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Project Activity 1.3

Report of the *Training course on the Ecological Status Classification System for the Assessment of Surface Water Bodies*

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ABBREVIATIONS

AM	Armenia
AZ	Azerbaijan
BY	Belarus
CWME	Country Water Management Expert
EC	European Commission
ESCS	Ecological Status Classification Scheme
EPIRBP	Environmental Protection of International River Basins Project (This Project)
EU	European Union
GE	Georgia
HM	Hydromorphology
HPP	Hydropower Plant
JFS	Joint Field Survey
(N)KE	(Non) Key Expert
MENR	Ministry of Ecology and Natural Resources
MEP	Maximum Ecological Potential
MoE	Ministry of Ecology
MNP	Ministry of Nature Protection
NEA	Georgian National Environmental Agency
RB	River Basin
RBMP	River Basin Management Plans
RBA	River Basin Analysis
SW	Surface waters
WB	Water body
WFD	EU Water Framework Directive

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1. INTRODUCTION

The purpose of this Report is to summarize the main topics and basic knowledge reviewed in the training carried out under activity 1.3 related with *Training course on the Ecological Status Classification System for the Assessment of Surface Water Bodies* for local experts and beneficiaries of 6 countries using the assessment of Ecological Status based on biological quality elements, physio-chemical parameters and hydromorphological quality elements.

Report includes information about the training held, as well as participants's reaction to the actual learning event and some input on actual learning acquired as a result of attending the training program. Information and feedback on the amount of knowledge transfer that took place from the classroom to the workplace, as well as, organizational impact will be given later, when all local experts will complete the questionnaire about the learning event.

Main objectives of the Training course on Ecological Status Classification process were increasing capacities of the respective national authorities for water body classification elements as required by the EU Water Framework Directive (WFD).

The specific training programme on ecological status assessment of surface water bodies (rivers) was done by Romina Álvarez- KE on Biology/Ecology and Peter Rončák – Senior Expert on Hydromorphology and Monitoring of EPIRB.

This course also included practical training in the Ecological Status Classification System (ESCS) organised specifically for the participants from the beneficiary institutions with data from the Kura River basins and from the Eastern Europe pilots results of 2015 JFS.

2. OBJECTIVES OF THE TRAINING

The following objectives were identified for the training course on ESCS:

- Define and explain the biological elements used in the EPIRB project as element of status classification in order to reflect the basin pressures and impacts.
- Explain the overall classification of the surface water bodies (rivers), according to the ESCS Guidance documents.
- Show the biological elements approach and the calculations: taxonomic description, main metrics, results for each pilot river basin and statistical analysis.
- Training on the use of the new guidance document using macroinvertebrates for the ESCS.

3. TIMELINE, LOCATION AND INSTITUTIONAL ARRANGEMENT

Training course was provided for all the regions in Chisinau, on 24th of November of 2015.

This course was organized for the beneficiary biological experts in each country and also the CWMs and other local beneficiaries that are responsible for the WFD-waterbody assessment and for the quality elements evaluation. The participant institutions were as following:

- Armenia – Ministry of Nature Protection, Environmental Impact Monitoring Centre; Ministry of Territorial Administration and Emergency Situations Armenian State Hydro-meteorological and Monitoring Service;
- Azerbaijan – Ministry of Ecology and Natural Resources, Environmental Monitoring Department and Baku State University, Sub-faculty of Invertebrate Zoology;
- Georgia – Department of Environmental Pollution Monitoring, NEA;
- Belarus – Ministry of Natural Resources and Environmental Protection, CRICUWR; SHS, Hydrobiological Monitoring Division
- Moldova – State Hydrometeorological Service (SHS); Center of Surface Water Quality Monitoring Center (CSWQM) and SHS, Informational Management Center.
- Ukraine – SHS, Central Geophysical Observatory and Carpathian National Nature Park;

Two national experts per country took part in the ESCS Training course, namely, at least one specialist in in Biology and/or Hydromorphology and/or Physico-chemistry, as well as CWMEs were presented in the team of national experts.

