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led by Hulla & Co. Human Dynamics KG

RIVER BASIN MANAGEMENT PLAN FOR THE PRUT PILOT BASIN IN UKRAINE

**REPORT ON STEPS UNDERTAKEN FOR THE COUNTRY ADOPTION
PROCEDURE**

DRAFT



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LIST OF ACCRONIMS

RBMP – River basin management plan

PoM – Programme of measures

EPIRB - Environmental Protection of International River Basins

WFD - Water Framework Directive 2000/60/EC

UNENGO MAMA 86 – Ukrainian National Environmental Nongovernmental Organization MAMA 86

MENR – Ministry for Ecology and Natural resources

SAWR – State Agency of Water Resources

BUWR – River basin management authority

RB - River Basin

NGO – Nongovernment Organization



INTRODUCTION

The assignment 'Additional assistance in development of final drafts River Basin Management Plans (RBMP) for the Upper Dnieper and for the Prut pilot basins in Ukraine' will contribute to the implementation of expected Results-2 of the Project Terms of References which is: 'Development of joint River Basin Management Plans for selected basins'.

The assignment is a continuation of the previous phases of the basin management planning process and thus is based on the tasks already accomplished under Activity 2.1 River Basin Analyses 2.2 Water body identification and typology, 2.3 Analysis of baseline situation (Pressure and Impact and At Risk assessments) 2.5 Development of national and basine-wide Programme of Measure (PoM) 2.7 Public involvement and awareness raising activities.

Under the previous assignment the results of these activities have been incorporated into a draft River Basin Management Plan for selected pilot that has been subject to public consultation with the basin and national stakeholders. This new assignment builds on these results and is supposed to prepare a final draft River Basin Management Plan consistent with the requirements of the EU Water Framework Directive and with the national legislation.

The EPIRB project targets are the improvement of water quality in the trans-boundary river basins of the wider Black Sea region and Belarus. It supports the move towards modern management tools of achievement of desired water quality status by building capacities and learning-by-doing, by means of development and implementation of River Basin Management Plans for selected pilot river basins. In Ukraine there were 2 pilot river basins – Upper Dnieper and Prut chosen by national authorities for RBMP development in 2012. In the period February 2014 to February 2015 MAMA 86 as the selected contractor for the development of drafts River Basin Management Plans for the two pilot basins in Ukraine have been working for the needs of EU funded project "Environmental Protection of International River Basins" implemented by consortium led by Hulla and Co. Human Dynamics KG.

The purpose of the present agreement is to finalize the two drafts of the Prut RBMP and the Upper Dnieper RBMP. The contractor provided the required additional input to complete the drafts final RBMPs with national water management requirements; with the results of the JFSs which were held in 2014 and 2015; as well as incorporating the comments and suggestions of the public and from the stakeholders. According to the ToR, the contractor should provide the EPIRB project with summaries of RBMP brochures and assist the beneficiary in the national adoption process.



1. Development of the River Basin Management Plan

The EU Water Framework Directive (WFD) establishes a legal framework for protection and sustainable use of water resources. Under the WFD management plan is required for each River Basin District.

For the purpose of effective basin management, the Prut River basin, including its surface waters, ground water, was considered as "River Basin District", a territorial unit within which environmental and chemical status of the water bodies has to be determined, respective environmental objectives set, and a Programme of Measures developed and implemented, with further monitoring and evaluation.

The Drafts of Upper Dnieper RBMP and Prut RBMP were prepared by the team led by UNENGO MAMA 86 within the EU-funded project: Environmental Protection of International River Basins, under the consultancy assignment signed between the UNENGO MAMA 86 and the project lead implementer Hulla&Co Human Dynamics KG along with the active involvement of the MENR and SAWR.

The signing of the political part of Association Agreement between Ukraine and the EU on 21st of March 2014 and the economical part on 27th of June 2014 made step forward implementation of the results of 10 years work of Ukraine on harmonization / approximation of environmental legislation to the EU legislation, including EU water legislation, particularly the EU WFD. It develops a good political momentum to support the efforts of the State Agency of Water Resources, the MENR and the Ecology Committee of the Verkhovna Rada to incorporate the Basin management principles into Ukrainian legislation. During the last 3 years there were three attempts of SAWR and MENR to made amendments to the Water Code of 1995 edition. Due to the administrative reforms and political instability they were not adopted yet.

The Law of Ukraine approved "National target programme on Development of Water Sector and Environmental Rehabilitation of the Dnipro River basin for the period to 2021". The Programme's goal is to determine the main directions of state policy in the field of water management to meet the needs of the population and national economy on water resources, preservation and restoration of water resources, the introduction of integrated water resources management and the river basin principle. The Programme for the Dnieper River Basin provides a number of measures, implementation of which is in line with the requirements of the WFD. In particular, the introduction of integrated water management at the river basin level through the development and implementation of River Basin Management Plans.

On 19th of May 2016 the Draft Law on amendments to some Laws, including Water Code was passed through Parliament and approved in 1st hearing. The approval procedure has still to be completed in second, the final hearing in the Parliament, but the first real step towards the WFD approximation of the Ukrainian legislation is done.



The National Action Plan for Environmental Protection of Ukraine envisages development of RBMPs for all 9 major river basins of Ukraine in the next 10 years.

In 2010, all countries of the ICPDR located in the basin of the river Tisza, developed and approved River Basin Management Plan for Tisza. Among them is Ukraine. The plan covers the period from 2009 to 2015, further planned every 6 years of the reviewing of the program of measures.

Within the project of the European Union "Strengthening Ukraine support agencies responsible for implementation of the Danube and Ramsar Conventions" (budget approx. 280,000 EUR) in 2012 the National Management Plan for the Tisza River Basin (green color in the map) was developed. This Plan has currently no legal force.

