EU4Environment in Eastern Partner Countries: Water Resources and Environmental Data (ENI/2021/425-550)

# NOTE ON THE FIRST UKRAINIAN RIVER BASIN MANAGEMENT PLANS

Funded by the European Union

EU4Environment
Water and Data in Eastern Partner Countries

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Water Resources and Environmental Data (ENI/2021/425-550)

# ABOUT THIS REPORT

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# ABOUT EU4ENVIRONMENT – WATER RESOURCES AND ENVIRONMENTAL DATA

This Programme aims at improving people's wellbeing in EU's Eastern Partner Countries and enabling their green transformation in line with the European Green Deal and the Sustainable Development Goals (SDGs). The programme's activities are clustered around two specific objectives: 1) support a more sustainable use of water resources and 2) improve the use of sound environmental data and their availability for policy-makers and citizens. It ensures continuity of the Shared Environmental Information System Phase II and the EU Water Initiative Plus for Eastern Partnership programmes.

The programme is implemented by five Partner organisations: Environment Agency Austria (UBA), Austrian Development Agency (ADA), International Office for Water (OiEau) (France), Organisation for Economic Co-operation and Development (OECD), United Nations Economic Commission for Europe (UNECE). The programme is principally funded by the European Union and co-funded by the Austrian Development Cooperation and the French Artois-Picardie Water Agency based on a budget of EUR 12.75 million (EUR 12 million EU contribution). The implementation period is 2021-2024.

https://eu4waterdata.eu

# CONTENTS

## List of abbreviations

ADA ..... Austrian Development Agency

BC..... Basin Council

BQE ..... Biological Quality Elements

DoA ..... Description of Action

DG NEAR ..... Directorate-General for Neighbourhood and Enlargement Negotiations of the European Commission

EaP ..... Eastern Partners

EC..... European Commission

EECCA..... Eastern Europe, the Caucasus and Central Asia

EMBLAS..... Environmental Monitoring in the Black Sea

EPIRB..... Environmental Protection of International River Basins

ESCS ..... Ecological Status Classification Systems

EU..... European Union

EUWI+ ..... European Union Water Initiative Plus

EU4WD..... EU4Environment in Eastern Partner Countries: Water Resources and Environmental Data

GEF..... Global Environmental Fund

GWB..... Groundwater body

ICPDR ..... International Commission for the Protection of the Danube River

INBO..... International Network of Basin Organisations

IOW/OIEau..... International Office for Water, France

IWRM ..... Integrated Water Resources Management

KTM..... Key Type Measures

NESB..... National Executive Steering Board

NFP..... National Focal Point

NGOs..... Non-Governmental Organisations

NPD ..... National Policy Dialogue

OECD ..... Organisation for Economic Cooperation and Development

PoM..... Programme of Measures

RBD ..... River Basin District

RBMP ..... River Basin Management Plan

RBO ..... River Basin Organisations

Reps ..... Representatives (the local project staff in each country)

ROM..... Result Oriented Monitoring

SDG ..... Sustainable Development Goal
SWB..... Surface water body
SWMI ..... Significant Water Management Issue
ToR..... Terms of References
UBA ..... Umweltbundesamt GmbH, Environment Agency Austria
UNDP..... United Nations Development Programme
UNECE ..... United Nations Economic Commission for Europe
WFD ..... Water Framework Directive

**Country Specific Abbreviations Ukraine**

CMU ..... Cabinet of Ministers of Ukraine
MEPR..... Ministry of Environmental Protection and Natural Resources
NAAU ..... National Accreditation Agency of Ukraine
SAWR ..... State Agency of Water Resources
SEA ..... Strategic Environmental Assessment
SEMS ..... State Environment Monitoring System
UAH..... Ukrainian Hryvnia
UkrHMC ..... Ukrainian Hydrometeorological Center

## Executive Summary

Between 2017 and 2024, the River Basin Management Plans (RBMPs) for nine River Basin Districts (Azov Sea, Black Sea, Crimea, Danube, Dniester, Dnipro, Don, Southern Bug, Vistula) have been prepared by a team of competent local experts with methodological guidance and financial support from two EU projects (EUWI+ and EU4WD). The draft RBMPs were subject of a public consultation process in the period from December 2023 to June 2024; related stakeholder comments were taken into account in the final draft RBMPs submitted to MEPR in July 2024 for intra-ministerial consultation and further formal adoption by the Cabinet of Ministers of Ukraine.

This concluding note on the final draft RBMPs after public consultation and adoption by the Cabinet of Ministers reviews the EU support and the result accomplished by the Ukrainian team of experts. It found that, in spite of very limited data and information about surface, coastal and groundwaters, these first nine RBMPs with their annexes were prepared with sound quality. They sufficiently meet the requirements of the Water Framework Directive (WFD), as was the case for similar first generation plans in EU Member States. This is a remarkable result in light of the weak database in the country and the major work challenges caused by the Russian war of aggression.

The report provides a number of concrete recommendations of where and how to improve the next plans in their content and legal framework. It underlines that the implementation of the existing plans needs full commitment and further international support.

# 1. EU support for the Ukrainian RBMPs

## 1.1. Background

The EU support began in 2017 with the EU Water Initiative Plus (EUWI+) project for the development of the Dnipro River Basin Management Plan (RBMP) and associated public consultations. With nearly 300,000 km², this River Basin District (RBD) is larger than any national River Basin District in the EU.

On request of the Ukrainian Ministry of Environmental Protection and Natural Resources (MEPR) in July 2023, the EU Programme provides extra financial and methodological support for refining the RBMPs for the 8 other Ukrainian RBDs to better meet the requirements of the Water Framework Directive (WFD), and of associated Strategic Environmental Assessments (SEAs) and public consultations.