4. DISCUSSIONS AND TRAINING ACTIVITIES

During the first part of the training in the morning, some general presentations were projected in order to introduce the key concepts related with Ecological Status Classification and waterbody quality.

There were also two presentations related with the classification scheme proposed for each typology of the upper catchment (mountainous rivers).

A practical training took place in the second part of the day using data from field work from the KURA River basins (spring 2015) for Caucasus region countries and JFS III results for the Eastern Europe Countries.

5. CONCLUSIONS AND RECOMMENDATIONS

• Conclusions

All national experts demonstrated the interest to the topics of the training course and basic knowledge in the technical issue of the Ecological Status Classification process using the quality

elements. Some of the participants were inquiring the months before the training about how to estimate the ES and how to solve the doubts in each river basin.

In the Annex 7.5 the results from the Questionnaire related with the contents and the quality of the training are presented. In the majority of the answers received after analysing the results of the questions, the participants considered interesting and important for their knowledge and their tasks in the project the training with the materials and practical exercises.

Related with the process of preparing the ESCS documents, there are some gaps in the ESCS process related with the lack of enough information of the area that will be solved in the future with more monitoring processes. This training is the first step for this process to reach the complete ESCS calculation for all the pilot river basins.

The practical works delivered using their own data showed the capability of national experts to evaluate the ecological status in waterbodies and understand the difficulties of the process and the need of the multiple steps and the importance of quality assurance in the process since the works before going to the field till the report process after the laboratory analysis.

Participants have used the knowledge and experience from the training course in their pilot river basins after training course.

Participants expressed need to organize such training courses also with the future data delineation of the surface water bodies and for other biological elements assessment (macrophytes, phytobenthos and fish).

- **Recommendations**

All the experts and participants of the training involved in the project in each country need to understand, review and check all the materials related with ESCS.

This requirement is basic in order to understand the process of classification for RBMPs and for having the feedback of the materials based in the local experience and the knowledge of the typologies and the pressure and impacts.

The project experts will be available for answering all the doubts and to give all the support needed.

Also the materials and any other updated ESCS will be always available for the participants.

6. PICTURES OF THE TRAINING



Photo 1: National experts and ESCS team experts in the meeting



Photo 2: National experts from Belarus and Azerbaijan participating in the meeting



Photo 3: National experts from Ukraine participating in the meeting



Photo 4: National experts from Armenia and Georgia participating in the meeting



Photo 5: National experts from Moldova participating in the meeting



Photo 6: ESCS experts Peter Rončák and Romina Álvarez in the meeting



Photo 7: ESCS experts participating in the meeting: Timothy Turner, Zurab Jincharadze, Bill Parr and Paul Buijs



Photo 8: All the participants in the meeting room in Chisinau

7. ANNEXES

7.1. ANNEX I: LIST OF PARTICIPANTS

Ecological Status Classification System TrainingConference-hall "Polivalent" (1st floor), Labor Institute, Chisinau, Republic of Moldova**24 November 2015****List of Participants**

#	Name	Organization	Position	Country/City	E-mail
Representatives of the Beneficiary Institutions (Moldova)					
1	Ms Natalia Zgîrcu	SHS, Environmental Quality Monitoring Dpt.	Department Deputy Chief	Moldova/ Chisinau	nataliaracovet1901@yahoo.com
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4	Ms Margareta Borș	SHS, CSWQM	Hydrobiologist	Moldova/ Chisinau	margareta.bors@mail.ru
5	Ms Victoria Luchianov	SHS, CSWQM	Hydrobiologist	Moldova/ Chisinau	andries65@mail.ru
6	Ms Nadejda Gîstemulte	SHS, CSWQM	Hydrochemist	Moldova/ Chisinau	nadiushanadine@mail.ru
7	Ms Dinu Prepelita	SHS, CSWQM	Hydrologist	Moldova/ Chisinau	prepelitad@mail.ru
8	Ms Tatiana Țurcan	SHS, Informational Management Center	Manager	Moldova/ Chisinau	monitoring_ecologic@meteo.gov.md

