MONITORING THE ENVIRONMENTAL IMPACT OF THE WORKS REGARDING THE IMPROVING OF THE NAVIGATION CONDITIONS ON THE DANUBE RIVER BETWEEN CALARASI AND BRAILA, KM 375-175

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FINAL REPORT

CARRIED OUT BY:

1. PhD eng. DEÁK György – CS I – project leader
2. Univ. Prof. PhD eng. Iulian Gabriel BÎRSAN
3. PhD eng. Mihai LESNIC – CS I
4. PhD eng. Dan COCIORVA – CS II
5. PhD eng. George POTERAŞ – CS I
6. PhD eng. Ioan BOSOANCĂ
7. biol. SZABO Jozsef
8. PhD eng. Gina GHIȚĂ – CS II
9. Phd chem. Adriana BORŞ – CS II
10. PhD eng. Victor CRISTEA
11. PhD biol. Florica MARINESCU – CS III
12. Cecilia ŞERBAN
13. Luiza FLOREA
14. FRINK Jozsef Pal
15. Marian TUDOR
16. PhD eng. Mihaela ILIE – CS III
17. prof. univ. eng. dipl. Helmut HABERSACK
18. PhD Falka Istvan
19. PhD ZAHARIA Tania
20. ecologist AMBRUS Laszlo
21. prof. PhD eng. Gh Viorel UNGUREANU
22. Magdalena CHIRIAC – CS I
23. eng. Marius RAISCHI – CS III
24. PhD eng. Lucian LASLO – CS III
25. PhD chem. Petra IONESCU – CS III
26. ecologist MIHOLCSA Tamas
27. PhD eng. Alin Marius BÂDILIȚĂ – CSIII
28. eng. Bianca PETCULESCU – CS III
29. PhD eng. Ana Maria ANGHEL - CSIII

30. chem. Alexandru IVANOV - CSIII

31. Mădălina Georgiana BOBOC - CS

32. eng. Georgeta Tudor, CS

33. eng. chim. Ileana MÎȚIU – CS I

34. eng. Monica Niculina RADU – CS I

35. ecologist Iuliana MĂRCUȘ – CS III

36. PhD eng. Carmen TOCIU – CS III

37. chem. Carmen MUNTEANU - CS III

38. ecologist Mariana MINCU - CS III

39. PhD eng. Mihaela MÎȚIU – CSIII

40. eng. Marius OLTEANU, CSIII

41. geograph Bogdan URITESCU – CS

42. eng. Constantin CÎRSTINOIU - CS

43. geograph Nicu CIOBOTARU – CS

44. ecologist Tiberius DĂNĂLACHE, CS

45. eng. Ştefan ZAMFIR, CS

46. eng. Gabriel BADEA, CS

47. eng. Alexandru CRISTEA, CS

48. eng. Simona RAISCHI - CS

49. biol. Ioana SAVIN – ACS

50. ecologist Ecaterina MARCU – ACS

51. biologist Cristina CIMPOERU - ACS

52. ecologist Cornelia LUNGU - ACS

53. eng. Mădălin SILION, ACS

54. techn. Sergiu SĂNDICĂ

55. techn. Corneliu VASILE

56. techn. Elena BARBU

57. techn. Paula CATANĂ

58. techn. Georgeta MĂNESCU

CONTENT

1. INTRODUCTION

1.1. Brief presentation of monitored objectives

I. This report presents the monitoring objectives for the period 01-28 February 2017.

For post-construction phase the monitoring frequencies for the environmental components are presented in Table 1.1.

II. *3D numerical modeling*

During this period have been conducted processing activities for bathymetric data from previous months.

Also, a permanent cooperation has been ensured between the Coordinator and Partners.

Table 1.1. Post-construction phase - monitoring objectives - frequencies with differences in the Critical Points

MONITORING OBJECTIVES				Critical points							
				Main Critical Points			Secondary Critical Points				
				01	02	10	03A	03B	04A	04B	07
A.	AIR			S	S	S	Q	Q	Q	Q	Q
B.	NOISE			S	S	S	Q	Q	Q	Q	Q
C.	SOIL			S	S	S	Q	Q	Q	Q	Q
D.	HYDROMORPHOLOGY	Water level		C	C	C	Q	Q	Q	Q	Q
		Water velocity		M	M	M	Q	Q	Q	Q	Q
		Turbidity		C	C	C	Q	Q	Q	Q	Q
		2D bathymetric elevation		M	M	M	Q	Q	Q	Q	Q
		3D bathymetric elevation		Q	Q	Q	Not the case				
E.	WATER QUALITY			Q	Q	Q	S	S	S	S	S
	SEDIMENTS			Q	Q	Q	S	S	S	S	S
F.	AQUATIC FLORA			August			Q	Q	Q	Q	Q
	AQUATIC FAUNA			Q	Q	Q	Q	Q	Q	Q	Q
	F. is STURGEONS AND BARBELL	STURGEONS		Two seasons / year (February - May / August – December)			Two seasons / year (February - May / August – December)				
		BARBELL		One season/year April- May (breeding season)			One season/year April- May (breeding season)				
	F. i OTHER FISH SPECIES			Annually (April- May, July - September)			Annually (April- May, July - September)				
G.	TERRESTRIAL FLORA			Annually in July			Annually in July				
	TERRESTRIAL FAUNA/ AVIFAUNĂ			Annually (April - June, September - October, January)			Annually (April - June, September - October, January)				
H.	NATURA 2000 SITES	SCI	ICHTYOFAUNA	Annually (April- May, July - September)			Annually (April- May, July - September)				
			AQUATIC FLORA	July			Q	Q	Q	Q	Q
			AQUATIC FAUNA	Q	Q	Q	Q	Q	Q	Q	Q
			TERRESTRIAL FLORA	Annually in July			Annually in July				
			TERRESTRIAL FAUNA	Annually (April - June, September - October, January)			Annually (April - June, September - October, January)				
		SPA	AVIFAUNĂ	Annually (April - June, September - October, January)			Annually (April - June, September - October, January)				
J.	3D numerical modeling			M							

NOTĂ: QC – quasi continuous | M- monthly | Q – quarterly | S – semester | C – continuous

1.2. Overview

The elements related to the sampling periods for the objectives monitored in February 2017 for post-construction period are presented in Table 1.2.

