UNIVERSITY OF NOVI SAD
FACULTY OF TECHNICAL SCIENCES
Trg Dositeja Obradovica 6
21000 Novi Sad, Serbia and Montenegro
Tel. + 381 21 6350 413; + 381 21 450 810; Fax: + 381 21 458 133
e-mail: ftndean@uns.ns.ac.yu

Strengthening the Capacity for Implementation of the Directive 76/464/EEC in Vojvodina Region

Project SAMRS/2007/01/36

Technical report 4

"Guideline for Definition of list of relevant chemical substances in accordance with requirements of Directive 76/464/EEC"

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Content

1. Introduction

In the past, a great number of the chemical substances were introduced into the environment, especially into the water systems. Many of the water resources are till now contaminated by specific organic compounds and heavy metals, which were produced in the given catchment area on delivered by the consumers to the territory. During the time it was recognized that many of the chemical substances have toxic effects on the human and the aquatic biota. Therefore, several years ago both on national and international levels legal framework was established to cope with the issue regarding dangerous substances.

The leading institutions in the field of the dangerous substances have begun in EU. Slovakia as Member State from the 2004 has already transposed and implemented into the practice main Directives and Regulations of EU connected to this problem. The main elements of the relevant acquis communautaire were transferred into the Water Act and Programme of Pollution Reduction by Dangerous Substances (later only Programme). The segment focused on organic issue of this Program was presented by List of Relevant Dangerous Substances for Slovakia. Experience gained though the development of this List was also used in the preparing the Methodology to develop the List of Relevant Dangerous Substances for Pilot Nadela River basin.

2. Legal framework to develop the List of Dangerous Substances

The main documents in reference to the List of Dangerous Substances are Directives of EU as follows:

Main documents

- EU Directive 76/464/EEC and its Daughter Directives
- EU WFD 60/2000/EC
- And other secondary legislation

Complementary documents

- EU Directives 91/414/EC
- EU Directive on chemical substances
- EU IPPC Directives
- Acts on Air Quality, Waste Management, Chemical Management, others (secondary legislation)

Furthermore, in this sense some technical standards and lower level legal documents can be used, with some measures involved, related to dangerous substances. They are different from country to country, but for the development of the List of Dangerous Substances, they don’t have significant influence.

Serbia has declared several years ago to start a process of accession to the EU, and this process has already been started. In this sense, it is important to be prepared for the implementation of the acquis communautaire in the field of environment. Serbia can use the experience and knowledge from the similar process which was done by Slovakia.

3. Selection of the Relevant Dangerous Substances for Nadela River basin

3.1 Gross List of the Potential Dangerous Substances

The first and basic step in the process of development of the List of Dangerous Substances is to collect all relevant and available information and data on water quality, sediment quality, used and produced chemical substances, both industrial and pesticides. Following should be included the development process of the Gross List:

- List of 139 chemical substances defined by EC,
- List of chemical substances used in high volumes (HVCHS >1000 t) and low volumes (LVCHS >10 t a < 1000 t), that are introduced on the market in Vojvodina or Nadela River basin,
- Information and data on the pesticides, or if available on active substances involved in the pesticides (this data should be stored in the one of the agricultural institutions),
- Information and data on the emission from the point sources of pollution by waste waters,
- Data and information from the water quality monitoring programme in Serbia, where Nadela is located,
- Data from the inventory of the dangerous substances in the locality,
- Data from surveys made in the Nadela River basin.

Such Gross List of Potential Dangerous Substances for the Nadela River basin in the later stages will be exposed to investigation regarding preparation of the List of Relevant Dangerous Substances. The methodology to make such selection is described in the next chapters.

3.2 Methodology to select the Relevant Dangerous Substances

As the first step in this process of selection, is to subdivide the substances in the Gross List on the pesticides and other dangerous substances. The reason to make such distinction between these two groups is just that selection criteria for both groups will be different. In the next step, method to select the Relevant Dangerous Substances except pesticides and followed by dangerous substances from group of pesticides.