In the framework of the technical assistance of the Swedish Environmental Protection Agency (budget approx. 300,000 EUR) in 2013 the draft of the River Basin Management Plan for Southern Bug (basin is located only within Ukraine. Gray/Blue color in the map) was created, which in particular includes a program of measures to achieve good ecological status and detailed plan of monitoring of surface water. This Plan was not supported by any normative document and it has a lot of gaps.

National Action Plan for Environment Protection of Ukraine envisages development RBMP for all 9 major river basins of Ukraine next 10 years period.



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Picture 1. Map of 9 main River Basins of Ukraine

Legend:

1. Light yellow color – Dnieper
2. Red – Dniester
3. Gray?blue – South Bug
4. Violet – Severskiy Donets (Basin of Don)
5. Green – Tisza and Prut (Basin of Danube)
6. Peach – Western Bug (Basin of Vistula)
7. Pink – Crimea Rivers
8. Yellow – Azov Rivers
9. Orange – Rivers of Northern part of Black Sea coastal zone
10. Light violet – internal region of surface flow

Table 1. Information of draft river basin management plans, developed in Ukraine

River Basin	Donor/ project	Year	Languages of the plan	Comments
Pripyat and Severskiy Donets	EU TACIS project 'Transboundary River Basin Management: Phase 2' (Belorussia, Ukraine)	01/2007–12/2007	Ukraine, English	RBMPs consist only some elements of WFD requirements, some of measures of PoM have been included in regional



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River Basin	Donor/ project	Year	Languages of the plan	Comments
				environmental programs
Tizsa, catchment area in Ukraine 11,300 km ²	EU project "Strengthening Ukraine support agencies responsible for implementation of the Danube and Ramsar Conventions", 280,000 EUR	2012	Ukraine	River basin management plan largely using WFD approach. PoM have been proposed in regional environmental programme for implementation
Southern Bug, catchment area 63,700 km ²	Swedish Environmental Protection Agency SIDA 'Strengthening Southern Bug basin management', 300,000 EUR	2010-2013	Ukraine, English	River basin management plan using WFD approach. A lot of gaps, was delineated only main riverbed without tributaries. Does not include groundwater. South Bug BUWR included results of RBMP in activities.
Prut	EU EPIRB project	2012 - 2016	Ukraine, English	Based on EU WFD approach and methodology. Ministry will recommend to include all measures of PoM in national and regional corresponding programmes
Upper Dnieper	EU EPIRB project	2012 - 2016	Russian, Ukraine, English	Based on EU WFD approach and methodology Ministry will recommend to include all measures of PoM in national and regional corresponding programmes.



2. Procedure of elaboration, review and approval of river basin management plans

Under the Activity of EPIRB project - development of Joint RBMPs for selected river basins, Communication Strategies and Communication Plans for the two pilot Ukrainian river basins have been developed, which cover the aspects of communication, information access and public participation. They are developed fully in compliance within the overall Communication and Visibility Plan of the project and the EU Visibility Guidelines.

The River Basin Management Planning tasks have been initially discussed and agreed with the members of National Coordination Committee, held on 14 November 2013 (See box).

River Basin Management Plans (RBMPs) are integrated planning documents that describe the characteristics and challenges of a river basin, with the intention to outline a comprehensive set of measures in order to find solutions to complex problems that threaten the aquatic environment. River basin management planning is a continuous process of planning and delivery, plans have to be updated every 6 years.

*The development RBMPs according to the EU Water Framework Directive (EU WFD; 2000/60/EC) requires many implementation steps that build upon each other. All consecutive implementation steps shall be coordinated between responsible institutions by the identified competent authority. The **River Basin Characterisation**, which includes – inter alia - **Typology and Water Body Delineation**, is followed by a **Pressure/Impact Analysis and Risk Assessment**. The outcomes of the Risk Assessment build the basis to design appropriate **Monitoring networks and Programme** to assess water status. After setting **environmental objectives** (EU WFD Article 4), measures that maintain and/or improve water status are required to be outlined in a related **Programme of Measures** (EU WFD Article 11) that need to be implemented in a cost-effective way in order to achieve the set environmental objectives. The planning, implementation and evaluation of the Programme of Measures is a repeating procedure and integral part of River Basin Management Plans.*

The first Public Consultation Meetings for Prut River Basin (RB) was held on 29 July 2014 in Chisinau and for Upper Dnieper RB - on 31 July 2014 in Kiev. The background information and preliminary overview of the important water management issues for the Upper Dnieper and Prut River Basins were presented and important feedbacks of local stakeholders were gathered for the next step of plan development.

The second round of stakeholder consultation meetings were held in Kiev on April 29, 2015 on discussion of the Draft Upper Dnieper RBMP (Ukrainian share) and in Yaremche on 26 May 2015 to discuss the Draft Prut RBMP (Ukrainian share). The meetings initiated the stakeholders'



consultations and gathered more than 100 participants (50 – in Kyiv and 56 – in Yaremche). The events included the plenary sessions for short introduction to the Drafts RBMPs and time allocation was granted for immediate comments and questions-and-answers working group session for feedback and comments through interactive discussion in two working groups. The group discussions were guided by independent facilitators, and the outcomes of the discussions were shared in the plenary session by selected reporters.