Table 1.2. Objectives monitored during the period of 01.02-28.02.2017

Objectives monitored		Sampling period / ongoing activities	Campaign	Critical Points							
				Main Critical Points			Secondary Critical Points				
				01	02	10	03A	03B	04A	04B	07
A.	AIR	03, 24.02.2017	C64	YES	YES	YES	NO	NO	NO	NO	NO
B.	NOISE	03, 24.02.2017	C67	YES	YES	YES	NO	NO	NO	NO	NO
C.	SOIL	-	-	NO	NO	NO	NO	NO	NO	NO	NO
D.	HYDROMORPHOLOGY	-	-	NO	NO	NO	NO	NO	NO	NO	NO
E.	WATER QUALITY	-	-	NO	NO	NO	NO	NO	NO	NO	NO
	SEDIMENTS	-	-	NO	NO	NO	NO	NO	NO	NO	NO
F.	AQUATIC FLORA	-	-	NO	NO	NO	NO	NO	NO	NO	NO
	AQUATIC FAUNA	-	-	NO	NO	NO	NO	NO	NO	NO	NO
	F.is. STURGEONS	-	-	NO	NO	NO	NO	NO	NO	NO	NO
	F.is. BARBELL	-	-	NO	NO	NO	NO	NO	NO	NO	NO
	F.i. OTHER FISH SPECIES	-	-	NO	NO	NO	NO	NO	NO	NO	NO
G.	TERRESTRIAL FLORA	-	-	NO	NO	NO	NO	NO	NO	NO	NO
	TERRESTRIAL FAUNA/ AVIFAUNĂ	-	-	NO	NO	NO	NO	NO	NO	NO	NO
H.	NATURA 2000 SITES	-	-	NO	NO	NO	NO	NO	NO	NO	NO
I.	BUILDING SITE	-	-	NO	NO	NO	NO	NO	NO	NO	NO

NOTE:

YES – samples were taken / activities were conducted in the field

NO - no samples taken / no activities conducted in the field

Means of transportation used for sampling/conducting activities and samples analysis are presented in Table 1.3.

Table 1.3 Means of transportation

Field	Transportation means
WATER	trimaran type boat with 25 CP engine
	Laguna type boat with 25 CP engine
	Lotus type boat with 20 CP engine
	Boat - autolaboratory – with trailer - RANIERI CLF22 model, Suzuki engine, 175 CP
	Boat ANA 5.0 with trailer, Suzuki engine, 40 CP
	Boat ANA 5.5 with trailer, Suzuki engine, 70 CP
LAND	Autolaboratory – Pickup jeep Toyota Hilux Double Cab 4x4
	Autolaboratory – Jeep Toyota LandCruiser
	Autolaboratory for air monitoring
	Autolaboratory for water and soil monitoring

2. STATE OF THE PROGRESS ACTIVITIES

2.1. State and progress on each activity / critical point on specific monitoring objectives

The equipments used for sampling/ongoing activities and samples analysis are presented in table 2.1.

Table 2.1 Main devices

Objectives monitored		Sampling equipment	Laboratory equipments / ongoing activities
A.	**AIR**	- LECKEL dust sampler - Auto-laboratory - Desaga pump - GPS - Autolaboratory for air monitoring	- Analytical balance KERN 770-14 - Atomic absorption spectrometer with graphite furnace AAS - UNICAM 939
B.	**NOISE**	- Sound Level Meter and Microphone, Brüel & Kjær Denmark - GPS	
C.	**SOIL**	- Burkle sampler - GPS	- ION-CROMATOGRAPH DIONEX ICS 1500 – anions, cations - Multi N/C Analytic Jena (total carbon analyzer and organic carbon) - Spectrometer ATI UNICAM UV-VIS - Mass Spectrometer with inductively coupled plasma ICPMS NexIon 350x equiped with hydrides generator system and autosampler system with autodiluter
D.	**HYDROMORPHOLOGY**	- Portable Turbidimeter type VELP SCENTIFICA - mini ADP SONTEK - Monitoring systems for turbidity and level - Monitoring systems for flow - velocities - Portable Turbidimeter HANNA Instruments - ADCP SONTEK River Surveyor R9 - Multiparameter YSI for turbidity and level measurements - Bathimetric System 3D - Konsgberg GeoSwath Plus Compact, 250 kHz - Acoustic Doppler Current Profiler (ADCP) - Teledyne RD Instruments RiverRay - ROV (Remote Operate Vehicle) – ROVBUILDER Mini 600 - GPS	- Turbidimeter HACH RATIO/RX - Device for water quality parameters measurements, type 1, Manta 2-Sub3.5+Amphibian 2 - Device for water quality parameters measurements, type 2, Manta 2-Sub4.0+Amphibian 2
E.	**WATER QUALITY**	- Ruttner sampler - GPS	- Spectrometer with atomic absorbtion VARIAN - Spectrometer CARY BIO 300 U.V.-VIS - Spectrofotometer with atomic absorbtion – with flame, graphyte oven, hydrides system with amalgamation and automatic system for solids CONTRAA - Automatic analyzer in continous segmented flux model SAN++ - Mineralization system Speedwave Four with microwave

Objectives monitored		Sampling equipment	Laboratory equipments / ongoing activities
	SEDIMENTS	- Petersen sampler - GPS	- Cryo – drying system ALPHA 2-4 LSCplus - Gas cromatograph coupled with mass spectrometer for dioxine screening, CPF, CPB and pesticides, with autosampler r-GC MS MS 15-02 - Drying stove - Sieving system for sediment samples - Ethos - digester with microwave for sediments - GC-MS-VARIAN - Spectrometer with atomic absorbtion SOLAAR M5 - Mineralization System Speedwave Four with microwave
F.	**AQUATIC FLORA**	- planktonic nets - Patalas sampler - dredges 20cmx50 cm - Square wooden frame, with surface of 1m^2 - GPS	- reverse microscope ZEISS - OPTIKA B-600T microscope - KRUSS microscope - Canon A570 IS camera for microscope
	AQUATIC FAUNA	- zooplanktonic nets - zoobenthic nets - Petersen sampler - benthos grabbing dredges - benthos sampling probe - GPS	- Stereomicroscope Olympus - Binocular Zeiss - Microscope ZEISS - Canon A570 IS camera for microscope - magnifying glass
	F.is. STURGEONS AND BARBELL	- Fixed monitoring system DKTB - Floating monitoring system type DKMR-01T - Complex monitoring, alarming and control system type DK-PRB-01U - Monitoring system with ultrasonic transmitter type 40 - Monitoring system with ultrasonic transmitter type 60 - Mobile receiver for sturgeons' telemetry Vemco VR 100 - GPS	- Reception station of WR2W - VR100 mobile receptor - Multiparameter YSI - Endoscope for sturgeon gender determining WELLD WED 3000V - Radar Lowrance Elite 9 CHIRP – 4 pieces
	F.i. OTHER FISH SPECIES	- High power electrical fishing device Hans Grassl EL 65 II GI - Low power electrical fishing device Hans Grassl EL 60 II HI - Ihtyometer - Electronic scale - GPS - binocular microscope - stereo microscope	
G.	**TERRESTRIAL FLORA**	Binoculars, GPS, notebook, standard forms, camera	
	TERRESTRIAL FAUNA/ AVIFAUNĂ	Binocular, lunette, camera, GPS	
H.	**NATURA 2000 SITES**	Binocular, lunette, camera, GPS	
I.	**BULDING SITE ACTIVITY**	- DESAGA pump - Autolaboratory - Sound Level Meter and Microphone, Brüel & Kjær - dust sampler LECKEL	

2.1.1 Critical Point 01 monitoring, Bala branch area and Caragheorghe sand strip

2.1.1.A. Air quality monitoring

The activities carried out during 01/28.02.2017 related to air quality monitoring for each critical point are presented in Table 2.1.1.A.1.

