Report from the GIS meeting (act. 1.4)

1. General Data

Country:	**Poland**
Organizer:	**GWP Lithuania & GWP Poland**
Date & Place:	**3 July 2014, Faculty of Civil and Environmental Engineering, Warsaw University of Life Sciences, Warsaw, Poland**

2. Agenda

Objective of the workshop:

- The main goal of the meeting was to discuss the content and technical aspects of preparation of joint GIS maps for the Nemunas (Neman) and Pregolya river basins shared by Belarus, Lithuania, Kaliningrad Oblast (Russia) and Poland, development of common databases and visualization of hydrological and human pressure information.
- to strengthen professional links between the water management and GIS experts of neighboring countries of Belarus, Lithuania, Kaliningrad and Poland

Agenda

Annex 1 in the attachment

3. Report (max 2000 characters)

GIS mapping is a part of two other projects:

1. Development of GIS communication technology platform and database: Output 4 of GWPCEE Integrated Drought Management Programme (IDMP). Global Water Partnership is financing compilation of GIS maps through the IDMP;

2. SIWI project "Building a framework for collective action in the management of the transboundary waters in Kaliningrad (Russia), Lithuania, and Poland (Baltic sea region).

GIS maps will also be used for the second round of Nemunas and Pregolya river basin district management plans and programmes of measures prepared by Lithuania and Poland under the EU Water Framework Directive.

Another significant task of the workshop was to strengthen professional links between the water management and GIS experts of neighboring countries of Belarus, Lithuania, Kaliningrad and Poland. During the first river basin planning round (2009-2015) cooperation between Lithuania, Poland and their non-EU neighbors was totally missing. Current GIS project is a good opportunity for establishing a background for such cooperation.

14 water management and GIS experts attended the workshop: 4 from Lithuania, 2 from Belarus, 2 from Kaliningrad and 6 from Poland.
Presentations on the current situation on river basin management and available national GIS maps were made by the representatives of participant countries. Timetable, deadlines and responsible persons for creation of joint GIS maps and common databases were also discussed.
It was agreed by the participants that the following joint GIS maps for the Nemunas (Neman) and Pregolya basins will be compiled:

No/No	GIS map	Responsible person	Deadline	Comments
		SURFACE WATER		
1	General maps: river basins, sub-basins, hydrological network	Edvinas, Jurgita, Lithuania; Marek, Poland; Aliaksandr, Belarus; Dmitry, Kaliningrad	5th August 2014	National layers (scale 1:50,000; 1:100,000) will be sent to Edvinas by Aliaksandr, Dmitry and Marek. **The required projection for all GIS layers – WGS84**
2	Current hydrological monitoring stations	Edvinas, Jurgita, Lithuania; Marek, Poland; Aliaksandr, Nadezhda, Belarus; Dmitry, Kaliningrad	5th August 2014	National layers will be sent to Edvinas by Aliaksandr, Dmitry and Marek
3	Existing surface water monitoring network	Edvinas, Jurgita, Lithuania; Marek, Poland; Aliaksandr, Nadezhda, Belarus; Dmitry, Kaliningrad	1st September 2014	National layers will be sent to Edvinas by Aliaksandr, Dmitry and Marek
4	Surface water chemical status	Edvinas, Jurgita, Lithuania; Marek, Poland; Aliaksandr, Nadezhda, Belarus; Dmitry, Kaliningrad	End October 2014	Common criteria will be disccused with PL, BY and KL experts under the framework of cooperation/agreements. Agreed criteria will be shared among the GIS experts
5	Surface water ecological status	Edvinas, Jurgita, Lithuania; Marek, Poland; Aliaksandr, Nadezhda, Belarus; Dmitry, Kaliningrad	End October 2014	Common criteria will be disccused with PL, BY and RF KL experts under the framework of cooperation/agreements. Agreed criteria will be shared among the GIS experts
		GROUNDWATER		
5	Map of groundwater bodies/ aquifers	Bernardas, Edvinas, Lithuania	1st September, 2014	Groundwater bodies are delineated in LT and PL but only aquifers are available in BY and KL. Joint map of GW aquifers will be