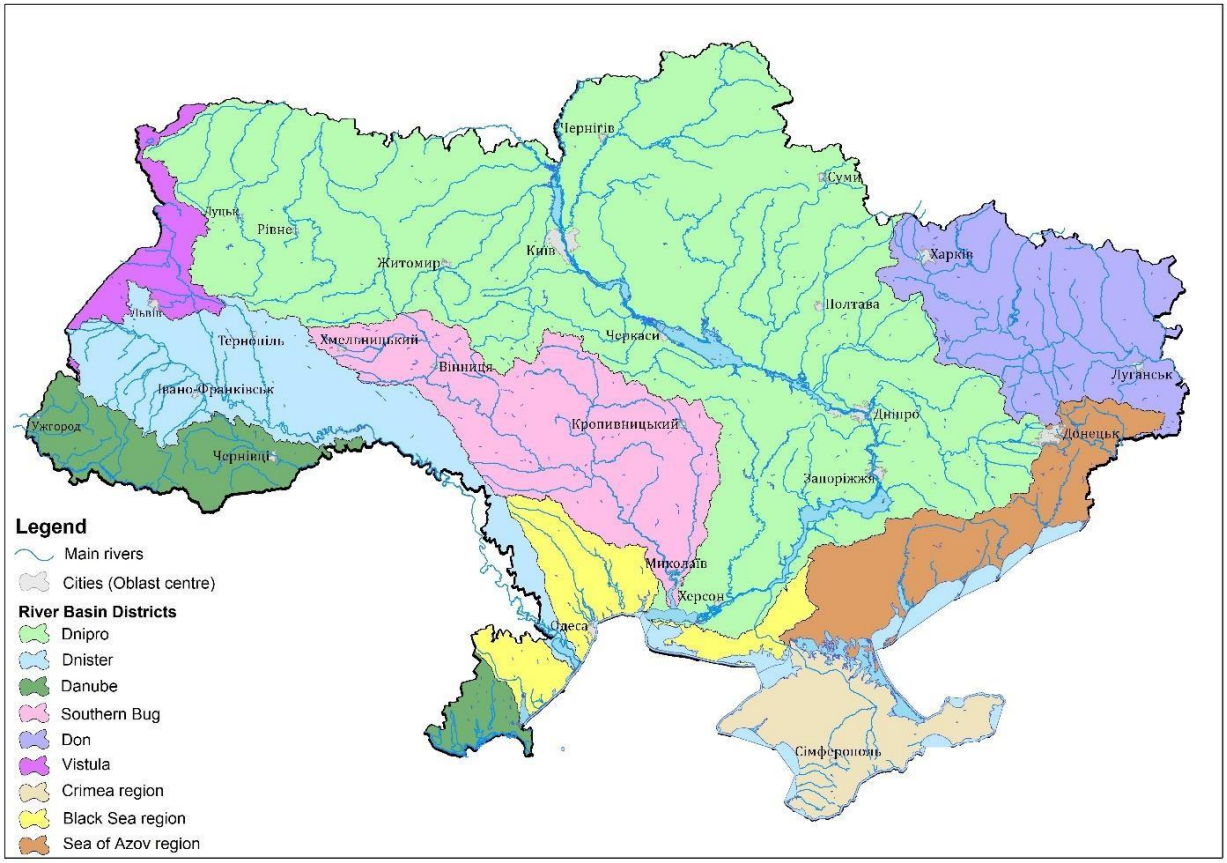


**Figure 1: Map of the 9 Ukrainian River Basin Districts**

### *1.1.1 Financial input and support*

During EUWI+, 10 contracts concerning the Dnipro RBMP preparation (first part) have been arranged with Ukrainian experts for a total amount of 157 090 EUR.

During EU4WD, 9 contracts have been signed with Ukrainian experts for a total amount of 142 980 EUR. These contracts concerned the Dnipro RBMP (2nd part) as well as upgrading the RBMPs of the 8 other River Basin Districts.

On top of this EU-funding, it should be acknowledged that a substantial work effort and in-kind contribution has been provided from Ukrainian side for preparing the 8 other RBMPs.

### *1.1.2 Technical input and support*

Some 30 Ukrainian experts have contributed at various levels to the preparation of all RBMPs: 20 females, 10 males mainly from the Blue Rivers organisation, the Ukrainian Hydrometeorological Institute and Centre, Institute of Economy, Institute of Geology, Institute of Hydrobiology, etc.

EU Member States experts from France and Austria have worked closely with the Ukrainian experts through regular exchanges by emails, physical (before 2020) and on-line (since 2020) meetings. A series of local workshops on know-how transfer has been organised, mainly during EUWI+. A regional workshop on Nature-based Solutions has been carried out in June 2023 in order to inspire the RBMP's Programme of Measures.

These exchanges, active until July 2024, concerned methodological issues, technical questions, careful review of draft texts, specific guidance and recommendations, experiences sharing, translation, etc.

## 1.2. EU support focus in 2024

The first semester of 2024 constituted the final stretch of EU support and had been dedicated to:

- The finalisation of the 9 draft RBMPs.
- The implementation of the second public consultations of these plans.
- The preparation of 9 Strategic Environmental Assessments, and associated consultations.

The last chapters of the Dnipro plan had been discussed already in 2023 and then successive versions (December 2023, January, May, June, July 2024) of the complete draft have been reviewed by the Member States experts.

The 8 other RBMPs have been reviewed during the first semester of 2024 by EU experts to provide guidance for further improvement and adjustments towards WFD compliance. The last chapters (Programme of Measures, Public Consultations, Atlas) have been delivered and reviewed in July 2024.

An assessment grid looking at the provisions of Ukrainian Decree #336 – Annex I and WFD - Annex VII has been established by the EU Member States experts to facilitate the exchanges with the Ukrainian experts. Online discussions separated the comments to still be integrated in the current first generation of RBMPs from those comments which can still be taken into account in the further generations. The blank grid is annexed (Table 2).