3.2.1 Selection Criteria for Relevant Dangerous Substances except pesticides

As it was mentioned in the previous chapter, the Gross List was subdivided on two sub-groups of dangerous substances.
The first group was created by dangerous substances except pesticides. For this group of chemicals following selection criteria are proposed:

1. Dangerous substances are put into the group of **"the Relevant Dangerous Substances"** in following cases:

    a) Chemical substance is involved on the List of Priority Chemical Substances of the WFD 2000/60/ES (Water Framework Directive).

b) If chemical substance is monitored, and EQS (Environmental Quality Standard) is available, and detected chemical substance concentration exceeds the EQS.
c) If chemical substance is monitored, its EQS is not available, and chemical substance was identified at least in one sampling site of the Nadela River basin and it is evident from the other sources that this chemical substance is used/produce in the locality.

2. Dangerous substances are classified as **"the Potentially Relevant Dangerous Substances"** in following cases:

a) If chemical substance is monitored and EQS is available, its measured concentrations were below the EQS, but it is evident from the other resources that this chemical substance is used/produced in the Nadela River basin.
b) If chemical substance is monitored and EQS is not available and chemical substance was identified only occasionally in one or two sampling sites and is used/produced in the Nadela River basin.
c) If chemical substance is monitored, but its detection limit is higher than EQS.
d) If chemical substance is not monitored, however this chemical substance is used/produced in high volume.
e) If chemical substance is not monitored, however this chemical substance is used/produced in low volume.

3. Dangerous substances are classified as **"the Not Relevant Dangerous Substances"** in following cases:

a) If chemical substance is monitored and EQS is available, its measured concentrations were below the EQS, but it is evident from the other resources that this chemical substance is not used/produced in the Nadela River basin.
b) If chemical substance is not monitored and it is evident from the other resources that chemical substance is not used/produced in the Nadela River basin.

3.2.2 Selection Criteria for pesticides

The following approach is proposed to be applied in the selection of the pesticides related to the Relevant Dangerous Substances.

a) Chemical substances (active substances in pesticides) from the group of pesticides, which are used in Vojvodina in volume higher than 1 tone per year.
b) For each chemical substance so called *"Application Coefficient"* will be calculated. This coefficient is ratio used chemical substance and the agricultural area of the Nadela River basin.
c) The value of the *Application Coefficient* will be multiplied by safety factor 3 and this value will be subsequently compared with *"Reference Application Coefficients"* published in Regulation No. 2078/92 EEC.
d) When making such calculations and comparison, chemical substances are classified by the following way:

As **"Relevant Dangerous Substances**",

- ⇨ Which are on the List of 33 Priority Substances of WFD (2000/60/ES) and Regulation No. 2455/2001/EC are used in Vojvodina;
- ⇨ In which calculated Application Coefficient is the same order of magnitude as it in Reference Application Coefficient as published in Regulation No. 2078/92/EEC, even if the chemical substance was not identified and quantified by the monitoring programme or surveys in the past (here it is necessary to be mentioned, that chemical substance was applied in the period that was not covered by monitoring activities (not sufficient sampling frequencies)).

As **"Potentially Relevant Dangerous Substances"**,

- ⇨ In which calculated Application Coefficient is one order of magnitude lower than Reference one as it is published in Regulation No. 2078/92/EEC.

As **"Not Relevant Dangerous Substances"** for all other pesticides.

4. Review of information sources about production, and use of relevant chemical substances in Vojvodina region

As it was mentioned in the previous part of this report the List of the Relevant Dangerous Substances for Nadela River basin, will be base on the all available information and data. Review of the data and information availability was done by Serbian partner. The review itself follows the steps proposed in the Methodology for preparation of the Gross List of dangerous Substances where experiences from the Slovakia were also used.