Table 2.1.1.A.1 Specific objective: air quality monitoring

No.	Activities
1.	Organizing the measurements campaign (Table 1.2)
2.	Conducting the sampling campaign for air (bulletins for air sampling - Annex 6.2.1)
3.	Performing laboratory analysis for collected samples
4.	Performing preliminary statistical processing for the field measured data
5.	Contribution to Monthly Report 70
6.	Contribution to Interim Report 15

According to post-construction monitoring objectives, in February 2017 for air quality monitoring in this main critical point CP 01 is provided a sampling campaign as presented in Table 1.2. In post-construction period (in this main critical point CP01 have been made the reception of the construction work) frequency is biannual (as Table 1.1).

Table 2.1.1.A.2 presents the number of air samples taken/measurements "in situ" conducted during 01-28 February 2017.

Table **2.1.1.A.2. Air samples repartition**

Type of Critical Point	Critical Point (CP)	Samples collected for laboratory analysis	Number of "in situ" measurements
Main	01	6	6

For each sampling point, have been determined geographical coordinates. Samples were coded and labeled according to the encoding instructions. Also, for each sample/measurement, a bulletin has been completed, see Annex 6.2.1.

2.1.1.B. Noise monitoring

The activities carried out during 01/28.02.2017 related to noise level monitoring, for each critical point are summarized in Table 2.1.1.B.1.

Table 2.1.1.B.1. Specific objective: noise monitoring

No.	Activities
1.	Measurements campaign for noise level in zero naval traffic / naval traffic
2.	Primary processing for data obtained from measurements

No.	Activities
3.	Bulletins for field noise measurements - Annex 6.2.2
4.	Contribution to Monthly Report 70
5.	Contribution to Interim Report 15

According to post-construction monitoring objectives, in February 2017 for noise level monitoring in this main critical point CP 01 is provided a measurements campaign as presented in Table 1.2. In post-construction period (in this main critical point CP01 have been made the reception of the construction work) frequency is biannual (as Table 1.1).

In this campaign for noise level monitoring, measurements were made acoording to Table 2.1.1.B.2, below.

Table **2.1.1.B.2. Noise level monitoring**

Type of Critical Point	Critical Point (CP)	No. of measurements	
		zero naval traffic	naval traffic
Main	01	6	0

On Turcescu Islet were made 2 out of 6 measurements, another 2 measurements been made on Danube's left bank. Also 2 measurements were made on Danube's right bank.

For each sampling point were established geographic coordinates, then transcalculated in STEREO'70 projection system. The measurements were coded and labelled according to the encoding instructions. Also, for each measurement a bulletin for noise level was completed, see Annex 6.2.2.

2.1.1.C. Soil quality monitoring

The activities carried out during 01/28.02.2017 related to soil quality monitoring, in this Critical Point are summarized in Table 2.1.1.C.1.

Table 2.1.1.C.1. Specific Objective: soil quality monitoring

No.	Activities
1.	Contribution to Monthly Report 70
2.	Data processing for Interim Report 15

In this period have not been made sampling for soil in this critical point.

2.1.1.D. Hydromorphological monitoring

In February 2017 have not been made field campaigns for hydromorphological monitoring due to unfavorable hydro-meteorological conditions.

Activities have been conducted for data processing from the measurements campaigns in previous months.

2.1.1.E. Water and sediments monitoring

The activities carried out during 01/28.02.2017, related to water and sediments quality monitoring, in this critical point are summarized in Table 2.1.1.E.1.

Table 2.1.1.E.1. Specific objective: water and sediments quality monitoring

No.	Activities
1.	Contribution to Monthly Report 70
2.	Data processing for Interim Report 15

In this period have not been made sampling activities for water and sediments.

2.1.1.F. Aquatic flora and fauna monitoring

During the reporting period have not been collected any samples.

2.1.1.F.is. Sturgeons and barbell migration monitoring

In February, the monitoring team carried out the data processing and interpretation regarding sturgeons' migration during May - August 2016 and participated to elaboration of Interim Report 15. Due to the frost, there were no monitoring activities for the migration of sturgeons along the Danube. The monitoring equipment was prepared for the moment when the ice will melt and the fieldwork will be resumed.

2.1.1.F.i. Other fish species monitoring

In February are not provided any monitoring activities for fish species other than sturgeons.

2.1.1.G. Terrestrial flora and fauna monitoring

2.1.1.G.1 Terrestrial flora

During this period have not been made monitoring activities for terrestrial flora.

2.1.1.G.2 Terrestrial fauna/ Avifauna

In February 2017 have not been made monitoring activities for avifauna.

2.1.1.H. Natura 2000 sites monitoring

In February 2017 have not been made monitoring activities for Natura 2000 sites.

2.1.1.I. Working site activities monitoring and intervention plan compliance in case of accidental pollution

According to post-construction monitoring objectives are not necessary monitoring activities for the construction site.

2.1.2. Critical Point 02 monitoring, Epurașu Island area (Lebăda)

2.1.2.A. Air quality monitoring

The activities carried out during 01/28.02.2017 related to air quality monitoring in this critical point are those presented in Table 2.1.1.A.1.

According to post-construction monitoring objectives, in February 2017 for air quality monitoring in this main critical point CP02 is not provided a sampling campaign according to Table 1.2. In post-construction period (in this main critical point CP02 have been made the reception of the construction work) frequency is biannual (as Table 1.1).

Table 2.1.2.A.2 presents the number of air samples taken/measurements "in situ" conducted during 01-28 February 2017.