Specific support has been provided on the delineation of the zones vulnerable to nitrates, which concerns the chapters dedicated to protected areas.

For the EU expert check, the Ukrainian versions of the RBMPs have been automatically translated in English with Deepl.com. Subsequently, this translation has been quality-reviewed by the Ukrainian experts, especially for abbreviations.

# 2. Comments on the Ukrainian RBMPs

## 2.1. Delivered RBMPs

The following documents have been discussed and delivered:

- 9 RBMPs for the **Azov Sea, Black Sea, Crimea, Danube, Dniester, Dnipro, Don, Southern Bug and Vistula river basin districts**. Each RBMP includes an atlas with relevant maps. The Dnipro RBMP and the Danube RBMP are divided into several parts according to the respective sub-basins: entire Dnipro, Upper Dnipro-Desna, Middle Dnipro, Lower Dnipro and Pripyat; entire Danube, Tisza, Prut-Siret, Lower Danube. They are available in Ukrainian language and have been translated into English. The RBMPs cover 6 years from 2025 to 2030.
- 9 reports related to the **Public Consultations** in the 9 RBDs. Consultations on the RBMPs were carried out since December 2023 through publication on websites of the Ministry of Environmental Protection and Natural Resources (MEPR) and of the State Agency of Water Resources (SAWR), and through 14 meetings held between 27 February and 26 April 2024: almost 680 participants provided 160 comments concerning mainly the Programme of Measures and sanitation issues. It should be noted that even in the conflict zones many people participated. The public consultation ended on 21 June 2024. The results of the consultation have been incorporated into the RBMPs (Chapter 9); the detailed comments are available online (https://davr.gov.ua/zvit-pro-rezultati-provedennya-publichnogo-gromadskogo-obgovorennya-proyektiv-planiv-upravlinnya-richkovimi-basejnami-20252030). A template had been provided by the EU experts to the Ukrainian experts to organise the disposition of comments collected during the consultation.
- 9 **Strategic Environmental Assessments**. The comments collected during the SEAs consultation have been processed.
- In addition to the regional guidance documents[1], 9 guidance documents incl. 2 new ones have been produced specifically for Ukraine in the frame of both EU projects. They are listed in the table below. The guidance document concerning the Programme of Measures contains a table to describe the measures. This table has been developed between the EU and Ukrainian experts. It allows to compare and, combine all Programmes of Measures. It has been disseminated to the other EaP countries in the frame of EU4WD.

[1] During the EUWI+ project, the following regional guidance documents have been delivered: WFD relevant coastal monitoring methodologies; Guidance to identify relevant methodological documents on WFD implementation and RBMP development; Terms of Reference for RBMP development, adapted to the 6 countries' context and used to guide the development by local consultants; Methodology for identification, delineation and characterisation of surface water bodies; Methodology for the development of a WFD-compliant ecological status classification system (ESCS); Economic analysis guidance document for RBMP development; General manual for chemical freshwater sampling (groundwater, surface water); Specific manual for chemical surveys in groundwater; Guidance for RBMP dashboard.

**Table 1: Guidance documents developed for Ukraine**

| Country | Products / Deliverables | Language | Availability |
|---|---|---|---|
| UA | Guidance document on pressures and risk assessment for groundwater | EN, UA | EUWI+ |
| UA | Guidance document on protected areas | EN, UA | EUWI+ |
| UA | Guidance document on pressures and risk assessment for surface water | EN, UA | EUWI+ |
| UA | Recommendations for the preparation of economic analysis of water use in river basin management plan development | EN, UA | EUWI+ |
| UA | General manual for surveys in surface waters | UA | EUWI+ |
| UA | Specific sampling plan for surveys in surface water | UA | EUWI+ |
| UA | Toolkit "Public Consultation in River Basin Management Planning" | UA | EUWI+ |
| UA | Hydromorphological monitoring and assessment of transitional water bodies | UA | EU4WD |
| UA | Recommendations on environmental objectives, programme of measures and cost-effectiveness of the programme of measures | UA | EU4WD |

## 2.2. Qualities and shortcomings

### *2.2.1. Key findings*

More than 9,000 Surface Water Bodies (SWB) and nearly 200 Groundwater Bodies (GWB) have been identified, i.e. in average one SWB for 66 km² and one GWB for 3,500 km² (for comparison: 40 resp. 330 km² in the EU).

Almost 11,000 million m³ were abstracted each year for various uses (water supply, industry, agriculture), i.e. 340 m³/s or 270 m³ abstracted per inhabitant/year. According to 2023 data, only 5,700 million m³ have then been abstracted: this significant reduction is due to the destruction of the Kakhovka reservoir, the temporary military occupation of Ukrainian territories and water users, and due to a decrease in water consumption after emigration of a part of the population.

Cost recovery (i.e. money received from the use of water resources to finance the costs of providing water services) varies from 7 to 30% among river basins. These estimated levels indicate that the financial mechanisms do not ensure the sustainability of water services.

Within the 9 RBMPs, more than 1,600 measures were identified at a total cost of 348 billion UAH (7.7 billion EUR). 96% are dedicated to the reduction of pollution, i.e. 1,448 UAH/inhabitant/year (32€/inhabitant/year. In the EU, this average ratio is 45 €/inhabitant/year) or 5 UAH/m³ abstracted water. Around 10% of the total amount of all Programmes of Measures are linked to war damages. Consistency with the Ukraine Recovery Plan has to be ensured. The average cost of the PoMs per water body is 37 million UAH.