#	Name	Organization	Position	Country/City	E-mail
Representatives of the Beneficiary Institutions (Ukraine)					
9	Ms Tetiana Kuznietsova	SHS, Central Geophysical Observatory	Head of Hydrobiological Laboratory	Ukraine/ Kyiv	waterbio@i.ua
10	Ms Marta Korchemlyuk	Carpathian National Nature Park	Head of Laboratory for Analytical Control and Monitoring	Ukraine/ Yaremche	martakor@yahoo.com
Representatives of the Beneficiary Institutions (Georgia)					
11	Ms Marine Arabidze	Department of Environmental Pollution Monitoring, NEA	Head of Department	Georgia/ Tbilisi	marabidze@environment.ge, m.arabidze@yahoo.com
12	Mr Irakli Kordzaia	Department of Environmental Pollution Monitoring, NEA	Chief Specilist/Hydrobiologist	Georgia/ Tbilisi	iraklikrdz414@gmail.com
Representatives of the Beneficiary Institutions (Azerbaijan)					
13	Ms Gunel Mammadli	Ministry of Ecology and Natural Resources, Environmental Monitoring Department	Leading Specialist	Azerbaijan/ Baku	mamedligunel@gmail.com
14	Mr Saleh Aliyev	Baku State University, Sub-faculty of Invertebrate Zoology	Docent	Azerbaijan/ Baku	alisaleh@rambler.ru
Representatives of the Beneficiary Institutions (Armenia)					
15	Ms Gayane Shahnazaryan	Ministry of Nature Protection, Environmental Impact Monitoring CenterCentre	Deputy Director of Center	Armenia/ Yerevan	gayane_shahnazaryan@yahoo.com
		Ministry of Territorial	Head of Hydrography		

#	Name	Organization	Position	Country/City	E-mail
16	Mr. Edgar Misakyan	Administration and Emergency Situations, Armenian State Hydro-meteorological and Monitoring Service	and Hydrometry Division of the Hydrological Centre	Armenia/ Yerevan	e.misakyan@mail.ru
Representatives of the Beneficiary Institutions (Belarus)					
17	Ms Lubov Hertman	Ministry of Natural Resources and Environmental Protection, CRICUWR	Senior Monitoring Expert/Senior Researcher	Belarus/ Minsk	lubov.hertman@yandex.ru
18	Mr Ihar Tsishchykau	SHS, Hydrobiological Monitoring Division	Head of Division	Belarus/ Minsk	genti@mail.ru
EPIRB Project/Human Dynamics Consortium					
19	Mr Timothy Turner	HD/EPIRB	Team Leader, KE1	Ukraine/ Kiev	trturner@btinternet.com
20	Mr Zurab Jincharadze	HD/EPIRB	Deputy Team Leader, KE2	Georgia/ Tbilisi	zurab.jincharadze@blacksea-riverbasins.net
21	Ms Romina Alvarez	HD/EPIRB	Ecology/Biology Expert, KE3	Spain/ Madrid	ralvareztroncoso@gmail.com
22	Mr Paul Buijs	HD/EPIRB	Chemical Status Monitoring Expert, NKE	Netherlands/ Soest	buijswater@gmail.com
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24	Mr William Parr	HD/EPIRB	Ecological and Biological Classification Systems compliant with WFD Expert, NKE	Great Britain/ Edinburgh	dr.bill.parr@btinternet.com
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7.2. ANNEX II: AGENDA OF THE TRAINING

Chisinau, Moldova 24 November 2015

- 9.00-11.00 General introduction of the day in theoretical classes. Biological/ecological monitoring programs and classification systems:

Introduction on requirements of EU WFD on ESCS (10 min) - Romina **Steps to come to ESCS: Romina and Peter**

- **Video on sampling macroinvertebrates, HMWE and chemical parameters (40 min); Peter**
- **Presentation on the macroinvertebrates taxa identification (microscope and one sample will be needed) (40 min); Romina**
- **Calculation of metrics via ASTERICS (10 min). Peter**

The training will start with general information about the Guidance document for surface water and the process of Classification Scheme.

The status of each surface water body is judged using separate 'Ecological classification' and 'Chemical classification' systems. The overall status of the water body will be determined by whichever of these is the poorer. To achieve 'good status' overall, a water body must achieve both good ecological and good chemical status.