No/No	GIS map	Responsible person	Deadline	Comments
				compiled.
6	Groundwater monitoring network	Bernardas, Edvinas, Lithuania	1st September, 2014	
7	Groundwater quantitative status	Bernardas, Edvinas, Lithuania	1st September, 2014	Quantitative status of GW bodies is assessed in LT and PL but not available for BY and KL.
8	Groundwater chemical status	Bernardas, Edvinas, Lithuania	1st September, 2014	Chemical status of GW bodies is assessed in LT and PL but not available for BY and KL.
9	Groundwater abstraction trend and impact to surface ecosystems	Bernardas, Edvinas, Lithuania	1st September, 2014	Future abstraction map is available in LT. Check the situation in other countries.
PRESSURES AND IMPACTS				
10	Point sources	Edvinas, Jurgita, Lithuania; Marek, Poland; Aliaksandr, Belarus; Dmitry, Kaliningrad	1st September	Location of point sources with discharge, t/year. Include addition information on loads, if available. National layers will be sent to Edvinas by Aliaksandr, Dmitry and Marek.
11	Diffuse pollution	Edvinas, Jurgita, Lithuania; Marek, Poland; Aliaksandr, Belarus; Dmitry, Kaliningrad	1st September	Include available information from the following list of indicators: No. of livestock units (LSU), mineral fetilisers, Nkg/ha, Pkg/ha or total aplication N and Pkg/ha. Common indicators shall be visualised. National layers will be sent to Edvinas by Aliaksandr, Dmitry and Marek.
12	Hydropower plants	Edvinas, Jurgita, Lithuania; Marek, Poland; Aliaksandr, Belarus; Dmitry, Kaliningrad	1st September	HP with and without fish passes shall be mapped. National layers will be sent to Edvinas by Aliaksandr, Dmitry and Marek.
13	Water bodies at risk	Edvinas, Jurgita, Lithuania; Marek, Poland; Aliaksandr, Belarus; Dmitry, Kaliningrad	End October	Common indicators will be disccused with PL, BY and Kaliningrad experts under the framework of cooperation/agreements.

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No/No	GIS map	Responsible person	Deadline	Comments
DATABASE &VISUALIZATION				
14	Non-sophisticated interactive web based map	Ignacy, Poland	Beginning November	User friendly interactive map shall be uploaded onto web sites of GWP-LT and GWP-PL
15	Visualization of river network and human pressures	Ignacy, Poland, Aliaksandr, Belarus	Beginning November	Visual information shall be uploaded onto web sites of GWP-LT and GWP-PL

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4. Conclusions

Outcomes of the workshop:

Working procedure:
GIS experts from Belarus, Kaliningrad and Poland will prepare national GIS layers and send them to Edvinas Stonevicius, Vilnius University-GWP-Lithuania. Edvinas will compile joint GIS maps and discuss them with experts from the neighboring countries. Lithuania will also provide common attribute tables for GIS mapping of surface waters, groundwater and human pressures.

Next steps:
Joint GIS maps shall be compiled by November 2014. They will be presented at the workshop which is preliminary planned in November 2014 in Mozury, Poland back-to-back with SIWI meeting on transboundary measures (investments).
Programme of the meeting, list of participants and attribute tables for surface waters are presented in the Annexes below.

5. Attachments

- Annex 1: Programmme of the meeting
- Annex 2: List of participants
- Annex 3: Attribute fields for the GIS maps
- Annex 4: Photos

ANNEX 1. PROGRAMME OF THE MEETING

09:00 – 09:15	**Registration**
09:15 - 09:30	Opening/Welcome. Representatives of Global Water Partnership -Poland. Introduction of workshop participants
09:30 – 09:45	Presentation of agenda and objectives of the workshop. Mr. Bernardas Paukstys, Global Water Partnership -Lithuania.
09:45 - 10:05	WFD requirements for the GIS mapping of water bodies. Ms. Audrone Pumputyte, Environmental Protection Agency, Lithuania.
10:05 - 10:25	GIS maps for the Nemunas River Basin Management in Lithuania - Bernardas Paukstys, Global Water Partnership, Lithuania
10:25 – 11:00	**Coffee break**
11:00 – 11:20	GIS maps for the Pregolya River Basin Management in Poland – Katarzyna Tarnowska, Regional Water Management Authority in Warsaw, Poland
11:20 – 11:40	Available GIS maps for the Neman River Basin in Belarus – Aliaksandr Pakhomau, Central Research Institute for Complex Use of Water Resources, Nadzeya Karakova, Republican Institute for Radiation Control and Monitoring
11: 40 – 12:00	Available GIS maps for the Neman and Pregolya River Basins in Kaliningrad oblast – Dmitry Domnin Atlantic Branch of P.P.Shirshov Institute of Oceanology of Russian Academy of Sciences
12:00- 13:00	**Lunch**
13:00 – 13:30	Interactive map of Nemunas river basin. Possibilities and challenges of updating it to the regional scale. Jurgita Vaitiekuniene. Environmental Policy Centre, Lithuania
13:30 – 15:30	Discussion on content of maps&visualisation, databases, deadlines, etc.
15:30-15:45	Next steps and closure
18:00	Dinner