If the planning cycle of the first generation of Ukrainian RBMPs will be extended until 2033 to synchronise it with the EU planning cycle (the fourth cycle of RBMPs in line with WFD would be 2028-2033), the cost per inhabitant per year would be 925 UAH (21 EUR). This value remains high comparing the GDP per inhabitant of Ukraine with that of the EU. In any case: these values are not disproportionate or unrealistic.

**Key figures** extracted and estimated from the Ukrainian RBMPs are available in Annex 4.

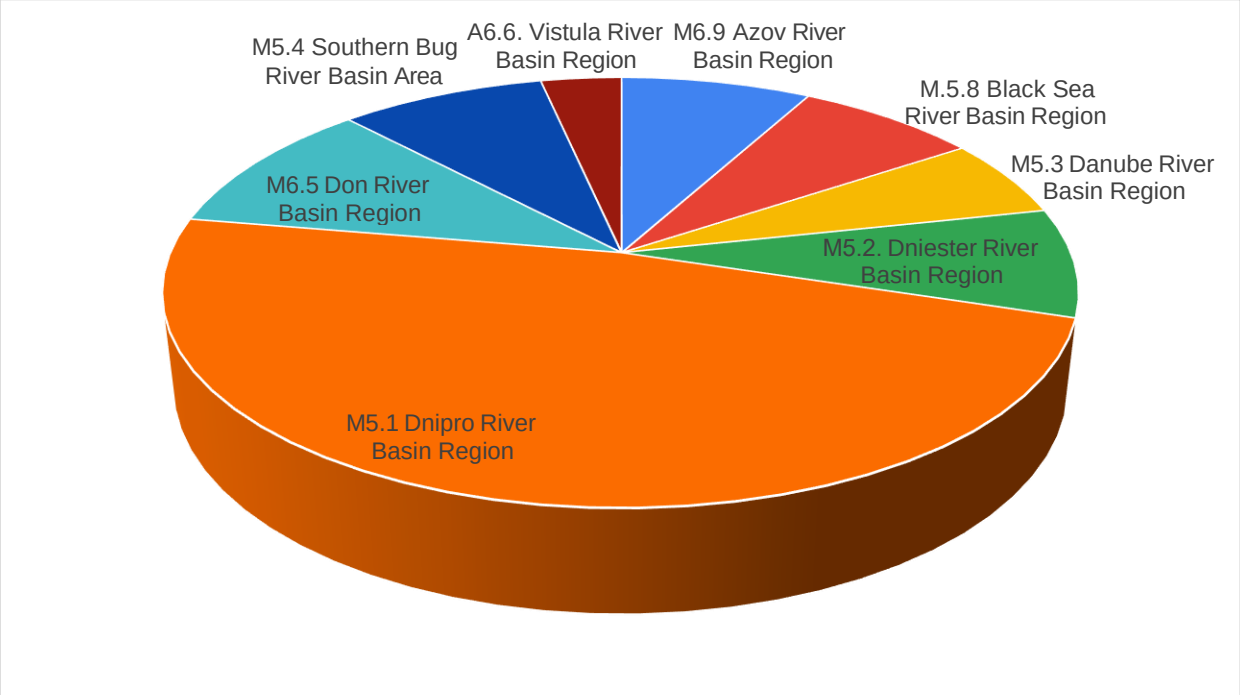


**Figure 2: Estimated costs of the Programmes of Measures (no figure for the Crimea River basin District)**

### *2.2.2. Ukrainian RBMP Qualities*

Globally, the RBMPs are in line with the WFD requirements, especially when considering the war in Ukraine and the insufficient monitoring database that exists since long. It proofed very positive that the local expert team is globally the same for all RBMPs. This allowed producing 9 rather homogenous RBMPs, with the exception of Crimea.

Their structure is consistent and their content is nearly in line with the WFD (Annex 7) and the Ukrainian Regulation (Decree No. 336, Annex 1).

Good efforts have been made to meet European expert comments, i.e. most comments have been considered after the first EU expert review in January 2024, which improved the RBMPs substantially.

The produced maps are clear and consistent for nearly all RBMPs. Maps for up to 26 different topics have been produced, including basin/sub-basin boundaries, surface and groundwater bodies, status, risk, objectives and so on.

A uniform code system for the surface water and groundwater bodies has been introduced, which is consistent for the entire Ukraine.

All available information on surface water has been collected and presented comprehensively. Although data and results are sometimes limited, this is a tremendous step forward for the water management in Ukraine. Type-specific classifications for ecological status assessment for all types of SWBs have been developed and adopted by MEPR. Risk assessment was provided for all delineated SWBs and GWBs.

Groundwater bodies have been delineated and characterised, and reasons for risks of failing to achieve good groundwater status were identified. The impacts and damages due to the war are addressed in separate chapters. Although data for quantifying the effects of human pressure (within the assessment of the risk of failing the good chemical and quantitative status) are rather scarce and in the meantime considerably outdated due to the war damages, local groundwater experts performed a risk assessment by expert judgement based on the information available. This is a very important achievement, as the risk assessment is the basis for the Programme of Measures.

As the existing and already insufficient groundwater monitoring network is presumably largely lost, related needed activities (inventory, recovery, construction) are included in the Programme of Measures (chapter 8) and in chapter 4.2.1.

### *2.2.3. Shortcomings*

The available data and information limited the relevance of the identified status of the water bodies and of the risk analysis.

Only some 5% of all water bodies have been monitored. These limited available data on surface water status are presented in the RBMPs, while information on groundwater is even scarcer.

Groundwater bodies are partly very large and often consist of several individual parts (sub-bodies) scattered over large areas. This makes groundwater management and targeted addressing of anthropogenic pressures by appropriate measures quite difficult. Groundwater monitoring has been suspended due to the war; but even before the war, the monitoring networks needed expansion as well. This lack of representative data prevents a sound status assessment of groundwater bodies and a good validation of the risk assessment.