4.1 Point sources of pollution

Nowadays, there is only very limited data and information related to the dangerous substances in Vojvodina (even in the whole Serbia) available to be used for the purpose of the development of the List of Relevant Dangerous Substances from Nadela River basin. Therefore, it was necessary to combine all kind of information which is available from the previous programmes and projects. Some of the data and information on point sources of pollution in the Nadela River basin are presented in Table 1 below.

Table 1. The list of pollution sources in the Nadela River basin as pilot area

Name of company	Location / river	Type of production	Used chemical substances	Waste water treatment plant
1. F.Š. „JEDINSTVO" KOVAČICA	Kovacica / Nadela	Sugar factory	Alkaline solutions	-
2. FARMA SVINJA „CREPAJA"	Crepaja / Nadela	Pig farm	Bactericides, live stock feed	-
3. A.D. „KAČAREVO" KAČAREVO	Kacarevo/ Nadela	Wheat breeding	Pesticides-herbicided, fertilizers	-
4. „SKROBARA" JABUKA	Jabuka / Nadela	Farina production	Mild chemicals (acids and base)	-
5. HLADNJAČA PANČEVO	Pancevo / Nadela	Freezing of agricultural products	Freon, CO_2, NH_3	-
6. „MLEKARA" PANČEVO	Pancevo / Nadela	Production of dairy products	Bactericides	-

Name of company	Location / river	Type of production	Used chemical substances	Waste water treatment plant
7. TAMIŠ MEHANIZACIJA PANČEVO	Pancevo / Nadela	Trade with agricultural machinery	-	-
8. MINEL 2 PANČEVO	Pancevo / Nadela	Civil engineering, Thermoenergetic, Termotechnic	-	-
9. JKP ATP PANČEVO	Pancevo / Nadela	Transportation services	Petrol	-
10. LIVNICA PANČEVO	Pancevo / Nadela	Iron moulding	Unorganic acid and reductants	-
11. *FABRIKA OBUĆE PANČEVO*	Pancevo / Nadela	Footwear production	Aniline colors, Na_2S	-
12. „TANK" AUTOPERIONICA PANČEVO	Pancevo / Nadela	Carwash	Detergents	-
13. DOM SLEPIH „ZBRINJAVANJE" PANČEVO	Pancevo / Nadela	Apartments for blind people	Detergents	-
14. A.D. „STARI TAMIŠ" PANČEVO, FARMA	Pancevo / Nadela	Primary agricultural production	Herbicides	-
15. A.D. „VOJVODINA" STARČEVO	Starcevo/ Nadela	Wheat breeding	Pesticides-herbicided, fertilizers	-
16. „TAMIŠ" SEMENSKI CENTAR PANČEVO	Pancevo / Nadela	Agricultural production	Pesticides-herbicided, fertilizers	-
17. A.D. „DOLOVO"	Dolovo / Vodice	Agricultural production	Pesticides-herbicided, fertilizers	-
18. BENZINSKE PUMPE NA KANALU VODICE	Dolovo / vodice	Gas station	Petrol, gas, diesel gas	-
19. AUTOPERIONICE NA KANALU VODICE	Dolovo / Vodice	Carwash	Detergents	-
20. KLANICA „PLAVI DUNAV"	Pancevo / Nadela	Meat industry	Disinfectants, nitrates	-
21. PEKARA I MLIN „NINIĆ"	Pancevo / Nadela	Bakery and flour mill	-	-
22. PDP"OMOLJICA" OMOLJICA, FARMA SVINJA	Omoljica / Nadela	Pig farm	Bactericides, live stock feed	-
23. FARMA SVINJA DEBELJAČA	Debeljača / Nadela	Pig farm	Bactericides, live stock feed	-

4.2 Information sources on pesticides

Similarly to the information on dangerous substances from the point sources of pollution, only very limited information on the used pesticides and active substances is available in Vojvodina. On the other hand, a result from the survey, which was made under this project has shown, that pesticide should not be an issue in the case of water quality in the Nadela River basin.