Table **2.1.2.A.1. Air samples repartition**

Type of Critical Point	Critical Point (CP)	Samples collected for laboratory analysis	Number of "in situ" measurements
Main	02	6	6

For each sampling point, have been determined geographical coordinates. Samples were coded and labeled according to the encoding instructions. Also, for each sample/measurement, a bulletin has been completed, see Annex 6.2.1.

2.1.2.B. Noise monitoring

The activities carried out in reporting period, regarding noise level monitoring, in this critical point are those presented in Table 2.1.1.B.1.

According to post-construction monitoring objectives, in February 2017 for noise level monitoring in this main critical point CP 02 is provided a measurements campaign as Table 1.2. In post-construction period (in this main critical point CP02 have been made the reception of the construction work) frequency is biannual (as Table 1.1).

In this campaign for noise level monitoring, measurements were made acoording to Table 2.1.2.B.1. below.

Table 2.1.2.B.1. Noise level monitoring

Type of Critical Point	Critical Point (CP)	No. of measurements	
		zero naval traffic	naval traffic
Main	02	6	0

On Epuraşu Island were made 2 out of 6 measurements. Another 2 measurements were performed on Danube right bank and the same number on Danube left bank.

For each sampling point were established geographic coordinates, then transcalculated in STEREO'70 projection system. The measurements were coded and labelled according to the encoding instructions. Also, for each measurement a bulletin for noise level was completed, see Annex 6.2.2.

2.1.2.C. Soil quality monitoring

The activities carried out in reporting period, regarding soil quality monitoring, for this Critical Point are those presented in Table 2.1.1.C.1.

In this period have not been made monitoring activities for soil.

2.1.2.D. Hydromorphological monitoring

In February 2017 have not been made field campaigns for hydromorphological monitoring due to unfavorable hydro-meteorological conditions.

Activities have been conducted for data processing from the measurements campaigns in previous months.

2.1.2.E. Water and sediments monitoring

Activities performed during this reporting period, regarding water and sediment quality monitoring, reported to this critical point are those presented in Table 2.1.1.E.1.

In this period have not been made sampling activities for water and sediments.

2.1.2.F. Aquatic flora and fauna monitoring

In reporting period no sampling have been made.

2.1.2.F.is. Sturgeons and barbell migration monitoring

In February, the monitoring team carried out the data processing and interpretation regarding sturgeons' migration during May - August 2016 and participated to elaboration of Interim Report 15. Due to the frost, there were no monitoring activities for the migration of sturgeons along the Danube. The monitoring equipment was prepared for the moment when the ice will melt and the fieldwork will be resumed.

2.1.2.F.i. Other fish species monitoring

In February 2017 are not provided any monitoring activities for fish species other than sturgeons.

2.1.2.G. Terrestrial flora and fauna monitoring

2.1.2.G.1 Terrestrial flora

In this period have not been made monitoring activities for terrestrial flora.

2.1.2.G.2 Terrestrial fauna/ Avifauna

In February 2017 have not been made monitoring activities for avifauna.

2.1.2.H. Natura 2000 sites monitoring

In February 2017 have not been made monitoring activities for Natura 2000 sites.

2.1.2.I. Work site activities monitoring and intervention plan compliance in case of accidental pollution

Due to completion of hydrotechnical construction, has not been necessary the construction site activity monitoring. Works reception have been made in November 26th, 2015.

2.1.3. Critical point 10 monitoring, Caleia Branch (Ostrovu Lupu)

2.1.3.A. Air quality monitoring

The activities carried out during 01/28.02.2017, regarding air quality monitoring, in this critical point are those presented in Table 2.1.1.A.1.

For main critical point CP10, in February 2017 have been made monitoring activities for air quality, as a post-construction period (in this main critical point CP10 have been made the reception of the construction work) frequency is biannual (as Table 1.1).

Table 2.1.3.A.2 presents the number of air samples taken/measurements "in situ" conducted during 01-28 February 2017.

Table 2.1.3.A.1. Air samples repartition

Type of Critical Point	Critical Point (CP)	Samples collected for laboratory analysis	Number of "in situ" measurements
Main	10	6	6

For each sampling point, have been determined geographical coordinates. Samples were coded and labeled according to the encoding instructions. Also, for each sample/measurement, a bulletin has been completed, see Annex 6.2.1.

2.1.3.B. Noise monitoring

The activities carried out during reporting period, related to noise level monitoring, related to this critical point are those presented in Table 2.1.1.B.1.

For main critical point CP10, in February 2017 have not been made monitoring activities for noise level, as a post-construction period (in this main critical point CP10 have been made the reception of the construction work) frequency is biannual (as Table 1.1).

In this monitoring campaign for noise level were performed measurements, as presented in Table 2.1.3.B.1. below.

Table 2.1.3.B.1. Noise level monitoring

Type of Critical Point	Critical Point (CP)	No. of measurements	
		zero naval traffic	naval traffic
Main	10	6	0

Have been made 6 measurements for noise level in critical point CP10, during this period. Out of that 2 measurements were performed on Ostrovul Lupu, another 2 measurements on Danube's left bank and the same number of measurements on Danube's right bank.

For each sampling point were established geographic coordinates, then transcalculated in STEREO'70 projection system. The measurements were coded and labelled according to the encoding instructions. Also, for each measurement a bulletin for noise level was completed, see Annex 6.2.2.

2.1.3.C. Soil quality monitoring

The activities carried out during reporting period, regarding soil quality monitoring, in this critical point are summarized in Table 2.1.1.C.1.

In this period have not been made sampling activities for soil.

2.1.3.D. Hydrophological monitoring

In February 2017 have not been made field campaigns for hydromorphological monitoring due to unfavorable hydro-meteorological conditions.

Processing activities have been conducted for data from the measurements campaigns in previous months.

2.1.3.E. Water and sediments quality monitoring

The activities carried out in reporting period related to water and sediments quality in this critical point are those presented in Table 2.1.1.E.1.

In this period have not been made sampling activities for water and sediments.

2.1.3.F. Aquatic flora and fauna monitoring

In reporting period no sampling have been made.

2.1.3.F.is. Sturgeons and barbell migration monitoring

In February, the monitoring team carried out the data processing and interpretation regarding sturgeons' migration during May - August 2016 and participated to elaboration of Interim Report 15. Due to the frost, there were no monitoring activities for the migration of sturgeons along the Danube. The monitoring equipment was prepared for the moment when the ice will melt and the fieldwork will be resumed.

2.1.3.F.i. Other fish species monitoring

In February 2017 are not provided any monitoring activities for other fish species.

2.1.3.G. Terrestrial flora and fauna monitoring

2.1.3.G.1 Terrestrial flora

In this period have not been made monitoring activities for terrestrial flora.

