energetic biogas usage. Currently many constructions from the Environmental Quality Operational Programme are already finished and further constructions from this programme are in the preparation phase which contributes to the improvement of waste water treatment in the upcoming time.								conventional aeration tanks	*no data*	Classical treatment (mechanical and biological), constructed wetlands.	
8	Specify the best available technologies for waste water treatment applied in your country.		reduction of micro-pollutants by ozonisation and active-carbon-filtration, UV-disinfection, membrane-technologies	Mechanical biological treatment with nutrient removal (nitrogen, phosphorus)	In the Slovak Republic there are all modern waste water treatment technologies available. The most used examples are technological modifications of mechanical-biological treatment with nutrients removal (N and P) with using the elements of process automation and optimization. In justified cases a tertiary treatment is applied, e.g. membrane processes, microfiltration, etc.								Not able to specify	*no data*	Classical treatment (mechanical and biological)	

Explanations:
black EU member country
blue non-EU member country
data from questionnaire
data from other sources