Although groundwater bodies (commonly the shallow groundwater bodies which are unconfined) are identified at risk of pollution by mainly agro-chemicals (nitrates and pesticides), this aspect is not explicitly addressed by the Programmes of Measures.

The atlas of maps is quite comprehensive, though the maps on the groundwater monitoring networks (quality and quantity) and the maps on the status of groundwater bodies, which are all mandatory according to the Ukrainian Regulation (Decree No. 336, Annex 1, chapter 4.2), are missing.

Coastal and transitional waters are not sufficiently described.

The trends presented in the economic analysis are based on figures, which are not relevant anymore considering the Russian aggression and its huge impact on Ukraine.

Around 130 supplementary measures (i.e. less than 10% of the total number of measures) are not costed.

# 3. Recommendations

## 3.1. Recommendations for the next generation of RBMPs

### 3.1.1. Central repository of methodological approaches

Several methodologies are already described in guidance documents but not all. Hence, it is recommended to describe all remaining approaches and methods, which are common to all RBMPs (e.g. about the delineation of water bodies, risk and status assessment etc.) in separate methodological background document(s). This reduces both the volumes of the RBMPs and the efforts in preparing the content, and it contributes to the national harmonisation across all RBMPs. Furthermore, the methods and possible amendments would need to be prepared only once.

All methodological documents should then be placed in a central repository, which should be part of the RBMP reporting and to which all RBMPs are referring to. Challenge is that different guidances were adopted by the different institutions (e.g. MEPR, SAWR, State Geology Agency)

### 3.1.2. Coastal and transitional waters (chapter 1)

It is suggested that in the process of "splitting" coastal and transitional waters into water bodies, care should be taken that there are no significant differences in the pressures to which a given water body is subject. In practice this means that a large coastal or transitional water body with "pressure generating sites" along its banks, usually large cities, could be split into 2 or even 3 water bodies, with a smaller water body around the "pressure generating site". This is a practical step which prevents the application of (often quite expensive) measures to the whole large water body if the "pressure generating site" is found to be less than good.

In RBMP Chapter 1. GENERAL CHARACTERISTICS OF SURFACE AND GROUNDWATER, information could be added on abiotic, biotic and substrate characteristics for coastal and/or transitional waters. The WFD uses the term “Factors” instead of “Descriptors” and, for the obligatory factor salinity: freshwater, oligohaline, mesohaline, polyhaline, euhaline.

As Ukraine will join the Black Sea Geographical Intercalibration Group (Bulgaria and Romania) it is advised to “create” an additional coastal water type, which has been intercalibrated with this Group: Mesohaline, microtidal (< 1 m), shallow (< 30 m), moderately exposed, mixed substratum.

### 3.1.3. Groundwater bodies (chapters 1 and 4)

In the 2nd RBMP cycle it is necessary to include maps on the quantitative and qualitative status of groundwater bodies as well as maps showing the monitoring networks for quantity and quality (like in the Dnipro RBMP).

In a future step, check the practicability of the very large and/or scattered groundwater bodies in terms of feasible groundwater management and subdivide them. It is advantageous to split not directly connected groundwater sub-bodies and treat them individually As a consequence, the number of groundwater bodies will rise but the implementation of measures will be much more targeted.

### 3.1.4. Pressures (chapter 2)

The methodology of assessing the pollutant load is not homogenous. For example, the Black Sea RBMP proposes a new ratio for the Population-Equivalent and details the methodology for agriculture. The risk

assessment of SWBs is always at the beginning of section 2.1. It would be more relevant to put the risk assessment of SWB at the end of section 2.1, after the presentation of the pollution.

Due to the partly considerable war damages, the pressure situation changes constantly. Even after the war it will take significant time and efforts to get an overall picture. The inventory of human pressures and the re-assessment of the effects on the water bodies (ecology, chemistry and quantity) is crucial for the next cycle of RBMPs and the revision of their PoMs.

#### 3.1.5. Protected areas (chapter 3)

Maps of drinking water abstractions for human consumption (not available in the first generation because of the Russian aggression) shall still be produced. The establishment of sanitary protection zones at groundwater drinking water abstractions is already included in the Programme of Measures and will substantially contribute to achieving this goal via the second generation plans.

#### 3.1.6. Monitoring and assessment of results (chapter 4)

It is reasonable to implement the surface water monitoring programme as planned and to increase knowledge and data especially on biological quality elements in regards to the newly established assessment methods. When enough national data are available a review of the assessment methods based on national reference values and pressure-response relations can be established.

The groundwater monitoring network needs substantial attention. Starting from the newly delineated groundwater bodies, the design of the future monitoring network should be based on the purpose and objectives of monitoring and the future utilization of the monitoring results. Inventorying still existing monitoring points offers an opportunity of starting partly from scratch with selecting wells for a future monitoring network: probably not all existing wells are still suitable for the new network and probably new sites have to be established.

The monitoring strategy should be tiered and provide long term guaranteed financial budgets to guarantee a continuous collection of field data which is essential for the status and trend assessments.

Methodologies should be developed for assessing the chemical and quantitative groundwater status by using the results of the monitoring which can be applied to all groundwater bodies. The results of the status assessment should be shown in maps.

#### 3.1.7. Programme of Measures (chapter 8)

All measures mentioned must be costed even roughly.

Linking each measure with the Key Type of Measures (KTM) will facilitate a comparison between the basin, the national compilation and the future reporting to the EU.

A column could be added to the Programme of Measures table to specify if the measure is “main” or “supplementary”. This will facilitate the valorisation of the database with e.g. pivot tables.

Developing methodologies for assessing the chemical and quantitative groundwater status by using the results of the monitoring can be applied to all groundwater bodies. Results of the status assessment should be shown in maps.