2.1.3.G.2 Terrestrial fauna/ Avifauna

In February 2017 have not been made monitoring activities for avifauna.

2.1.3.H. Natura 2000 sites monitoring

In February 2017 have not been made monitoring activities for Natura 2000 sites.

2.1.3.I. Work site activities monitoring and intervention plan compliance in case of accidental pollution

Due to completion of hydrotechical works has not been necessary the building site activity monitoring. Works reception was carried out on August 1st, 2014.

2.1.4. Monitoring in the critical points 03÷07

2.1.4.1. Monitoring in CP 03 (upstream and downstream Seica)

2.1.4.1.A. Air quality monitoring

During 01/28.02.2017, have not been conducted any activities regarding air quality monitoring, for this secondary critical points (CP 03A and CP 03B).

2.1.4.1.B. Noise level monitoring

During 01/28.02.2017, have not been made activities for noise level monitoring, reported for these secondary critical points (CP 03A and CP 03B).

2.1.4.1.C. Soil quality monitoring

Activities performed during this reporting period, regarding soil quality monitoring, related to this critical point are those presented in Table 2.1.1.C.1.

In this period no soil samplings have been made.

2.1.4.1.D. Hydromorphological monitoring

No activities regarding hydromorphological monitoring during this period.

2.1.4.1.E. Water and sediments quality monitoring

The activities carried out during reporting period, regarding water and sediments quality, related to this critical point are those presented in Table 2.1.1.E.1.

During this period have not been made water and sediments sampling.

2.1.4.1.F. Aquatic flora and fauna monitoring

In reporting period no sampling have been made.

2.1.4.1.F.is. Sturgeons and barbell migration monitoring

In February, the monitoring team carried out the data processing and interpretation regarding sturgeons' migration during May - August 2016 and participated to elaboration of Interim Report 15. Due to the frost, there were no monitoring activities for the migration of sturgeons along the Danube. The monitoring equipment was prepared for the moment when the ice will melt and the fieldwork will be resumed.

2.1.4.1.F.i. Other fish species monitoring

In February 2017 are not provided monitoring activities for fish species, other than sturgeons.

2.1.4.1.G. Terrestrial flora and fauna monitoring

2.1.4.1.G.1 Terrestrial flora

In this period have not been made monitoring activities for terrestrial flora.

2.1.4.1.G.2 Terrestrial fauna / Avifauna

In February have not been made monitoring activities for avifauna.

2.1.4.1.H. Natura 2000 sites monitoring

In February have not been made monitoring activities for Natura 2000 sites.

2.1.4.1.I. Work site activities monitoring and intervention plan compliance in case of accidental pollution

Because the hydrotechnical works have not started, was not necessary the monitoring of construction site activity.

2.1.4.2. Monitoring in CP04/Ceacâru/Fermecatu

2.1.4.2.A. Air quality monitoring

During 01/28.02.2017, have not been made activities for air quality monitoring, reported for these secondary critical points (CP 04A and CP 04B).

2.1.4.2.B. Noise level monitoring

During 01/28.02.2017, have not been made activities for noise level monitoring, reported for these secondary critical points((CP 04A and CP 04B).

2.1.4.2.C. Soil quality monitoring

The activities carried out during reporting period regarding soil quality monitoring in this critical point are summarized in Table 2.1.1.C.1.

In this period soil samples have not been collected.

2.1.4.2.D. Hydromorphological monitoring

No activities regarding hydromorphological monitoring during this period.

2.1.4.2.E. Water and sediments quality monitoring

The activities carried out during reporting period, regarding water and sediments quality, related to this critical point are those presented in Table 2.1.1.E.1.

During this period have not been made water and sediments sampling.

2.1.4.2.F. Aquatic flora and fauna monitoring

In reported period no sampling have been made.

2.1.4.2.F.is. Sturgeons and barbell migration monitoring

In February, the monitoring team carried out the data processing and interpretation regarding sturgeons' migration during May - August 2016 and participated to elaboration of Interim Report 15. Due to the frost, there were no monitoring activities for the migration of sturgeons along the Danube. The monitoring equipment was prepared for the moment when the ice will melt and the fieldwork will be resumed.

2.1.4.2.F.i. Other fish species monitoring

In February 2017 are not provided any monitoring activities for other fish species.

2.1.4.2.G. Terrestrial flora and fauna monitoring

2.1.4.2.G.1 Terrestrial flora

During this period have not been made monitoring activities for terrestrial flora.

2.1.4.2.G.2 Terrestrial fauna/Avifauna

In February 2017 have not been made monitoring activities for avifauna.

2.1.4.2.H. Natura 2000 monitoring sites

In February 2017 have not been made monitoring activities for Natura 2000 sites.

2.1.4.2.I. Monitoring the building site activities and the compliance with the intervention plan in case of accidental pollution

The monitoring of the construction site was not necessary because the hydrotechnical works have not been started.

2.1.4.3. Monitoring in CP 07 / Fasolele monitoring

2.1.4.3.A. Air quality monitoring

During 01/28.02.2017, have not been made activities regarding air quality monitoring, in this secondary critical point.

2.1.4.3.B. Noise level monitoring

During 01/28.02.2017, have not been made activities regarding noise level monitoring, in this secondary critical point.

2.1.4.3.C. Soil quality monitoring

Activities performed during reporting period, regarding soil quality monitoring, in this critical point, were summarized in Table 2.1.1.C.1.

In this period no soil sampling have been made.

2.1.4.3.D. Hydromorphological monitoring

No activities regarding hydromorphological monitoring during this period.

2.1.4.3.E. Water and sediments quality monitoring

Activities performed during reporting period, regarding water and sediments quality, related to this critical point are those presented in Table 2.1.1.E.1.

During this period have not been made water and sediments sampling.

2.1.4.3.F. Aquatic flora and fauna monitoring

In reported period no sampling have been made.

2.1.4.3.F.is. Sturgeons and barbell migration monitoring

In February, the monitoring team carried out the data processing and interpretation regarding sturgeons' migration during May - August 2016 and participated to elaboration of Interim Report 15. Due to the frost, there were no monitoring activities for the migration of sturgeons along the Danube. The monitoring equipment was prepared for the moment when the ice will melt and the fieldwork will be resumed.

2.1.4.3.F.i. Other fish species monitoring

In February are not provided any monitoring activities for other fish species.

2.1.4.3.G. Terrestrial flora and fauna monitoring

2.1.4.3.G.1 Terrestrial flora

During this period have not been made activities for terrestrial flora monitoring.

2.1.4.3.G.2 Terrestrial fauna / Avifauna

In February have not been made monitoring activities for avifauna.