“At least 1 year prior to the start date of river basin management plan validity period, the draft plan should be published and made available for public to obtain comments from the stakeholders. This stage also includes public discussions”^{}.*

The Draft Upper Dnieper and Draft Prut RBMPs were published on 15 April, 2015 on both sites:

- The EPIRB project website at www.blacksea-riverbasins.net
- The Ministry of Environment and Natural Resources Protection of Ukraine website at www.menr.gov.ua

“Stakeholders and community shall be provided at least six months for making comments in writing. Public shall receive the basic information and documents upon request that was used during the elaboration of the river basin management plan”^{}.*

After the stakeholders meetings the Draft Upper Dnieper RBMP and the Draft Prut RBMP entered into the public consultation phase: on April 29, 2015 for Upper Dnieper RBMP and on May 26, 2015 for Prut RBMP. The Draft RBMP consultations continued until the end of August 2015 and the stakeholders had possibilities for submitting written comments. The opportunity to participate in the consultation process was promoted by:

- direct notification mass-emails to relevant NGO networks;
- news items on the EPIRB project website www.blacksea-riverbasins.net and the beneficiary website www.menr.gov.ua;
- the published project newsletter “In the Flow” Issue 6, April 2015,
- targeted media announcements (“Ukrainian Radio. First channel”. “Ivano-Frankivsk regional radio”).
- *“River basin management plan shall contain information on public discussions and consultation held at the preparation stage as well as the results incorporated in the management plans”^{*}.*

During consultations on Draft Upper Dnieper RBMP (Ukrainian share) there were collected 74 comments from different stakeholders (individuals and organizations), including 25 comments presented at the public consultations meeting on April 29, 2015 in Kiev. Annex 1 present a Summary

^{*} Communication Strategy and Plan for the Upper Dnieper Pilot Basin (In the territories of Belarus and Ukraine)



of the consultation process on the Draft Upper Dnieper River Basin Management Plan. The Summary includes the stakeholders' comments received during the public consultation, including the comments and suggestions that were presented at the public consultations meeting on April 29, 2015 as well as written comments received on e-mail of Ministry and EPIRB. All 62 comments were taken into due account and incorporated in the Draft Upper Dnieper RBMP.

Overall, in the course of the consultations on Draft Prut RBMP (Ukrainian side), 56 comments were submitted by stakeholders and the general public, including 25 written comments from individual representatives of concerned public and 31 comments that were presented at the stakeholder consultative meeting in Yaremche on May 26, 2015. Annex 2 contains a summary of responses provided in the course of the meeting in May and written comments mailed to e-mail addresses of the Ministry and EPIRB Project. Overall, 34 comments from stakeholders and the general public were accounted for and incorporated into the final Draft Prut RBMP.



3. Final Steps for Adoption of the Upper Dnieper and Prut RBMPs

After addressing the comments received through the public consultation process, as well as incorporating monitoring results of all JFSs for surface and groundwater, tentative final drafts of Upper Dnieper RBMP and Prut RBMP are available for acceptance by the beneficiary and subsequent adoption in accordance with the national planning procedures. However, a specific RBMP approval procedure does not exist yet, as Ukraine just made the first important steps to approve the first scope of amendments, including RBMP introduction to the Water Code of Ukraine. These amendments still need to go through the second Parliamentary hearing for their final approval. According to the Basic Timetable to be followed by Ukraine to meet the WFD requirements, until 2023, Art. 9(2) WFD (Recovery of costs for water services), Art. 13 WFD (River basin management plans), as well as Art. 14 WFD (Public information and consultation) are to be implemented.

In this situation we have to wait until 2023 for implementation of the adopted RBMP the contractor suggested two options for adoption of the Upper Dnieper and Prut RBMPs, which are:

- 1) to use the existed national procedure for approval of the Order of Cabinet of Ministers' of Ukraine or
- 2) to adopt the PoM of the RBMPs within the relevant Regional Socio-Economical Programs of measures or Regional Development Strategies till 2020 .

After the final approving the amendments to the Water Code of Ukraine the Order of the Government of Ukrainian on "Procedure of elaboration, review and approval of River Basin Management Plans" will be adopted. In case if RBMPs will be adopted by the Order of Cabinet of the Ministers of Ukraine (CMU) there are the following final steps will be done:

the Ministry of Environment (MENR) according to the existed provisions for CMU's order approval:

- Draft RBMP will be discussed internally within the ministry with participation of relevant departments and agencies of the MENR, including State Agency of Water Resources – 1 month;
- Draft RBMP will be disseminated for consideration and comments at national level with participation of relevant ministries, including Ministry of Economy, Ministry of Financing, Ministry of Regional Development, Building and Housing Services, Ministry of Justice, Ministry of fuel and energy, Ministry of agropolity, Ministry of public health and relevant state agencies, State oblast administrations – 1 month;
- Draft RBMP will be posted on the MENR and SAWR websites for comments – 1 month;
- Draft RBMP will be revised according all comment – 2 weeks;
- MENR will present the finalized Draft RBMP to the CMU for approval;
- River basin management plan will be approved by the CMU Order.

The MENR can advocate (MENR's Order) the RBMP at Regional level and promote the incorporation of the measures of Program of measures (PoMs) of the RBMP to the Regional Programs of socio-economic development, which have to be revised and adopted as Regional Development Strategies



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and Programs at Regional (Oblast) level for the period till 2020. MENR has to cooperate with Kyiv and Chernigov Regional State Administrations to incorporate the measures of PoMs of Upper Dnieper RBMP in the relevant part on nature protection of Regional Programs on socio- economic development till 2020.

For Prut PoM MENR has to cooperate with Ivano-Frankivsk and Chernivtsi Regional State Authorities.