ANNEX 2. LIST OF PARTICIPANTS

No	Name, surname	Organization	E-mail address
1.	Audronė Pumputytė	Environmental Protection Agency, Lithuania	a.pumputyte@aaa.am.lt
2.	Jurgita Vaitiekūnienė	Environmental Policy Center, Lithuania	jurgita@aapc.lt
3.	Edvinas Stonevičius	Department of Hydrology and Climatology, Vilnius University, Lithuania	edvinas.stonevicius@gf.vu.lt
4.	Bernardas Paukštys	GWP-Lithuania	bernardas@iti.lt
5.	Aliaksandr Pakhomau	Central Research Institute for Complex Use of Water Resources, Belarus	aliaksandr.pakhomau@cricuwr.by
6.	Nadzeya Karakova	Republican Center for Radiation Control and Monitoring, Belarus	knadin@rad.org.by
7.	Dmitry Domnin	Atlantic Branch of P.P.Shirshov Institute of Oceanology of Russian Academy of Sciences, Kaliningrad	dimanisha@rambler.ru
8.	Ivan Kesoretskikh	Atlantic Branch of P.P.Shirshov Institute of Oceanology of Russian Academy of Sciences, Kaliningrad	ivan.k.loki@gmail.com
9	Katarzyna Tarnowska	Regional Water Management Authority in Warsaw, Poland	hydrologia@warszava.rzgw.gov.pl
10.	Magdalena Augustyniak	GWP-Poland and Warsaw University of Life Sciences	madzia_@poczta.onet.pl
11.	Tomasz Okruzhko	GWP-Poland and Warsaw University of Life Sciences	t.okruszko@levis.sggw.pl
12.	Magdalena Jarecka	GWP-Poland and Warsaw University of Life Sciences	m.jarecka@levis.sggw.pl
13.	Marek Gielczewski	GWP-Poland and Warsaw University of Life Sciences	m.gielczewski@levis.sggw.pl
14.	Ingacy Kardel	GWP-Poland and Warsaw University of Life Sciences	i.kardel@levis.sggw.pl

ANNEX 3. ATTRIBUTE FIELDS FOR THE GIS MAPS (prepared by Edvinas, Jurgita and Audrone, Lithuania)

Hydrological network line (rivers, canals etc.)

Field name	Alias	Description
OBJECTID	OBJECTID	
Shape	Shape	
NAME	NAME	River name
WB_CODE	WB_CODE	Water body code
SUB_BASIN	SUB_BASIN	Sub-basin name
SBS_CODE	SBS_CODE	Sub-basin code
BASIN	BASIN	Basin name

BAS_CODE	BAS_CODE	Basin code
RBD	RBD	River basin district name
RBD_CODE	RBD_CODE	River basin district code
SEGMENT_ID	SEGMENT_ID	River segment identification number (Segment - one line or polyline feature. Rivers can be made from several segments.)
LENGTH_KM	Length, km	Segment length, km
HMWB	HMWB	Heavily modified water body (0 – no, 1- yes)
AWB	AWB	Artificial water body (0 – no, 1- yes)
TYPE	TYPE	River segment type
STATUS_ECO	Ecological status/potential	Ecological status or potential estimation If HMWB or AWB are 1 data indicates the ecological potential otherwise ecological status; 1 – high status/maximum potential; 2 – good status/good potential; 3 –moderate status/ moderate potential; 4 –poor status/poor potential; 5 –bad status/ bad potential.
STATUS_CH	Chemical status	Chemical status 1 – good status; 2 – failing to achieve good status

Hydrological network polygon (lakes, ponds etc.)