4.3 Data from the surveys

The main source of data, which was used in the elaboration of the List of relevant Dangerous Substances for the Nadela River basin derive from the latest water quality and sediment quality survey in this locality. This survey was conducted by project experts from both partner sides.
The results are summarized in the Table 2 below. 50 chemical substances were quantified by the target analysis in the concentration levels higher than LOQ values.

Table 2. Target substances detected (>LOQ) during survey in the Nadela River basin

Number	CAS	Name of substance	Identified in matrix
1	79-00-5	1,1,2 - Trichloroethane	water
2	7440-38-2	As	water
3	56-55-3	Benz[a]anthracene	water
4	205-99-2	**Benz[b]fluoranthene**	water
5	191-24-2	**Benz[g,h,i]perylene**	water
6	207-08-9	**Benz[k]fluoranthene**	water
7	50-32-8	**Benzo[a]pyrene**	water
8	7440-43-9	**Cd**	water
9	7440-47-3	Cr	water
10	7440-50-8	Cu	water
11	117-81-7	**DEHP**	water
12	53-70-3	Dibenz[a,h]anthracene	water
13	84-69-5	Diisobutyl phthalate	water
14	84-74-2	Di-n-butyl phthalate	water
15	84-66-2	Di-n-ethyl phthalate	water
16	206-44-0	**Fluoranthene**	water
17	7440-43-9	**Hg**	water
18	218-01-9	Chrysene	water
19	193-39-5	**Indeno[1,2,3,c,d]pyrene**	water
20	91-20-3	**Naphthalene**	water
21	129-00-0	Pyrene	water
22	7440-66-6	Zn	water
23	83-32-9	Acenaphthene	sediment
24	208-96-8	Acenaphthylene	sediment
25	120-12-7	**Anthracene**	sediment
26	7440-38-2	As	sediment
27	56-55-3	Benz[a]anthracene	sediment
28	205-99-2	**Benz[b]fluoranthene**	sediment
29	191-24-2	**Benz[g,h,i]perylene**	sediment
30	207-08-9	**Benz[k]fluoranthene**	sediment

Number	CAS	Name of substance	Identified in matrix
31	50-32-8	**Benzo[a]pyrene**	sediment
32	7440-43-9	**Cd**	sediment
33	7440-47-3	Cr	sediment
34	7440-50-8	Cu	sediment
35	117-81-7	**DEHP**	sediment
36	53-70-3	Dibenz[a,h]anthracene	sediment
37	84-69-5	Diisobutyl phthalate	sediment
38	84-74-2	Di-n-butyl phthalate	sediment
39	84-66-2	Di-n-ethyl phthalate	sediment
40	206-44-0	**Fluoranthene**	sediment
41	86-73-7	Fluorene	sediment
42	7440-43-9	**Hg**	sediment
43	218-01-9	Chrysene	sediment
44	193-39-5	**Indeno[1,2,3,c,d]pyrene**	sediment
45	91-20-3	**Naphthalene**	sediment
46	7440-02-0	**Ni**	sediment
47	7439-92-1	**Pb**	sediment
48	85-01-8	Phenanthrene	sediment
49	129-00-0	Pyrene	sediment
50	7440-66-6	Zn	sediment

Bold - priority substances, Annex X EU WFD

4.4 Environmental Quality Standards

Environmental Quality Standards (EQS) are defined by the legislation of the EU as follows:
"EQS means the concentration of a particular pollutant or group of pollutants in water, sediments, biota which should not be exceeded in order to protect human health and the environment."
The EQSs have been derived under the requirements of the Dangerous Substances Directive which classifies substances as List I and List II. EC (Directive 2008/105/EC) have established EQSs for 33 priority substances and certain other pollutants. These EQS are compulsory for the Member State. In case of the Relevant Dangerous Substances, the responsibility to establish EQS for particular substance is on side of Member State. However, Member State may use the EQS if it was established by other Member State, or to establish EQS directly in Member State.