Annex 1

Table 1. List of comments received in written to the Upper Dnieper RBMP

Institution/ Organization	Reference	Comment
M.Yatsyuk - science	1.1.7 Hydrological regime	Edition-related note - page.10 - maybe it is appropriate to replace sentence "average water flow in the Dnieper in Kiev reaches 7000 m ³ /s (with flow velocity varying from max. 25000 m ³ /s to min. 200 m ³ /s)." by "average water flow in the Dnieper in Kiev reaches 7000 m ³ /s (max. 25000 m ³ /s , min. 200 m ³ /s)." However, I have serious doubts in these figures. Even in the case of average water flow of 7000 in Kiev, Gidropark, Rusanovka, Druzhby Narodov Park and other low lying areas are flooded. Such flows are observed only in the course of springs high water periods. At such flows, the river water discharge could reach 215 km ³ , that is an unreal volume. At the same time, according to operation rules of the Dnieper cascade water reservoirs, maximal water discharges from the Kiev water reservoir may reach 14400 m ³ /s (in the forced mode of operation). Besides that, the highest water flow in the Desna was registered at the level of 2400 m ³ /s. In other words - the maximal water flow in Kiev cannot exceed 16800 m ³ /s.
	Chapter 2. Section 2.2.2 Chapter 4.1.	The Oster river should be classified as a WB at Risk, as in the past a system for river water flow redirection to the Trubezh river was constructed there. Now, the system is idle. The Oster is substantially silted and undergoes continuous hydromorphological alterations.
	Chapter 3 Protected territories	Some information should be added to Section 3 (page 37) to highlight disinterest of central and local authorities (the issue needs to be settled legislatively) in developing projects and setting coastal protection strips and water protection zones - the issue has clear causal linkages with water management and environmental problems in regions, and with quality of water bodies.
	Chapter 6. Section 6.3	Page 72 () Edition related note. The procedure of payments for special water use is defined by the Tax Code of Ukraine. Page 73. Edition related note. The following regulations were repealed: 1) Decree # 836 of the Cabinet of Ministers of Ukraine of May 18, 1999 on Approval of Rates of Charges for Specialised Water Use; 2) The Comprehensive Program for Protection of Rural Settlements and Agricultural Lands from Adverse Water Impacts up to 2010, and a Forecast for 2020 (Decree # 901 of the Cabinet of Ministers of Ukraine of 03.07.2006); 3) The State Dedicated Program for Comprehensive Flood Protection in the Dniester, Prut and Syret Basins (Decree # 1151 of the Cabinet of Ministers of Ukraine of 27.12.2008);
	Chapter 7 page 78.	1. Edition related notes. MENR should be replaced by SSER. 2. In measures of the task - "to define hydrographic zoning units of the country's territory" - it would be better to use the following wording: "to introduce (optimise) hydrographic zoning units of the country's territory according to developed scientific criteria and accounting for requirements of EU WFD". 3. Page 82. Edition related notes. MENR should be replaced by SSER. 4. In measures of the task - "to update and amend Decree # 243/2002 of the



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Institution/ Organization	Reference	Comment
		<p>President of Ukraine on Measures to Ensure Efficient Flood Forecasts and Mitigation Flood Consequences of 15.03.2002 " - I propose to use the following wording : "to develop a draft CMU Decree Measures to Ensure Flood Risks Management, and Efficient Forecasting of Floods".</p> <p>First, the Presidential Decree is long outdated and technologically obsolete, it should be annulled. Second, the political order of the country had been altered to the parliamentary-presidential model (presuming that all executive powers are delegated to the Government).</p> <p>5. Page 82. Item "1.4. Setting pollutant discharge limits at the base of a combination of the BAT principle and assessment of impacts on status of water bodies" - I recommend to reword the entry as it is absolutely clear now that the country needs new regulations on matters of discharge limit setting.</p> <p>6. All measures' items should be linked to relevant national and regional programs - instead of only one program for Kiev and Kiev oblast - especially in the case of items 1.6, 1.10 and 1.12.</p> <p>7. Edition related note for all measures' items - the Program of Rehabilitation of the Dnieper Basin up to 2021 !!!.</p> <p>8. Words "channels (river channel straightening)" should be added to item 2.1.</p> <p>9. I recommend to add entry "regional water management development programs" to items 2.3-2.5 on corresponding programs, as such programs exists in every oblast.</p> <p>10. Wording of item 3.1 needs edition and adjustment as construction of additional groundwater intakes may increase the depression cone. Maybe, the item should refer to alternative and technologically advanced (in terms of water treatment) water intakes. It is necessary to account form quantitative and economic effects.</p> <p>11. Item 3.2 is also worded in a too discriminative manner. What is meant by gradual reduction of drinking water supply to suburbs? To a what level should they be reduced? Maybe, the item should focus on construction of local water supply systems relying on new water treatment and water supply technologies.</p> <p>12. In item 4, I would recommend to replace word "Introduction" by "Optimisation (transformation)", as these activities are to be based on modern monitoring base.</p>
	Annexes, section 2.page 11	I recommend to exclude entry "2. It is appropriate to establish mobile compressor units in the structure of the Dnieper Water Management Association for bubble water aeration under ice cover in areas of critically low oxygen concentrations."
Kravchenko, the R&D Institute	Chapter 2. section 2.2.1	1. Page 29, Table 2.1: a new raw should be added for 73% percentage figure - "Weighted average" as 73% is not a "total" it is the average value of all percentages of residents with sanitation connections.
	Chapter 4.	1. Page 46, Table 4.3: "Colour" is measured by instruments (as a score). 2. Page 53, Fig. 4.2 is not translated into Russian.