Explicitly establish and describe measures tackling the pollution of groundwater bodies by differing point and diffuse sources. Also consider and mention, that several measures implemented for surface waters (e.g. sewer collection and treatment) also contribute to the improvement of groundwater quality, in particular in settlement areas where groundwater is polluted by nutrients.

#### 3.1.8. Public consultation (chapter 9)

The tables gathering the "disposition of comments" are available on official websites but the link is not mentioned in the RBMPs.

The impact of the public consultation is not really summarised in the RBMPs.

#### 3.1.9. Transboundary coordination

Transboundary coordination of international river basin districts of EU and non-EU countries is expected by WFD (art. 3.4) to ensure the harmonisation on both sides of the border and within a basin (delineation of water bodies, consistency of monitoring, impact/effect of measures, etc.).

### 3.2. Recommendations for the legal regulation

#### 3.2.1. Adapt the outline in Decree N°336, annex 1

The methodological guidance documents could be listed in a new annex 2 of Decree 336 or be downloadable from a dedicated and regularly updated portal mentioned in Decree 336 or inside each RBMP.

The chapter „Other significant anthropogenic impacts" must be noted as a separate chapter 2.3. It does not concern only groundwater, as could be understood in Decree 336. It mentions climate change, plastics, invasive alien species which impact mainly surface water.

In chapter 4, a section dedicated to monitoring the protected areas must be added.

The Cost-effectiveness Analysis of measures could be mentioned in the economic analysis chapter and still be developed in the chapter dedicated to the Programme of Measures.

According to the current Decree 336, chapters 7 and 8 are switched compared to WFD Annex 7. The Decree 336 could stick to WFD Annex 7 and propose to number 7 the Programme of Measures. The content of the chapter "Programme of Measures" could be closer to WFD Annex 7.

#### 3.2.2. Protected areas

The nutrient sensitive and vulnerable zones will be defined at national level for incorporation into the RBMPs (chapter 3). Considering the impact of such zones, it is not the role of RBMPs to delineate them.

#### 3.2.3. Planning period

Depending on the EU accession process, it would be possible to synchronize the Ukrainian RBMPs and the EU cycles. For example, by extending the first generation of Ukrainian RBMPs up to 2033 (3 years extension), this would match the end of the fourth WFD planning cycle (if agreed at EU level).

#### 3.2.4. Clarify responsibilities

Clarify the coordination of the four Basin Councils inside the Dnipro River Basin District as well as the legal scope of the Basin Councils' opinion on the draft RBMPs.

# 4. Conclusions

The development of Ukrainian RBMPs has been hampered by the limited availability and quality of information and robust data (field monitoring and laboratory analysis) for most water bodies, i.e. surface waters (rivers, lakes, coastal and transitional waters) and groundwater. The situation was further aggravated by the effects of the war. The war has made economic analysis and forecasting most difficult.

Under these conditions, the RBMP documents have been prepared at an impressive speed and quality. They reflect best-available expert knowledge used in accordance with the guidelines of the EU Common Implementation Strategy. Despite the indicated gaps and shortcomings, the overall result should not detract from the high relevance and performance of the produced RBMPs.

As in the case of many EU Member States, the first generation River Basin Management Plans had deficits but the next generation plans succeeded to better meet the standards of the EU Water Framework Directive.

The EU expert-team from OiEau and UBA consider the results of the first generation of Ukrainian RBMPs as acceptable and sufficiently compliant towards WFD requirements, notably when considering the current situation in the country and the data available.

Hoping that the availability of qualified national experts with sound knowledge of the WFD will improve over the next years, the EU expert team is optimistic that improved and fully compliant second generation RBMPs can be prepared in Ukraine in the future.

Nevertheless, it has to be stressed that the completion and adoption of these plans is only the start of an EU-compliant water management. Their step-wise implementation needs full commitment of all stakeholders in Ukraine and continued substantial international support.

## 5. Annexes

1 Table developed for specifying the Programme of Measures

2 Table for assessing the draft RBMPs

3 Template on the disposition of Comments during the public consultations process

4 Key figures from the Ukrainian RBMPs

**ANNEX 1 Table developed for specifying the Programmes of Measures**

| **№ measure** | | | **i** |
|---|---|---|---|
| **Main SWMI** | | 1 | |
| **Sub-Issue** | | 2 | |
| **CMU #336 measures** | | 3 | |
| **Measure Family /KTM** | | 4 | |
| **Measure Name** | | 5 | |
| **Measure description** | | 6 | |
| **Technical description** | | 7 | |
| **Economic entity** | | 8 | |
| **Restoration of the destruction caused during the war** | *Yes / No* | 9 | |
| **Number of people affected by the measure** | *Thousand people* | 10 | |
| **River Basin** | | 11 | |
| **Sub-basin** | | 12 | |
| **Oblast** | | 13 | |
| **Rayon** | | 14 | |
| **Community** | | 15 | |
| **GWB or category of SWB** | | 16 | |
| **Water body code** | | 17 | |
| **Water body risk assessment** | *At risk / Not at risk* | 18 | |
| **SWB ecological status or quantitative status for GWB** | | 19 | |
| **SWB or GWB chemical status** | | 20 | |
| **Protected areas** | | 21 | |
| **Unit** | *thousand m3/ day* | 22 | |
| | *м3* | | |

| | | | |
|---|---|---|---|
| | *km* | | |
| | *ha* | | |
| | *tons* | | |
| | *other* | | |
| **Number of Units** | *thousand m3/ day* | | |
| | *м3* | | |
| | *km* | | |
| | *ha* | | |
| | *tons* | | |
| | *other* | 23 | |
| **Cost of investment per unit** | *mln UAH* | 24 | |
| **Total investment cost** | *mln UAH* | 25 | |
| **Unit cost of operation and maintenance** | *mln UAH* | 26 | |
| **Total cost of operation and maintenance** | *mln UAH* | 27 | |
| **Total cost of the measure** | *mln UAH* | 28 | |
| **Indicate the date on which the calculations were made in columns 24-28** | | 29 | |
| **Programme concerned** | | 30 | |
| **Sources of financing** | | 31 | |
| **Responsible authority** | | 32 | |
| **Implementation time** | *year* | 33 | |
| **Measure priority** | | 34 | |
| **Comments, source of costs information and data** | | 35 | |
| **Measure suggested by** | | 36 | |
| **Measure suggested on** | | 37 | |