5. List of Relevant Dangerous substances in accordance with requirements of Directive 76/464/EEC in the Nadela River basin

5.1 The List of Relevant Dangerous Substances for the Nadela River basin

The List of Relevant Dangerous Substances, where chemical substances were selected based on the previous selection criteria, is presented in Table 3. In the selection process only chemical substances, which were identified and quantified during the survey or were found in other resources with relevant evidence of existence, were included. Top 11 substances in the table exceed EQS values. As a consequence, the chemical substances identified by screening, and without any evidence of usage/production in the Nadela River basin, were not included in the selection process.
The List of Relevant Dangerous Substances consists of 15 chemical substances, which were identified as relevant for the Nadela River basin. In fact, there are four groups of different chemical substances, which create this List given in the Table 3. Four groups include 5 inorganic substances (4 heavy metals and 1 light), 8 PAHs, phtalate and lindane. However, in a case that new information and data will be available this List can be updated.

Table 3. List of Relevant Dangerous Substances for the Nadela River basin

Number	CAS	Name of substance
1	120-12-7	**Anthracene**
2	205-99-2	**Benz[b]fluoranthene**
3	191-24-2	**Benz[g,h,i]perylene**
4	207-08-9	**Benz[k]fluoranthene**
5	50-32-8	**Benzo[a]pyrene**
6	117-81-7	**DEHP**
7	206-44-0	**Fluoranthene**
8	193-39-5	**Indeno[1,2,3,c,d]pyrene**
9	58-89-9	**Lindane**
10	7440-02-0	**Nickel**
11	7440-66-6	Zinc
12	7440-43-9	**Cadmium**
13	91-20-3	**Naphthalene**
14	7440-43-9	**Mercury**
15	7439-92-1	**Lead**

Bold - priority substances, Annex X EU WFD

Occurrence and pollution of relevant substances group

PAHs are one of the most widespread organic pollutants. PAHs occur in oil, coal, and tar deposits, and are produced as byproducts of fuel burning (whether fossil fuel or biomass). As a pollutant, they are of concern because some compounds have been identified as carcinogenic, mutagenic, and teratogenic.
Phthalates are used in a large variety of products, from enteric coatings of pharmaceutical pills and nutritional supplements to viscosity control agents, gelling agents, film formers, stabilizers, dispersants, lubricants, binders, emulsifying agents, and suspending agents. End applications include adhesives and glues, agricultural adjuvants, building materials, personal care products, medical devices, detergents and surfactants, packaging, children's toys,

modelling clay, waxes, paints, printing inks and coatings, pharmaceuticals, food products and textiles. Phthalates are used in a variety of household applications such as shower curtains, vinyl upholstery, adhesives, floor tiles, food containers and wrappers, and cleaning materials. The most widely-used phthalates are the di-2-ethyl hexyl phthalate (DEHP), the diisodecyl phthalate (DIDP) and the diisononyl phthalate (DINP). DEHP is the dominant plasticizer used in PVC, due to its low cost.

Lindane (gamma isomer of HCH) was registered as an agricultural insecticide, and in 1951 it was approved for medical use in the treatment of scabies and lice. Lindane is a persistent organic pollutant: it is relatively long-lived in the environment, it is transported long distances by natural processes like global distillation, and it bioaccumulates in food chains. The production and agricultural use of lindane are the primary causes of environmental contamination. When lindane is used in agriculture, an estimated 12-30% of it volatilizes into the atmosphere, where it is subject to long-range transport and can be deposited by rainfall. Lindane in soil can leach to surface and even ground water and can bioaccumulate in the food chain.

5.2 List of Potentially Relevant Dangerous Substances for the Nadela River basin

The List of Potentially Relevant Dangerous Substances, where chemical substances were selected based on the previous selection criteria, is presented in Table 4. This List consists of 15 chemical substances, which were identified as relevant for the Nadela River basin. Similarly to the List of Relevant Dangerous Substances, heavy metals, PAH and phtalates are on the List of Potentially Relevant Dangerous Substances.