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Institution/ Organization	Reference	Comment
		<p>3. Page 59: Centralised water supply utilities control status of water sources according to GOST 2761-84 "Sources of Centralised Drinking and Household Water Supply. Hygiene and Technical Requirements and Rules for Selection" - therefore it is not appropriate to require some additional monitoring (associated costs will be eventually paid by consumers). So, it would be better to harmonise GOST 2761-84 with WFD requirements.</p>
	Chapter 6. Section 6.2	<p>Coverage data somehow changed in 2015, but general trends remain the same. At the same time, energy audit of facilities and energy conservation in general are not universal solutions. In Ukraine, service rates are estimated based on costs. If power consumption decreases, tariffs decrease. As a result, for example, Chernigov Water Utility implemented several energy conservation measures, but its tariffs still remain loss-making.</p>
	Chapter 7.	<p>1. Table. 7.2, items 1.2 - 1.5: Implementation costs of the listed requirements are substantially underestimated.</p> <p>2. 8. Page 85: Supplementary measures, item 1.1 - costs are substantially underestimated. Kiev alone signed a loan agreement on € 800 million equivalent to reconstruct Bortnichi WWTF. Besides that, it is necessary to address problems of reconstruction of WWTFs in Zhytomir, in cities of Zhytomir and Kiev oblasts that discharge wastewater into water bodies of the Upper Dnieper basin.</p> <p>3. 9. Page 87., item 3.1. : Construction of new wells would not improve groundwater quality, but it would only intensify anthropogenic pressures. Groundwater quality might be improved by prohibition of facility/private wells and provision of centralised water supply to relevant people. A priority option for development of water supply in Kiev should include use surface water (in this connection, reconstruction of "Dnepr" and "Desna" water treatment facilities would promote groundwater protection).</p>
	Chapter 7. Table 7.2 Supplementary measures, 1.1.	<p>1. The following entries should be added: Design and technical upgrade of Zhytomir Water Utility WWTF (sludge recirculation and raw sludge pumping units). Works costs UAH 975.0 thousand or €41,181 (the Teterev river) - Oblast Level Comprehensive Environmental Protection Program of Zhytomir Oblast for 2014-2017. The oblast level environmental fund - 2015.</p> <p>2. Reconstruction of sludge processing unit # 2 in Zhytomir (a mechanic dewatering unit) Works costs - UAH 6,335.684 thousand / € 267,603. By years: 2014 - UAH 2,111.895 thousand 2015 - UAH 2,111.894 thousand 2016 - UAH 2,111.894 thousand (WB Teterev) - 2015-2016 Oblast Level Comprehensive Environmental Protection Program of Zhytomir Oblast for 2014-2017. The local budget.</p> <p>3. Reconstruction of WWTFs 1 (phase I, reconstruction of phase II) in Zhytomir -</p>



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Institution/ Organization	Reference	Comment
		<p>UAH 2,979.94 thousand / € 125,865 By years: 2014 - UAH 1,000.0 thousand 2015 - UAH 1,000.0 thousand 2016 - UAH 979.94 thousand (WB - Teterev) 2015-2016</p> <p>4. Reconstruction of WWTFs in Ozerne township of Zhytomir district Works costs - UAH 2,977.0 thousand / € 125,741 By years: 2016 - UAH 2,000.0 thousand 2017 - UAH 977.0 thousand (WB - Teterev) 2016-2017 Oblast Level Comprehensive Environmental Protection Program of Zhytomir Oblast for 2014-2017. The oblast level environmental fund.</p> <p>5. Reconstruction of sewage pumping unit # 13 of the Water Utility in Korosten. Works costs - UAH 185.0 thousand/ € 7,814. Oblast Level Comprehensive Environmental Protection Program of Zhytomir Oblast for 2014-2017. The local budget (WB - Uzh)</p> <p>6. Reconstruction of the sewage pumping unit of the main sewer of the Water Utility in Korosten Works costs - UAH 185.0 thousand / € 7,814. Oblast Level Comprehensive Environmental Protection Program of Zhytomir Oblast for 2014-2017 . The local budget (WB - Uzh)</p> <p>7. Construction of BIOTAL technology WWTFs with capacity of 300 m³/day in Poleskoye township of Korosten district. Works costs - UAH 4,696.95 thousand / € 198,387. By years: 2014 - UAH 1,253.893 thousand 2015 - UAH 3,443.057 thousand (WB - Uzh) Oblast Level Comprehensive Environmental Protection Program of Zhytomir Oblast for 2014-2017. The local budget</p> <p>8. Reconstruction of WWTP of "Lisova Kazka" oblast-level TB sanatorium for adult patients in Korostyshev (Zhytomir Oblast Council) . Works costs - UAH 3,920.0 thousand /€ 165,571. Oblast Level Comprehensive Environmental Protection Program of Zhytomir Oblast for 2014-2017. The oblast level environmental fund. (WB - Teterev)</p> <p>9. Construction of a sewer WWTP (capacity 2000 m³/day with prospective upgrade up to 3000 m³/day) in Korostyshev (Polevaya St.). Works costs - UAH 10,000.0 thousand - UAH 9,000.0 thousand / € 422,374 By years:</p>



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Institution/ Organization	Reference	Comment
		<p>2014 - UAH 1,000.0 thousand 2015 - UAH 5,000.0 thousand 2016 - UAH 4,000.0 thousand Oblast Level Comprehensive Environmental Protection Program of Zhytomir Oblast for 2014-2017, The national environmental fund. The local budget. (WB - Teterev)</p> <p>10. Construction of sewers in N.Siverskiy (at Lenina St., Kozatska St., Chervonoarmiyska St., Svodody St.) . Works costs - UAH 3,009.20 thousand / € 127,092. Oblast Level Environmental Protection Program of Chernigov oblast for 2014 - 2020. The state budget (WB - Desna)</p> <p>11. Reconstruction of sewers at Lenina St., Nekrasova St., R.Luxemburg St. in Schors. Works costs - UAH 1,919.00 thousand / € 81,054 (WB Snov) 2016 Oblast Level Environmental Protection Program of Chernigov oblast for 2014 - 2020 The oblast level budget</p> <p>12. Reconstruction of sewer WWTFs in Nezhin. Works costs - UAH 39,000.00 thousand / € 1,647,259 (WB Oster) Oblast Level Environmental Protection Program of Chernigov oblast for 2014 - 2020. The state budget, the oblast budget, local budget.</p> <p>13. Construction of a sewer collector in Nezhin (Vashenko St.) Works costs - UAH 1,069.00 thousand / € 45,152 in 2016, Oblast Level Environmental Protection Program of Chernigov oblast for 2014 - 2020. The oblast budget (WB - Oster)</p> <p>14. Reconstruction of sewer networks in Chernigov. Works costs UAH 32,780.00 thousand/ € 1,384,542 - in 2020. Oblast Level Environmental Protection Program of Chernigov oblast for 2014 - 2020. The state budget, local budget, facilities' funds (WB - Desna)</p> <p>15. Construction of a sewer pumping unit in Chernigov (at Krasnosilskogo St.). Works costs - UAH 11,855.80 thousand/ € 50,076. Oblast Level Environmental Protection Program of Chernigov oblast for 2014 - 2020 in 2016 . The state budget (WB - Desna).</p> <p>16. Provision of equipment to actors of the environmental monitoring system Works cost - UAH 350,00 thousand/ €9,004,802.39 Oblast Level Environmental Protection Program of Chernigov oblast for 2014 - 2020. The oblast budget (WBs - Desna, Snov, Oster) for 2020</p> <p>17. Surface water toxicity assessments Works costs - UAH 140,00 thousand / € 9,004,802?</p>