2.1.4.3.H. Natura 2000 sites monitoring

In February have not been made monitoring activities for Natura 2000 sites.

2.1.4.3.I. Work site activities monitoring and intervention compliance plan in case of accidental pollution

Because the hydrotechnical works not started, was not necessary the construction site monitoring.

2.2. Stage of 3D numerical modeling

In February 2017, INCDPM specialists have processed bathymetric data from previous months, in main critical points CP01, CP02 and CP10 areas. Thus, for this activity have been performed:

- bathymetric measurements processing for morphology and for sections profiling;
- bathymetric measurements processing for velocity and flow rates;
- longitudinal bathymetric measurements processing for bottom sill geometry determination.

3. MEMBERS OF THE EXPERTS TEAM

3.1. Members of the experts' team

Team's members who carried out activities in the reporting period and the number of days worked by each expert are schematically presented in Table 3.1.

Table 3.1. Members of the experts' team

No.	Experts	Names of experts	Number of working days post-construction
1.	Project manager	Deák György	5
2.	Chemist 1	Ghiță Gina	3
3.	Chemist 2	Borș Adriana	5
4.	Ichthyologist 1	Cristea Victor	5
5.	Ichthyologist 2	Falka Istvan	0
6.	Hydrology	Poteraș George	8
7.	Hydraulic sedimentology	Ungureanu Gh Viorel	5
8.	Phytoplankton and aquatic macrophytes	Marinescu Florica	0
9.	Zooplankton	Adina Popescu	0
10.	Terrestrial invertebrates	Șerban Cecilia	0
11.	Aquatic macroinvertebrates	Florea Luiza	0
12.	Terrestrial flora and vegetation	Frink Jozsef Pal	0
13.	Ornithologist 1	Jozsef Szabo	0
14.	Ecologist 1	Ambrus Laszlo	2
15.	Ecologist 2	Zaharia Tania	0
16.	Assessor	Tudor Marian	6

3.2. Experts' tasks during the project

The tasks accomplished by experts on each phase/activity/critical point are presented in Experts' Activity Reports (Annex 6.3).

3.3. Planning the activities for the next month on each phase/activity/critical point

The monitoring activities for the period 01–31 March 2017 are synthetically presented in the table 3.4.

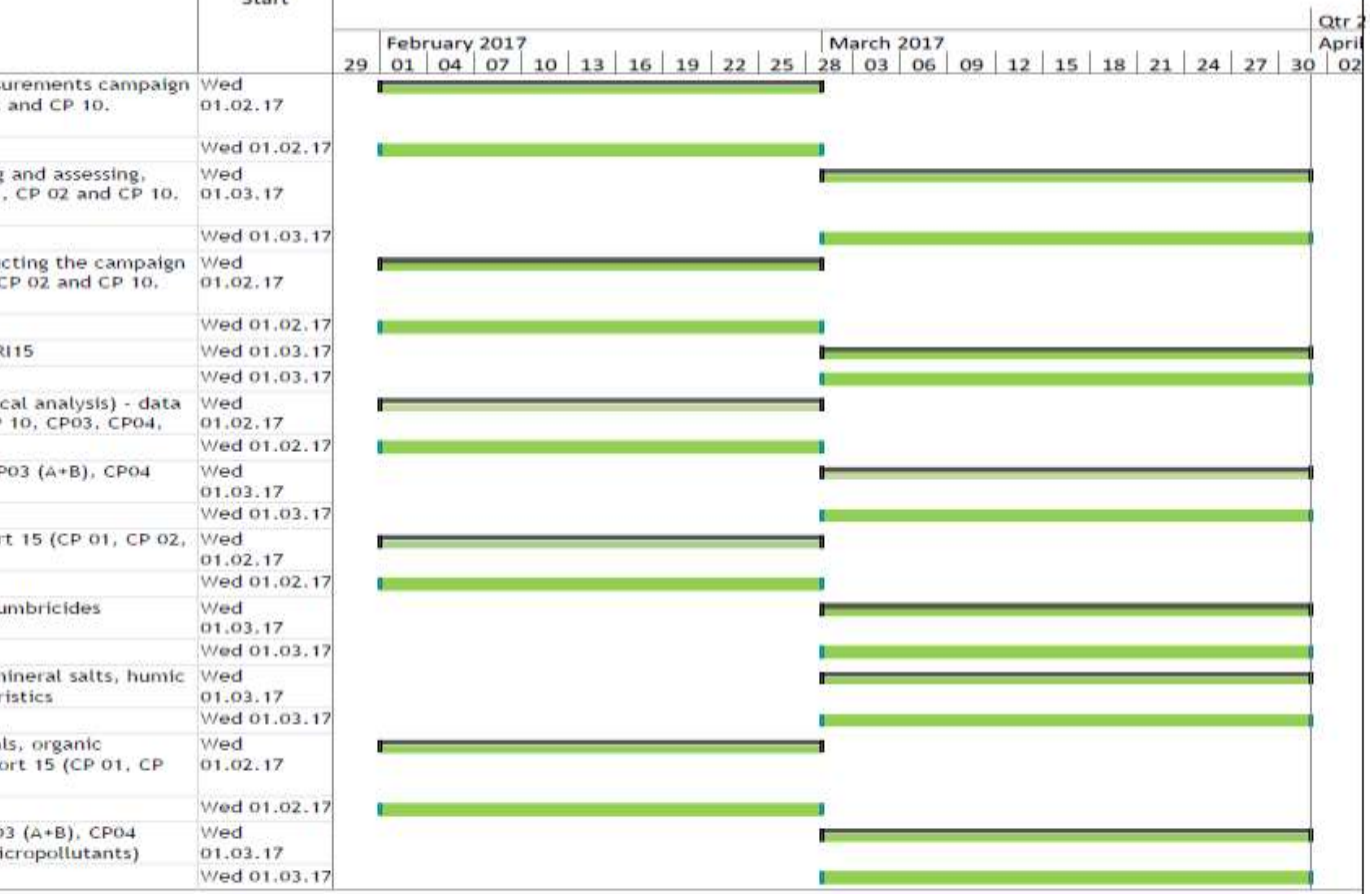
Table 3.4. Activities for the period of 01.03-31.03.2017

No.	ACTIVITIES	Critical points							
		Main critical points			Secondary critical points				
		01	02	10	03A	03B	04A	04B	07
1.	Further campaign of measurements, field observations (where is necessary)	YES	YES	YES	YES	YES	YES	YES	YES
2.	Processing and interpretation of field and laboratory data (where is necessary)	YES	YES	YES	YES	YES	YES	YES	YES
3.	Monthly report preparation	YES	YES	YES	YES	YES	YES	YES	YES