Table 4. List of Potentially Relevant Dangerous Substances for the Nadela River basin

Number	CAS	Name of substance
1	7440-47-3	Chromium
2	7440-38-2	Arsenic
3	7440-50-8	Copper
4	79-00-5	1,1,2 - Trichloroethane
5	83-32-9	Acenaphthene
6	208-96-8	Acenaphthylene
7	56-55-3	Benz[a]anthracene
8	53-70-3	Dibenz[a,h]anthracene
9	84-69-5	Diisobutyl phthalate
10	84-74-2	Di-n-butyl phthalate
11	84-66-2	Di-n-ethyl phthalate
12	86-73-7	Fluorene
13	218-01-9	Chrysene
14	85-01-8	Phenanthrene
15	129-00-0	Pyrene

The List of potentially Relevant Dangerous Substances is just as a “waiting room” for the chemical substances, to be transferred into the List of Relevant Dangerous Substances (new evidence on use/production) or among the group of the Not Relevant Dangerous Substances. However, it will be a task for the future.

5.3 List of Not Relevant Dangerous Substances for the Nadela River basin

Among the group of the Not Relevant Dangerous Substances (table 5) for the Nadela River basin all other chemical substances were included, which were identified, but there is no evidence on their uses or production in the river basin, or they did not meet the selection criteria. Similar as in the case the List of Potentially Relevant Dangerous Substances, this group of substances may be updated and some of the chemical substances can be transferred into the previous two groups.

Table 5. List of Not Relevant Dangerous Substances for the Nadela River basin

CAS	**Name of substance**
50-29-3	*p,p'-DDT*
75-35-4	1,1 - Dichloroethene
79-34-5	1,1,2,2 - Tetrachloroethane
107-06-2	**1,2 - Dichloroethane**
95-50-1	1,2 Dichlorobenzene
87-61-6	**1,2,3 Trichlorobenzene**
120-82-1	**1,2,4 Trichlorobenzene**
541-73-1	1,3 Dichlorobenzene
108-70-3	**1,3,5 Trichlorobenzene**
106-46-7	1,4 Dichlorobenzene
104-4-5	**4-n-Nonylphenol**
140-66-9	**4-tert.-Octylphenol**
15972-60-8	**Alachlor**
116-06-3	Aldicarb
309-00-2	*Aldrin*
1912-24-9	**Atrazine**
71-43-2	**Benzene**
98-10-2	Benzenesulfonamide
95-16-9	Benzothiazole
92-52-4	Biphenyl
80-05-7	Bisphenol A
314-40-9	Bromacil
85535-84-8	**C10-13 Chloroalkanes**
56-23-5	*Carbontetrachloride*
156-59-2	Cis 1,2 - Dichloroethene
21725-46-2	Cyanazine
not applicable	*DDT-total*
6190-65-4	Desethylatrazine
1007-28-9	Desisopropylatrazine
13684-56-5	Desmedipham
124-48-1	Dibromochlormethane
60-57-1	*Dieldrin*
75-27-4	Dichlorobrommethane
75-09-2	**Dichloromethane**
56833-73-9	Dimethoate
84-75-3	Di-n-hexyl phthalate
131-18-0	Di-n-pentyl phthalate
122-39-4	Diphenylamine
330-54-1	**Diuron**
115-29-7	**Endosulfan-alpha**