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Institution/ Organization	Reference	Comment
		<p>(WBs - Desna, Snov, Oster) Oblast Level Environmental Protection Program of Chernigov oblast for 2014 - 2020. The oblast budget. For 2020.</p> <p>18. Protection of water resources. Finance allocations - UAH 213,195.385 thousand for 2016. The Program of Environmental Protection and Rational Use of Natural Resources of Kiev oblast up to 2016. The state, oblast and local budgets, environmental funds, other sources.</p> <p>19. Design and implementation of reconstruction works at the damaged section of the sewer collector in Ukrainka. Works costs - UAH 2,847.0 thousand / € 120,250 (for 2016). The Program of Environmental Protection and Rational Use of Natural Resources of Kiev oblast up to 2016. Obukhov district state administration (WB - Dnieper)</p> <p>20. Design and reconstruction of the sewer pumping unit in Gostomel township (at Yubileyna St.) Works costs - UAH 320,0 thousand / € 13,515 for 2016. The Program of Environmental Protection and Rational Use of Natural Resources of Kiev oblast up to 2016, the Executive Committee of Gostomel township council (WBs - Bucha, Rokach)</p>
T. Adamenko, Ukr. Hydrometeorological Centre	Chapter 1. Section 1.1.6	<p>The most important climate parameters that affect water resources include ambient air temperature and precipitation.</p> <p>Air temperature. In 25 recent years, in the Upper Dnieper basin, average annual temperatures increased by 1 -1.2°C comparatively to the baseline period (1961-1990). In the whole Ukraine, the average temperature increased by about 1°C .</p> <p>Largest positive deviations are registered in winter seasons: in January - by 2-3°C , in February and March - by 1.5 °C. Such temperature increase resulted in reduction of the winter season (by almost a month), lower numbers of cold days, raise of absolute temperature minimums by 3-8°C, decrease of snow cover periods. Average winter soil freezing depths decreased by 20-70 cm, snow cover thickness decreased by 10-20 cm, almost snowless winters without soil freezing were registered more often.</p> <p>In July - August, average monthly temperatures increased by almost 2° C and often reach levels of Southern Ukraine. Absolute temperature maximums increased by 2-4 °C (by 5-6 °C in 2015). In recent decades, highest temperatures (+37-40 °C) were almost the same as in Southern Ukraine.</p> <p>Precipitation. Annual precipitation figures did not change substantially (within 1-5%), however there were some seasonal and monthly alterations. Winter and summer precipitation decreased by 5-10% (up to 20-25% in Chernigov oblast). At</p>



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		<p>average, in the period from 1991 to 2014, highest precipitation levels were observed in September and October (by 20-35% over the norm).</p> <p>Accounting for temperature and precipitation changes (in the past, now and most probably in the future), we may expect growing aridity in the Dnieper and Prut basins. The above conclusion is confirmed by national research studies and the new agro-climate zoning, suggesting that traditionally sufficiently wet areas (forest and forest-steppe zones) gradually transfer to the zone of insufficiently/unsustainably wet territories.</p> <p>As an example we may refer to the hydrological drought of 2015, that developed at the background of very low water levels in spring and intensified by an extended period of low precipitation from April to August. In July - August, the drought had come signs of a natural emergency when it was accompanied by severe meteorological and soil drought. Preconditions for these developments were formed by extremely high air temperatures and severe shortage of precipitation - precipitation levels in the spring-summer period in the Dnieper basin were the lowest in the whole period of observations (30-50% of the norm at average). Average air temperatures in the spring-summer season exceeded the norm by 1.5-3°C, absolute maximal air temperatures reached +35-37° C.</p> <p>This year, summer - autumn low water level in the Upper Dnieper basin may become the lowest in the whole period of regular observations (in terms of both area coverage and duration).</p>



Annex 2

List of comments received in written and responses to the Prut RBMP

Institution/ Organization	Reference	Comment
Mr Anatoliy Pavelko, a specialist on river conservation and hydropower, the Danube - Carpathian Program - WWF	Section 2 Hydromorphological alterations	<p>1. While supporting rejection of small HPPs in the Prut basin in general, we would like to note that our Fund has developed maps of particularly valuable river sections that cover the Prut river basin and other Carpathian rivers. The map highlights sites when HPPs construction works fail to comply with the dual legislation of Ukraine and cannot be considered acceptable.</p> <p>2. Goloshinska HPP does not exist now, while Yablunitska HPP operates on the White Cheremosh river. Goloshin HPPs (9 hydropower plants!) are planned for illegal construction and we challenge these plans.</p>
Mr Anatoliy Pavelko, a specialist on river conservation and hydropower, the Danube - Carpathian Program - WWF	7.1. Main and supplementary measures for water bodies support and recovery	We would like to see specific actions in the plan for conservation of aquatic and coastal biodiversity, e.g. for such globally endangered species as Danube salmon, and associated habitats.
Mr Yaroslav Zelenchuk, Verkhovyna National Nature Park (NNP)		<p>The following small HPPs are operational or under construction in the Prut river basin:</p> <ol style="list-style-type: none"> 1. Probiyna HPP-1. Dual water intake from the Probiyna river and Gramotniy stream. Operational HPP. 2. Probiyna HPP-2. Water intake from the Probiyna river. Operational HPP. 3. Yablunitsa HPP. A restored old small HPP of the Soviet period. Located on the White Cheremosh river within Yablunitsa village. Registered at the territory of Chernivetska oblast. Operational HPP. 4. Goloshinska HPP on the White Cheremosh river. Construction works are under way. 5. Dzembrinska HPP on Dzembronya stream (a left tributary of the Black Cheremosh river). Construction works are suspended. 6. Sarata HPP on the Sarata river (Sarata village of Putylskiy district of Chernivetska oblast). Intensive construction works are under way. 7. Roztoki HPP on the Cheremosh river. Construction works are under way. 8. Snyatinska HPP on the Prut river. No information is available. In Goloshino and Roztoky, dam-type HPPs are constructed, no specific information is available for Snyatin, while all other HPPs