4. TIME SCHEDULE AND BUDGET PROJECT

4.1. Time schedule for project implementation

ID	Task Name	Start
1	Air monitoring: Conducting the sampling and measurements campaign for air quality, in main critical points CP 01, CP 02 and CP 10. Contribution to Interim Report RI15	Wed 01.02.17
2	70th Month	Wed 01.02.17
3	Air monitoring: Data and measurements processing and assessing, related to air quality, in main critical points CP 01, CP 02 and CP 10. Contribution to Interim Report RI15	Wed 01.03.17
4	71st Month	Wed 01.03.17
5	Noise monitoring (zero and intense traffic): Conducting the campaign on noise monitoring in main critical points CP 01, CP 02 and CP 10. Contribution to Interim Report RI15	Wed 01.02.17
6	70th Month	Wed 01.02.17
7	Noise monitoring: Contribution to Interim Report RI15	Wed 01.03.17
8	71st Month	Wed 01.03.17
9	Water quality monitoring - Water (physical-chemical analysis) - data processing for Interim Report 15 (CP 01, CP 02, CP 10, CP03, CP04,	Wed 01.02.17
10	70th Month	Wed 01.02.17
11	Water quality monitoring - CP 01, CP 02, CP 10, CP03 (A+B), CP04 (A+B), CP07 - Water (physical-chemical analysis)	Wed 01.03.17
12	71st Month	Wed 01.03.17
13	Soil monitoring - Data processing for Interim Report 15 (CP 01, CP 02, CP 10, CP03, CP04, CP07)	Wed 01.02.17
14	70th Month	Wed 01.02.17
15	Soil monitoring - CP03 (A+B), CP04 (A+B), CP07 - lumbricides presence, abundance	Wed 01.03.17
16	71st Month	Wed 01.03.17
17	Soil monitoring - CP03 (A+B), CP04 (A+B), CP07 - mineral salts, humic acids, organic matter, physical-chemical characteristics	Wed 01.03.17
18	71st Month	Wed 01.03.17
19	Water quality monitoring - Sediments (heavy metals, organic micropollutants) - data processing for Interim Report 15 (CP 01, CP 02, CP 10, CP03, CP04, CP07)	Wed 01.02.17
20	70th Month	Wed 01.02.17
21	Water quality monitoring CP 01, CP 02, CP 10, CP03 (A+B), CP04 (A+B), CP07 - Sediments (heavy metals, organic micropollutants)	Wed 01.03.17
22	71st Month	Wed 01.03.17



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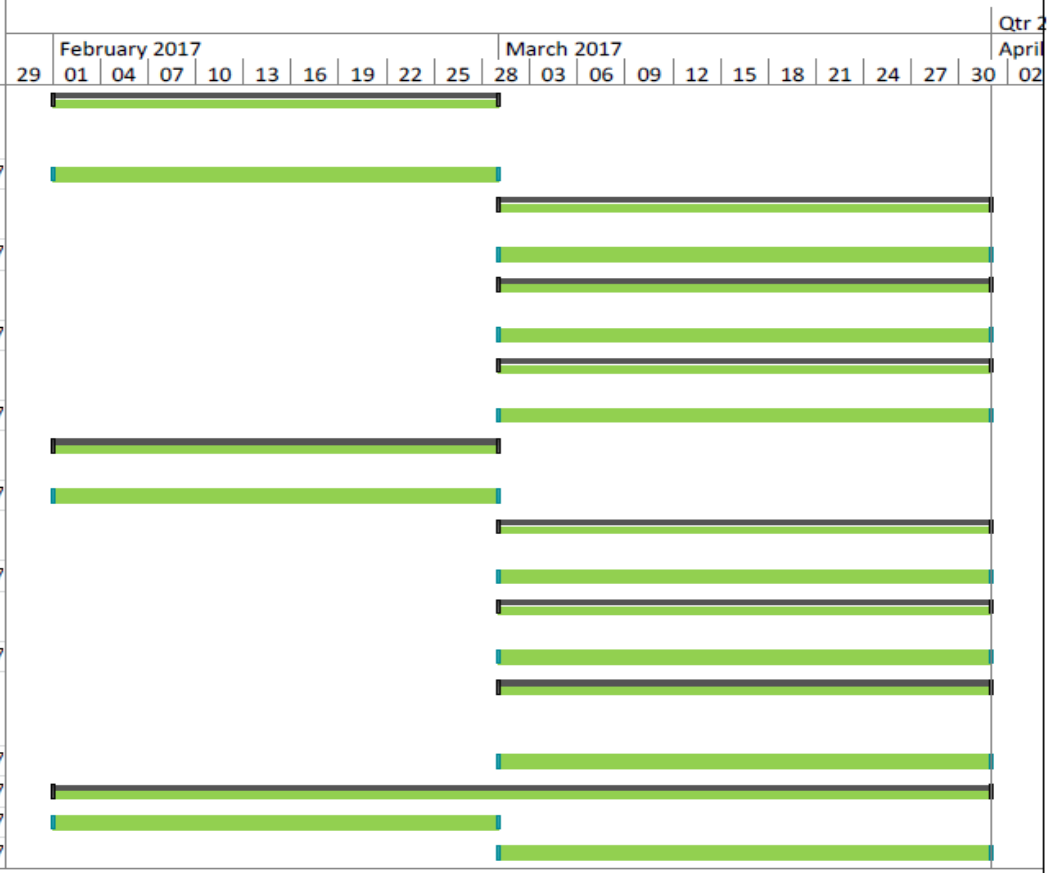
ID	Task Name	Start
23	Hydromorphological monitoring in CP 01/CP 02/CP 10 - processing and interpretation for the data from hydromorphological monitoring campaigns in previous period	Wed 01.02.17
24	70th Month	Wed 01.02.17
25	Hydromorphological monitoring in CP 01/CP 02/CP 10 - Single-beam measurements - sections profiling	Wed 01.03.17
26	71st Month	Wed 01.03.17
27	Hydromorphological monitoring in CP 01/CP 02/CP 10 - Flow rate monitoring (volume, velocity, level)	Wed 01.03.17
28	71st Month	Wed 01.03.17
29	Hydromorphological monitoring in CP 01/CP 02/CP 10 - level and turbidity measurements in hydrometric automatic station belonging to	Wed 01.03.17
30	71st Month	Wed 01.03.17
31	Ichtyofauna biodiversity monitoring - CP 01/02/10/03/04/CP07 - Interim Report 15 drafting	Wed 01.02.17
32	70th Month	Wed 01.02.17
33	Aquatic flora monitoring - CP 03A/03B/04A/04B/07 - Phytoplankton - sampling, composition, abundance, biomass	Wed 01.03.17
34	71st Month	Wed 01.03.17
35	Aquatic flora monitoring - CP 03A/03B/04A/04B/07 - Macrophytes - sampling, composition, abundance, biomass	Wed 01.03.17
36	71st Month	Wed 01.03.17
37	Aquatic fauna monitoring CP 01/02/10/03A/03B/04A/04B/07 - aquatic macroinvertebrates - sampling, composition, abundance, biomass, saprobic index	Wed 01.03.17
38	71st Month	Wed 01.03.17
39	Monthly reports	Wed 01.02.17
40	70th Month	Wed 01.02.17
41	71st Month	Wed 01.03.17