CAS	Name of substance
72-20-8	*Endrin*
26225-79-6	Ethofumesate
56-38-2	Ethyl parathion
76-44-8	Heptachlor
1024-57-3	Heptachlor epoxide
118-74-1	**Hexachlorobenzene**
87-68-3	**Hexachlorobutadiene**
108-90-7	Chlorbenzene
57-74-9	Chlordane
470-90-6	**Chlorfenvinphos**
1698-60-8	Chloridazon
2921-88-2	**Chlorpyrifos**
15545-48-9	Chlortoluron
465-73-6	*Isodrin*
34123-59-6	**Isoproturon**
330-55-2	Linuron
67129-08-2	Metazachlor
72-43-5	Metoxychlor
2385-85-5	Mirex
not applicable	**Nonylphenols (tech. mix.)**
not applicable	**Octylphenols**
32534-81-9	**PBDE-100**
32534-81-9	**PBDE-101**
31508-00-6	PCB-101
32598-14-4	PCB-105
35065-28-2	PCB-118
57465-28-8	PCB-126
38380-07-3	PCB-128
35065-28-2	PCB-138
35065-27-1	PCB-153
38380-08-4	PCB-156
32774-16-6	PCB-169
35065-30-6	PCB-170
1336-36-3	PCB-180
35694-08-7	PCB-194
7012-37-5	PCB-28
35693-99-3	PCB-52
32598-13-3	PCB-77
608-93-5	**Pentachlorobenzene**
87-86-5	**Pentachlorophenol**
7287-19-6	Prometryn
709-98-8	Propanil
7286-69-3	Sebutylazine
122-34-9	**Simazine**
5915-41-3	Terbutylazine
127-18-4	*Tetrachloroethylene*
156-60-5	Trans 1,2 - Dichloroethene
558-13-4	Tribromormethane
1582-09-8	**Trifluralin**
79-01-6	*Trichloroethylene*
67-66-3	**Trichloromethane (Chloroform)**

Bold - priority substances, Annex X EU WFD
Cursive –other substances, (Directive 2008/105/EC)

6. Conclusions and recommendations

Based on the analysis of the collected data and information from the Nadela River basin, the following conclusions can be reported on the Relevant Dangerous Substances:

- Generally, there is the lack of data and information on the dangerous substances in the Vojvodina and in Serbia as well.
- Supplementary surveys in both water and sediments can produce more information on the state of water quality related to the dangerous substances.
- Only data with level of evidence on uses and production were used in elaboration of the List of Relevant Dangerous Substances fro the Nadela River basin.
- Data from the surveys conducted by the project was the main source of information used in the elaboration of the List of Relevant Dangerous Substances in the Nadela River basin. 50 chemical substances were quantified by target survey.
- The List of Relevant Dangerous Substances for the Nadela River basin consists of 15 chemical substances, from which 5 are heavy metals and others are organic compounds.
- List of Potentially Relevant Dangerous Substances for the Nadela River basin comprises 15 chemical, organic and inorganic substances, which can be divided in 4 different groups of chemical substances. Heavy metals, PAH and phtalates are on the List of Potentially Relevant Dangerous Substances.
- Those chemical substances with low level of evidence or missing any information on to be used/produced in the Nadela River basin were included into the group of Not Relevant Dangerous Substances.

It is highly recommended to continue the process of sampling and collection of all relevant data and information in the catchment area of Nadela river basin. Due to the lack of information it can be expected that there are other toxic substances, which should be included into the List of Relevant Dangerous Substances. In this context, legislation and its implementation, as well as monitoring and information systems, should be improved in Serbia, as one of the key features of Serbian accession in the EU.

7. Literature

1. DIRECTIVE 2000/60/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL, of 23 October 2000, establishing a framework for Community action in the field of water policy

2. DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on environmental quality standards in the field of water policy, amending and subsequently repealing Directives 82/176/EEC, 83/513/EEC, 84/156/EEC, 84/491/EEC and 86/280/EEC, and amending Directive 2000/60/EC, 2008/105/EC

8. Abbrevations

LOQ	Limit of Quantification
PAH	Polycyclic aromatic hydrocarbons
DEHP	Di-2-ethyl hexyl phtalate
DIDP	Diisodecyl phtalate
DINP	Diisononyl phtalate
PS	Priority Substances
WFD	EU Water Framework Directive, 2000/60/EC