There are four quality elements to be considered for each surface water category, in order to assess its ecological status (or ecological potential); they are as follows:

- biological quality elements
- general conditions (physico chemical)
- specific relevant pollutants
- hydromorphological elements - dealing with water flows, physical characteristics, etc.

- 11.00-11.30 Coffee break
- 11.30-13.00 The Classification process will be explain and the results achieve during 2015 in the JFS in all the pilot basins will be used. Each participant will received a pack of data in order to recreate the process for doing the classification exercise.

Principles used in the development of the ESCS for the pilots (two ppts, one for Kura region pilots (Peter) and one for EPIRB pilots (Romina). Those ppts will also include the classifications schemes developed for the pilots. (60 min)

One presentation related to importance of the supporting quality elements (General conditions and other specific pollutants and HMQE. (15 min) Peter

- 13.00-14.30 Lunch break
- 14.30-16.00 General review of the results achieved and possible explanations

Eionet and other EU networks and their relation with the dataset of the EPIRB project Romina and Peter

Practical exercise in each groups to make classification of the pilot river basin (data from spring JFS for Kura region and summer for EPIRB pilots will be used). Participants will be sub-divided based on the pilots and the exercise will be supervised by the EPIRB project experts. Results of exercise will be presented as map for each pilot (maps of pilots are needed and colour markers (blue, green, yellow brown and red). (120 min) Peter and Romina

- 16.00-16.30 Coffee break

- 16.30-17.30

(Continuation) Practical exercise in each groups to make classification of the pilot river basin (data from spring JFS for Kura region and summer for EPIRB pilots will be used). Participants will be sub-divided based on the pilots and the exercise will be supervised by the EPIRB project experts. Results of exercise will be presented as map for each pilot (maps of pilots are needed and colour markers (blue, green, yellow brown and red) Peter and Romina

- 17.30-18.15

Summarize of the training, other examples and experiences in different basins and other waterbodies.
Doubts and questions.

- 19.00 Dinner at venue

7.3. ANNEX III: TRAINING MATERIALS

Equipment/Item
<p>Projector, laptop (the national teams are required to have at least one for each),</p>
<ul style="list-style-type: none">- Data from the JFS Kura project and JFS III results- ESCS report including the annexes and bibliography
<ul style="list-style-type: none">- Guidance document n°7 (WFD): Monitoring under the Water Framework Directive https://circabc.europa.eu/sd/a/63f7715f-0f45-4955-b7cb-58ca305e42a8/Guidance%20No%207%20-%20Monitoring%20(WG%202.7).pdf- Guidance document n°13 (WFD): Overall approach to the classification of ecological status and ecological potential (https://circabc.europa.eu/sd/a/06480e87-27a6-41e6-b165-0581c2b046ad/Guidance%20No%2013%20-%20Classification%20of%20Ecological%20Status%20(WG%20A).pdf)- EPIRB Instruction document for macroinvertebrates sampling (2015).- EPIRB Instruction document for Ecological Status Classification (2015).- UNE - EN 14996: 2007 - Water quality - Guidance on assuring the quality of biological and ecological assessments in the aquatic environment.
<p><u>SCIENTIFIC PAPERS:</u></p> <ul style="list-style-type: none">- Water Framework Directive 2000. Directive of the European Parliament and of the Council 2000/60/EC Establishing a Framework of Community Action in the Field of Water Policy.- Wright, J.F.; Sutcliffe, D.W.; & M.T. Furse (eds.) 2000. Assessing the biological quality of fresh waters: RIVPACS and other techniques. Freshwater Biological Association, UK

7.4. ANNEX IV: QUESTIONNAIRE FOR THE PARTICIPANTS

Evaluation Form

Training on Ecological Status Classification System (ESCS)

24 November 2015, Chisinau, Moldova

Instructions to Participant:

Thank you for participating in this Ecological Status Classification System training workshop. In this feedback form, there are no WRONG or RIGHT answers. Please respond to ALL the questions below to help us to improve the training materials, and the conduct of the ESCS training.