**ANNEX 2 Table for assessing the draft RBMPs**

| COUNTRY: | | RIVER BASIN MANAGEMENT PLAN: | | VERSION: | |
|---|---|---|---|---|---|

| Ukrainian Decree #336 – Annex I | EU WFD - Annex VII | Status[2] | Comments | Remedial action | Author | Ukrainian expert comments |
|---|---|---|---|---|---|---|
| 1. GENERAL DESCRIPTION OF THE CHARACTERISTICS OF THE RBD<br>1.1. Description of the river basin district<br>1.1.1. Hydrographic and water-resource zoning<br>1.1.2. Climate<br>1.1.3. Relief<br>1.1.4. Geology<br>1.1.5. Hydrogeology<br>1.1.6. Soils<br>1.1.7. Flora<br>1.1.8. Fauna<br>1.1.9. Hydrological regime<br>1.1.10. Specifics of the river basin | 1 CHARACTERISATION<br><br>(Map of river basin delineation and sub-basin breakdown) | | | | | |
| 1.1.11. Typology of SWBs | Map of the ecoregions and surface water body types | | | | | |

[2] *presence, absence, partly, n/a*

| Ukrainian Decree #336 – Annex I | EU WFD - Annex VII | Status[2] | Comments | Remedial action | Author | Ukrainian expert comments |
|---|---|---|---|---|---|---|
| 1.1.12. Reference conditions | Identification of reference conditions for the surface water body types | | | | | |
| 1.2. Water bodies identification<br>1.2.1. Surface waters | Map of surface water bodies (location and boundaries) | | | | | |
| 1.2.2. Groundwater | Map of groundwater bodies (location and boundaries) | | | | | |
| 2. SIGNIFICANT PRESSURES AND IMPACT OF HUMAN ACTIVITY ON THE STATUS OF SURFACE WATER AND GROUNDWATER, INCLUDING POINT AND DIFFUSE SOURCE POLLUTION<br><br>2.1. Surface water<br>2.1.1. Organic pollution | 2 PRESSURES ASSESSMENT<br><br>Evaluation of point source pollution (domestic) | | | | | |
| 2.1.2. Nutrient pollution | Evaluation of point source pollution (agriculture)<br>Evaluation of diffuse source pollution (crops, livestock, etc)<br>Summary of land use | | | | | |
| 2.1.3. Pollution by hazardous substances | Evaluation of point source pollution (industrial) | | | | | |

| Ukrainian Decree #336 – Annex I | EU WFD - Annex VII | Status[2] | Comments | Remedial action | Author | Ukrainian expert comments |
|---|---|---|---|---|---|---|
| 2.1.4. Accidental pollution and the impact of contaminated areas | | | | | | |
| 2.1.5. Hydromorphological alteration | Analysis of other impacts of human activity on water status | | | | | |
| 2.2. Groundwater<br>2.2.1. Pollution | | | | | | |
| 2.2.2. Volumes / reserves | Evaluation of pressures on quantitative status, abstractions (domestic uses, industrial uses, irrigation) | | | | | |
| 2.3. Other significant anthropogenic impacts (war impact, climate change, invasive species) | | | | | | |
| 3. IDENTIFICATION AND MAPPING OF PROTECTED AREAS<br>3.1. Emerald sites | 3 IDENTIFICATION AND MAPPING OF PROTECTED AREAS<br>Special areas of conservation (habitats)<br>Special protection areas (birds) | | | | | |
| 3.2. Areas of sanitary protection | Drinking water abstraction for human consumption | | | | | |

| Ukrainian Decree #336 – Annex I | EU WFD - Annex VII | Status[2] | Comments | Remedial action | Author | Ukrainian expert comments |
|---|---|---|---|---|---|---|
| 3.3. Areas designated for protection of valuable species of water bioresources | Economically significant species (fish, shells) | | | | | |
| 3.4. Recreational waters | Recreational waters including bathing waters | | | | | |
| 3.5. Areas vulnerable to (accumulation) nitrate | Vulnerable zones (nitrates from agriculture) | | | | | |
| 3.6. Nutrient sensitive zones | Sensitive areas (nutrients from treatment plants) | | | | | |
| 4. A MAP OF MONITORING SYSTEM, MONITORING PROGRAMME RESULTS FOR SURFACE WATER, GROUNDWATER, PROTECTED ZONES<br>4.1 Surface water<br>4.1.1. Monitoring system | 4 MONITORING<br>Map of the monitoring network | | | | | |
| 4.1.2. Hydromorphological assessment/status | Map of the results of the monitoring programmes for surface water (rivers, lakes, | | | | | |
| 4.1.3. Chemical status assessment | | | | | | |
| 4.1.4. Ecological status assessment | | | | | | |