4.2. Budget and expenses incurred during the reporting period

Justifying calculation for 01 – 28 February 2017

I. EXPERTS EXPENSES				
No.	Experts	No. of working days	Fee (Euro on working day)	Maximum total value of the fees
		Post - Construction (36 monts)		
1	Project leader	5	240	1.200,00 EUR
2	Chemist 1	3	200	600,00 EUR
3	Chemist 2	0	200	0,00 EUR
4	Ichtyologist 1	5	330	1.650,00 EUR
5	Ichtyologist 2	0	200	0,00 EUR
6	Hydrology	8	200	1.600,00 EUR
7	Hydraulic- sedimentlogy	0	200	0,00 EUR
8	Aquatic phytoplankton and macropytes	0	130	0,00 EUR
9	Zooplankton	0	130	0,00 EUR
10	Terrestrial invertebrates	0	125	0,00 EUR
11	Aquatic macroinvertebrates	0	125	0,00 EUR
12	Terrestrial flora and fauna	0	125	0,00 EUR
13	Ornithologist 1	0	200	0,00 EUR
14	Ecologist 1	2	140	280,00 EUR
15	Ecologist 2	0	140	0,00 EUR
16	Evaluator	6	330	1.980,00 EUR
SUBTOTAL EXPERTS' FEES				7.310,00 EUR
II EXPENSES with JUSTIFICATION				
1	Ichtyology- telemetry (sturgeons and barbel transmitters, batteries, expensis on stugeons' capturing)			0,00 EUR
2	Abiotic and biotic data for the establishment of the framework			
3	Analysis			0,00 EUR
SUBTOTAL EXPENSES with JUSTIFICATION				0,00 EUR
III. MATHEMTICAL MODELING				
1	Softaware acquisiton+hardware+ necessary licenses			0,00 EUR
2	Acquisition of bathymetric data, necessary for the mathematical modeling			0,00 EUR
3	Training of 2 specialists in numerical modeling			0,00 EUR
4	Fee for the numerical modeling expert			0,00 EUR
5	3D numerical model and implementation in 3D monitoring			0,00 EUR
SUBTOTAL NUMERICAL MODELING				0,00 EUR
TOTAL without V.A.T.				7.310,00 EUR

4.3. Budget and expenses for the next period

Estimated calculation for 01 – 31 March 2017

I. EXPERTS EXPENSES				
No.	Experts	No. of working days Post - Construction (36 monts)	Fee (Euro on working day)	Maximum total value of the fees
1	Project leader	5	240	1.200,00 EUR
2	Chemist 1	5	200	1.000,00 EUR
3	Chemist 2	5	200	1.000,00 EUR
4	Ichtyologist 1	8	330	2.640,00 EUR
5	Ichtyologist 2	0	200	0,00 EUR
6	Hydrology	8	200	1.600,00 EUR
7	Hydraulic- sedimentlogy	10	200	2.000,00 EUR
8	Aquatic phytoplankton and macropytes	4	130	520,00 EUR
9	Zooplankton	0	130	0,00 EUR
10	Terrestrial invertebrates	3	125	375,00 EUR
11	Aquatic macroinvertebrates	3	125	375,00 EUR
12	Terrestrial flora and fauna	0	125	0,00 EUR
13	Ornithologist 1	0	200	0,00 EUR
14	Ecologist 1	2	140	280,00 EUR
15	Ecologist 2	0	140	0,00 EUR
16	Evaluator	6	330	1.980,00 EUR
SUBTOTAL EXPERTS' FEES				12.970,00 EUR
II EXPENSES with JUSTIFICATION				
1	Ichtyology- telemetry (sturgeons and barbel transmitters, batteries, expensis on stugeons' capturing)			10.000,00 EUR
2	Abiotic and biotic data for the establishment of the framework			
3	Analysis			10.000,00 EUR
SUBTOTAL EXPENSES with JUSTIFICATION				20.000,00 EUR
III. MATHEMTICAL MODELING				
1	Softaware acquisiton+hardware+ necessary licenses			0,00 EUR
2	Acquisition of bathymetric data, necessary for the mathematical modeling			50.000,00 EUR
3	Training of 2 specialists in numerical modeling			0,00 EUR
4	Fee for the numerical modeling expert			0,00 EUR
5	3D numerical model and implementation in 3D monitoring			0,00 EUR
SUBTOTAL NUMERICAL MODELING				50.000,00 EUR
TOTAL without V.A.T.				82.970,00 EUR

5. CONCLUSIONS, RECOMMENDATIONS, WARNINGS

5.1 This Monthly Report reflects monitoring activities from February 2017 related to post-construction period.

5.2 For the specific monitoring objectives within this phase, the Provider considered that the field and laboratory activities, logistics and infrastructure be sized so as to be according to the graphs and stipulations mentioned in the Specifications.

5.3 Taking into consideration the importance of the construction works that take place on Danube on the section between Calarasi and Braila, the Consortium recommends further actions on biodiversity monitoring, al least with the frequency similar to post-construction phase, up to completion of the project, in order to ensure an informational volume, with a high confidence level, to allow if necessary, the development of preventive solutions.

5.4 In February 2017, due to hydro-meteorological conditions, hydromorphological monitoring activity mainly based on processing the data from measurements campaigns in previous months, namely ADCP measurements (flow rates and velocities) in main critical points CP01, CP02 and CP10 areas, as well as from single-beam measurements for sections profiling in the 3 main critical points.

Under the influence of ice formations present on the monitored Danube sector, the flow rates in February 2017 were very low in the first part of the month, then increasing to average values compared to historical data for this period of the year.

6. ANNEXES

6.1 Relevant correspondence

6.2 Recording bulletins for sampling/measurements

6.2.1: AIR sampling recording bulletins

6.2.2: NOISE bulletins for field measurements

6.3 Experts' activity reports

6.4 Images of activities