Trainee name _____

For each item below, please circle only a single appropriate response.				
		RESPONSE		
		NOT AT ALL	SOMEWHAT	VERY MUCH
1.	The ESCS training was well organized.	0	1	2
2.	The ESCS training sessions were relevant to expected needs.	0	1	2
3.	The presenters were well prepared.	0	1	2
4.	The presenters were receptive to participant comments and questions.	0	1	2
5.	The exercise helped me to learn the ESCS concept.	0	1	2
6.	There was enough time to cover all materials.	0	1	2
7.	The ESCS training enhanced my knowledge and skills in ecological status classification, classification, care and control.	0	1	2
8.	I expect to use the knowledge and skills gained from this ESCS training in my work.	0	1	2
9.	The ESCS training facilities were adequate.	0	1	2

1. What did you like most about this training?

2. Do you feel you that what you have leant during the training could be reproduced with your available data?

3. What information/topics should be added to this ESCS training?

4. What additional informatio/topics would be of interest for you in futute trainings?

5. The technical level of the material covered in the ESCS training was: (circle one).

Too basic

Just right

Too difficult/too technical

6. How could the ESCS training be improved?

7. Please share other comments or expand on previous responses here:

Thank you for completing this form!

7.5. ANNEX V: PARTICIPANTS ANSWERS FOR THE QUESTIONNAIRE

Results of ESCS training evaluation

24 November 2015, Chisinau, Moldova

Total number of collected evaluation forms – 14.

		Number of RESPONSES		
		NOT AT ALL "0"	SOMEWHAT "1"	VERY MUCH "2"
1.	The ESCS training was well organized.	-	-	14
2.	The ESCS training sessions were relevant to expected needs.	-	1	13
3.	The presenters were well prepared.	-	1	13
4.	The presenters were receptive to participant comments and questions.	-	-	14
5.	The exercise helped me to learn the ESCS concept.	-	5	9
6.	There was enough time to cover all materials.	-	5	9
7.	The ESCS training enhanced my knowledge and skills in ecological status classification, classification, care and control.	-	1	13
8.	I expect to use the knowledge and skills gained from this ESCS training in my work.	-	2	12
9.	The ESCS training facilities were adequate.	-	2	12

1. What did you like most about this training?

- Quality of materials and attention to participants.
- All presentations.
- Classification System.
- Video materials. Presentations and materials were prepared very well.
- Practical use of classification scheme and classification of water quality.
- Presentations. Information was set out well.
- I liked to work in the group. Practical excesssises were very helphul.
- Practical part.
- Opportunity to learn how to determine the ecological status.

2. Do you feel you that what you have leant during the training could be reproduced with your available data?

- Monitoring data could be reproduced.
- All materials.
- Determination of water quality and ecological status of water body.
- Type of impact and pollutants.
- Determination of ecological status of the Ros' river on the results of the project work.
- To analyse physical and chemical monitoring data for many past years.

3. What information/topics should be added to this ESCS training?

- Experience of other countries on implementing WFD
- More biological indicators calculations.
- Use of priority substances in the classification.
- To teach to work in the ASTERICS program.
- Information on the correlation of hydrobiological and hydrochemical parameters (if such correlation exists).

4. What additional informatio/topics would be of interest for you in futute trainings?

- Specific pollutants.
- Reference conditions and typology.
- Organic pollutants data accuracy.
- To show calculations of background concentrations in practice (on the basis of computer programs).
- More indepth data on interdependence between hydrobiological, hydrochemical and hydromorphological parameters for determination of the ecological status.

5. The technical level of the material covered in the ESCS training was:

Just right - 14 responses

6. How could the ESCS training be improved?

- By additionally translating the materials of the trainings into other languages (beside English and Russian ones).
- It would be very good to have a field visit (or through video), where 1 water body could be taken and the whole process of ecological statys determination is shown directly, including the calculation of hydrobionts, 5 coefficients and hydrobiological estimation.
- By having additional field works for more clear system of water objects ecological status classification.

7. Please share other comments or expand on previous responses here:

- The training was very interesting and useful. It is very important to take into the next expedition the potential participants of the monitoring process.