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		<p>are water diversion type ones.</p> <p>(Annexes - 12 photos)</p> <p>For Charter 3: I submit a corrected file on our Park. The slope swamp is incorporated into our Park. The fish list does not contain river hake (a Red Book species).</p>
<p>Mr Yaroslav Zelenchuk, Verkhovyna National Nature Park (NNP)</p>	<p>Section 3. Protected territories</p>	<p>Updated information on Verkhovynskiy National Nature Park</p> <p>The Park is located at the territory of Goloshynskiy and Zelenskiy village councils in Verkhovynskiy district of Ivano-Frankivska oblast. The NNP was established in 2010 (Decree # 58 of the President of Ukraine of January 22, 2010). Area - 12,022.9 ha.</p> <p>The Park area covers typical mountainous and river valley natural landscapes of Chivchynskiy and Grynyavskiy mountains of major environmental, recreational, historical, scientific, educational and aesthetic value.</p> <p>The Park is located in Chivchynskiy and Grynyavskiy mountains (upper sections of the White Cheremosh and the Black Cheremosh rivers). The major part (75%) of the NNP belongs to Rakhiv-Chivchynskiy section and 25% of the NNP area belongs to Poloninsko-Chornogorskiy section of the Ukrainian Carpathian mountains.</p> <p>Water bodies at the NNP territory are mainly represented by rivers, including the Black Cheremosh and the Perkalaba rivers (forming the White Cheremosh river after confluence with the Sarata river).</p> <p>At the territory of the NNP, more than 700 plant species occur naturally, or a third part of all vascular plants of the Ukrainian Carpathian mountains, including 59 plant species listed in the Red Book of Ukraine.</p> <p>In high altitude areas of Chivchynskiy mountains, slope swamps are common - the swamps are predominantly covered by bristly sedge, Alpine and Porcius brome, Alpine felonweed, etc.</p> <p>Territory of Verkhovynskiy National Nature Park provide habitats for almost 3 000 animal species. From the overall range of animals at the territory of the Park, chordates are most closely studied. They are represented by 5 classes: bony fish - 11 species, amphibians - 6, reptiles - 6, birds - 80 and mammals - 27 species.</p> <p>Fish species in rivers and high altitude streams include trout, burbot and Danube salmon.</p>



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		10. Slope Swamp natural monument of national significance Area - 0.5 ha., sq. 37, type 27 of Burkutskiy Environmental R&D Facility of Verkhovinskiy National Nature Park. Altitude 1550 m a.s.l. A high altitude forest zone. The largest known slope swamp in the Ukrainian Carpathian mountains with extremely high plant diversity (17 sedge species, including some rare ones such as Bucksbaum sedge and hairy-fruited sedge).
Mr Mykhailo Yathyuk, a scientist	2.2. Assessment of pollution from diffuse sources, including land use information	Page 29. Table 2.3. It is necessary to clarify average water consumption rates for rural areas. 0.7 l/day for Ivano-Frankivska oblast and 16.9 l/day for Chernovitska oblast seem to be estimates, or - alternatively - these figures might fail to account for cattle or other indirect water users in rural settlements.
Mr Mykhailo Yathyuk, a scientist	2.4. Other human impacts on quality of surface and groundwater bodies	I think, it would be appropriate to expand section 2.4 - "flood protection" by some practical results of implementation of the program for protection from adverse water impacts. It is worth to note that after the disastrous flood of 2008, many flow regulation and engineering measures were implemented in the basin (including areas within protected territories). In such a case, it would be clear why the issues of section 7.2. emerged.
Mr Mykhailo Yathyuk, a scientist	Section 4. Monitoring program in the Prut river basin	Section 4 on the monitoring program refers only to the need to meet WFD requirements. At the same time, the contemporary monitoring efforts in the basin are not covered. It is not clear, whether there are any water quality measurements now, and whether any actions are applied to prevent pollution risks? It is not clear, whether sampling points in Table 4.1. correlate with existing monitoring locations? As the river is a transboundary one, issues of data reliability are of major importance, therefore the measures should reflect relevant objectives.
Mr Mykhailo Yathyuk, a scientist	Section 4.1.1. Surveillance monitoring program for surface WBs	Edition related notes - page 42. It is necessary to clarify "WB Not At Risk" abbreviation.
Mr Mykhailo Yathyuk, a scientist	6.2. Economic analysis of water use in the Prut river basin	Page. 63. Water use and water intake figures need to be clarified. Based on 2-tp form, I have other figures - the difference reach more than 8 million m ³ . Besides that, it is necessary to note that fish ponds belong to sub-sectors of the agricultural sector. Fig. 6.1 and 6.2
Mr Mykhailo Yathyuk, a	7.1. Main and	Edition related notes - page 68. The list of due legislative acts