Field name	Alias	Description
OBJECTID	OBJECTID	
Shape	Shape	
NAME	NAME	Water body name
WB_CODE	WB_CODE	Water body code
SUB_BASIN	SUB_BASIN	Sub-basin name
SBS_CODE	SBS_CODE	Sub-basin code
BASIN	BASIN	Basin name
BAS_CODE	BAS_CODE	Basin code
RBD	RBD	River basin district name
RBD_CODE	RBD_CODE	River basin district code
AREA_KM2	AREA, km2	Area, km^2
HMWB	HMWB	Heavily modified water body (0 – no, 1- yes)
AWB	AWB	Artificial water body (0 – no, 1- yes)
TYPE	TYPE	Type
STATUS_ECO	Ecological status/potential	Ecological status or potential estimation If HMWB or AWB are 1 data indicates the ecological potential otherwise ecological status; 1 – very good status/maximum potential; 2 – good status/good potential; 3 – moderate status/moderate potential; 4 – poor status/poor potential; 5 –bad status/ bad potential.
STATUS_CH	Chemical status	Chemical status:

		1 –good status; 2 – failing to achieve good status.

Current hydrological monitoring stations

Field name	Alias	Description
OBJECTID	OBJECTID	
Shape	Shape	
HS_NAME	HS_NAME	Hydrological station name
HS_WMO_CODE	HS_WMO_CODE	Hydrological station WMO code
X_COORDIN	X_COORDIN	X coordinate WGS84
Y_COORDIN	Y_COORDIN	Y coordinate WGS84
WB_NAME	WB_NAME	River, lake etc. name
WB_CODE	WB_CODE	River, lake etc. code
AREA_KM2	AREA_KM2	Hydrological station catchment area, km^2
DISCHARGE	DISCHARGE	If discharge is measured value is 1, otherwise 0

Existing surface water monitoring network

Field name	Alias	Description	
OBJECTID	OBJECTID		
Shape	Shape		
STATION_NAME	STATION_NAME	Station name	
STATION_CODE	STATION_CODE	Station code (if available EU, otherwise national)	
X_COORDIN	X_COORDIN	X coordinate WGS84	
Y_COORDIN	Y_COORDIN	Y coordinate WGS84	
RIVER_LAKE	RIVER_LAKE	1 – monitoring of rivers; 2 – lake monitoring	
NAME	NAME	Name of the monitored river or lake	
MONIT_TYPE	MONIT_TYPE	Monitoring type (1 – surveillance; 2 – operational, 3 - investigative monitoring)	
WB1_CODE	WB1_CODE	River, lake etc. code	As many columns as monitored WB (by one station)
WB2_CODE	WB2_CODE	River, lake etc. code	
……	…….		
WBx_CODE	WBx_CODE	River, lake etc. code	

River basins

Field name	Alias	Description
OBJECTID	OBJECTID	
Shape	Shape	
BASIN	BASIN	Basin name
BAS_CODE	BAS_CODE	Basin code
RBD	RBD	River basin district name
RBD_CODE	RBD_CODE	River basin district code
AREA_KM2	AREA, km2	Area, km^2

River sub-basins

Field name	Alias	Description
OBJECTID	OBJECTID	
Shape	Shape	
SUB_BASIN	SUB_BASIN	Sub-basin name
SBS_CODE	SBS_CODE	Sub-basin code
BASIN	BASIN	Basin name
BAS_CODE	BAS_CODE	Basin code
RBD	RBD	River basin district name
RBD_CODE	RBD_CODE	River basin district code
AREA_KM2	AREA, km2	Area, km^2

River basin districts

Field name	Alias	Description
OBJECTID	OBJECTID	
Shape	Shape	
RBD	RBD	River basin district name
RBD_CODE	RBD_CODE	River basin district code
AREA_KM2	AREA, km2	Area, km^2

Annex 4: PHOTOS

Ms. Audrone Pumputyte (left), representative of Environmental Protection Agency, Lithuania expresses her views on joint GIS mapping for the Nemunas (Neman) river basin.

Participants attentively listened to presentations