Institution/ Organization	Reference	Comment
scientists	supplementary measures for water bodies support and recovery	should be clarified.
Mr Mykhailo Yathyuk, a scientist	7.1. Main and supplementary measures for water bodies support and recovery	Edition related notes - page 69. MER should be replaced by SSER. In measures of the task - "to define hydrographic zoning units of the country's territory" - it would be better to use the following wording: "to introduce (optimise) hydrographic zoning units of the country's territory according to developed scientific criteria and accounting for requirements of EU WFD".
Mr Mykhailo Yathyuk, a scientist	7.1. Main and supplementary measures for water bodies support and recovery	Edition related notes. MENR should be replaced by SSER. In measures of the task - "to update and amend Decree # 243/2002 of the President of Ukraine on Measures to Ensure Efficient Flood Forecasts and Mitigation Flood Consequences of 15.03.2002" - I propose to use the following wording: "to develop a draft CMU Decree Measures to Ensure Flood Risks Management, and Efficient Forecasting of Floods". First, the Presidential Decree is long outdated and technologically obsolete, it should be annulled. Second, the political order of the country had been altered to the parliamentary-presidential model (presuming that all executive powers are delegated to the Government).
Mr Mykhailo Yathyuk, a scientist	7.1. Main and supplementary measures for water bodies support and recovery	MEASURES OF THE DNIEPER RBMP ARE RELEVANT FOR THE PRUT RBMP AS WELL. Therefore, these ones should be integrated into the Prut RBMP, including inter alia such sections as- "reduction and elimination of pollution of water bodies", "improvement of hydromorphological status of water bodies in the basin" and "a monitoring program to control water quality accounting for requirements of EU WFD".
Mr Mykhailo Yathyuk, a scientist	7.1. Main and supplementary measures for water bodies support and recovery	Page 80. I propose add the following entry to the basic and supplementary measures: 1) Ensuring principles of integrated water resources management: - identification and marking in-situ coastal water protection strips and water protection zones. Page. 81. WORDS "irrigation systems" SHOULD BE REPLACED BY "melioration systems". Page 81. MEASURE : " 1) establishment of a holistic system of flood protection in the Prut basin" SHOULD BE REPLACED BY "1) completion of establishment of the holistic system of flood protection in the Prut basin". Page 81. MEASURE " 2) establishment of a system of water control points at rivers (observation of water flow in rivers) and monitoring well to control groundwater levels (reserves)" SHOULD BE REPLACED BY "2) establishment of computerised information and measurement system to monitor surface water



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		<p>and groundwater"</p> <p>The following should be added to the section on international agreements: "Agreement on cooperation at transboundary water bodies."</p>
<p>Mr Oleksandr Kyselyuk, the deputy director of the Carpathian NNP on research</p>	<p>7.1. Main and supplementary measures for water bodies support and recovery</p>	<p>The following should be added: Measures to protect epibiogenic Danube salmon (<i>Hucho hucho hucho</i> Linnaeus) (listed in the Red Book of Ukraine (1994) as vulnerable species; listed in the European Red List (1991) - protection category E (endangered species with low conservation possibility; restoration is impossible without special measures); listed in Annex 3 to the Bern Convention; catch is prohibited by Rules of Fishing in Inland Water Bodies of Ukraine (1985) and by Rules of Game and Sport Fishing in Inland Water Bodies of Ukraine (1990). Overall, the species population is rather low, however, no data is available on the species population in the Prut basin.</p> <p>The Program of Measures:</p> <ol style="list-style-type: none"> 1) organisation of monitoring research on the species population status; 2) prohibition of fishing in areas where the species may be encountered; 3) prohibition of economic activities in the breeding period (April - May); 4) establishment of game reserves or other types of protected territories in upper reaches of mountainous rivers; 5) information dissemination and awareness raising activities. 6) organisation of artificial fish propagation facilities: relaunch of the fish breeding facility with the overall area about 0.30 ha in Yaremche (construction of fish incubators, staff facilities, ponds for juvenile and mature fish); introduction of juvenile fish into natural water bodies (fish stocking into rivers); construction of drop structures in river sections with fish introduction to provide favourable conditions for fish breeding.
<p>Mr Oleksandr Kravchenko, the R&D Institute</p>	<p>2.1. Assessment of pollution from point sources</p>	<p>Page. 26: Fig. 2.10 and 2.11 lack numeric values.</p>
<p>Mr Oleksandr Kravchenko, the R&D Institute</p>	<p>7.1. Main and supplementary measures for water bodies support and recovery</p>	<p>The costs were recalculated with application of the NBU exchange rate, but we think that the costs will be much higher (about twice higher):</p> <p>Reconstruction of sewers and WWTFs in Kolomyia (for Kolomyavodokanal Utility) (including design works) Work costs - UAH 33,700.0 thousand (Water bodies - Prut UA0201/07, UA0201/08) (The Environmental Protection Program of Ivano-Frankivska oblast up to 2015. The national, oblast-level and local environmental funds - UAH 1,387,402)</p> <p>Construction of WWTFs and the sewer collector in Vorokhta</p>



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		<p>village, including design costs). Works costs - UAH 31,500.0 thousand. (WB - Prut UA0201/04) (The Program for Environmental Protection, Rational Use of Natural Resources and Ensuring Environmental Security at the Territory of Yaremche City Council for 2012-2015. The national, oblast-level and local environmental funds, investments, grants) UAH 1,330,478.09</p> <p>Construction of WWTFs in Yaremche with capacity of 4000 m³/day. Works costs - UAH 27,806.7 thousand. (WB - Prut UA0201/04) (The Program for Environmental Protection, Rational Use of Natural Resources and Ensuring Environmental Security at the Territory of Yaremche City Council for 2012-2015. The national, oblast-level and local environmental funds, investments, grants) UAH 1,174,453.13</p>