| Ukrainian Decree #336 – Annex I | EU WFD - Annex VII | Status[2] | Comments | Remedial action | Author | Ukrainian expert comments |
|---|---|---|---|---|---|---|
| | estuaries, coastal water; ecological and chemical) | | | | | |
| 4.1.5. Ecological potential assessment | | | | | | |
| 4.2 Groundwater<br>4.2.1. Monitoring system | Map of the monitoring network | | | | | |
| 4.2.2. Chemical status assessment/risk assessment | Map of the results of the monitoring programmes for groundwater (chemical and quantitative) | | | | | |
| 4.2.3. Quantitate assessment/ground water reserves | | | | | | |
| 4.3. Protected areas | Map of the results of the monitoring programmes for protected areas | | | | | |
| 5. LIST OF THE ENVIRONMENTAL OBJECTIVES FOR SURFACE WATERS, GROUNDWATERS AND PROTECTED AREAS | 5 ENVIRONMENTAL OBJECTIVES DEFINITION<br><br>List of the environmental objectives for surface waters, groundwater and protected areas | | | | | |

| Ukrainian Decree #336 – Annex I | EU WFD - Annex VII | Status[2] | Comments | Remedial action | Author | Ukrainian expert comments |
|---|---|---|---|---|---|---|
| | (Justification of deadlines extension to achieve the objectives) | | | | | |
| | (Justification of less stringent environmental objectives) | | | | | |
| | (Justification for Heavy Modified Water Bodies designation) | | | | | |
| 6. ECONOMIC ANALYSIS OF WATER USE<br>6.1 Economic development of the river basin<br>6.2 Characteristics of current water uses<br>6.3 Forecast of water needs in main sectors of economy<br>6.4 Economic control tools | 6 ECONOMIC ANALYSIS<br>Summary of the economic analysis of water use (Article 5 and Annex III) | | | | | |
| | Cost recovery of water services | | | | | |
| | Cost-effectiveness Analysis of measures | | | | | |
| 7. A SUMMARY OF THE PROGRAMME OR PROGRAMMES OF MEASURES, | 7 PROGRAMME OF MEASURES | | | | | |

| Ukrainian Decree #336 – Annex I | EU WFD - Annex VII | Status[2] | Comments | Remedial action | Author | Ukrainian expert comments |
|---|---|---|---|---|---|---|
| INCLUDING THE WAYS IN WHICH THE OBJECTIVES TO BE ACHIEVED | Summary of the programmes of measures (incl. measures costing): | | | | | |
| | Summary of the measures required to implement Community legislation | | | | | |
| | Report on practical steps and measures to apply the principle of cost recovery | | | | | |
| | Summary of the measures taken to meet the requirements of Article 7 (abstraction for drinking water) | | | | | |
| | Summary of the controls on abstraction and impoundment of water | | | | | |
| | Summary of the controls adopted for point source discharges and other activities | | | | | |
| | Identification of the cases where direct discharges to groundwater have been authorised | | | | | |

| Ukrainian Decree #336 – Annex I | EU WFD - Annex VII | Status[2] | Comments | Remedial action | Author | Ukrainian expert comments |
|---|---|---|---|---|---|---|
| | Summary of the measures on priority substances (article 16) | | | | | |
| | Summary of the measures taken to prevent or reduce the impact of accidental pollution incidents | | | | | |
| | Summary of the measures for water bodies which are unlikely to achieve the objectives | | | | | |
| | Details of the supplementary measures | | | | | |
| | Details of the measures taken to avoid increase in pollution of marine waters | | | | | |
| 8. A REGISTER OF PROGRAMMES (PLANS) FOR THE RBD OR SUB BASIN, CONTENTS AND ISSUES TO BE SOLVED | 8 REGISTER AND SUMMARY OF ANY MORE DETAILED PROGRAMMES AND MANAGEMENT PLANS | | | | | |
| 9. SUMMARY ON THE PUBLIC CONSULTATIONS AND DISCUSSION OF THE DRAFT RIVER BASIN MANAGEMENT PLAN | 9 SUMMARY OF THE PUBLIC INFORMATION AND CONSULTATION MEASURES TAKEN, RESULTS AND IMPACTS ON THE PLAN | | | | | |

| Ukrainian Decree #336 – Annex I | EU WFD - Annex VII | Status[2] | Comments | Remedial action | Author | Ukrainian expert comments |
|---|---|---|---|---|---|---|
| 10. LIST OF COMPETENT AUTHORITIES, RESPONSIBLE FOR IMPLEMENTATION OF THE RBMP | 10 LIST OF COMPETENT AUTHORITIES DEFINED | Presence | | | Oieau | |
| 11. PROCEDURE FOR OBTAINING INFORMATION, INCLUDING PRIMARY ABOUT THE STATUS OF SURFACE AND GROUNDWATER. | 11 CONTACT POINTS AND PROCEDURES FOR OBTAINING THE BACKGROUND DOCUMENTATION AND INFORMATION | Presence | | | Oieau<br>UBA | |

| GLOBAL COMMENTS ON THE RBMP | | | | | |
|---|---|---|---|---|---|
| **Other information** | **Comments** | **Status[1]** | **Remedial action** | **Author** | **Ukrainian experts' comments** |
| Missing relevant information | | | | | |
| Interesting relevant information | | | | | |
| Team in charge of RBMP preparation (coordination of the preparation of the RBMP, technical aspects, etc.) defined and qualified | | | | | |
| Procedure for the consultation on the RBMP defined | | | | | |
| Procedure for the approval on the RBMP defined | | | | | |
| 6-year time schedule of the RBMP synchronised with EU countries | | | | | |
| Outline | | | | | |

**ANNEX 3 Template on the Disposition of Comments during the public consultations process**

| COUNTRY: | | RIVER BASIN MANAGEMENT PLAN: | | CONSULTATION: | |
|---|---|---|---|---|---|

| № s/n | Name legal entity or individual | Part of the draft RBMP addressed by the comments (RBMP section/subsection, annexes, etc.) | Contents | Form of submission (written / oral) | Type (comment, suggestion, critic) | Consideration (considered / not considered/ partly considered) | Answer, impact on RBMP |
|---|---|---|---|---|---|---|---|
| | | | | | | | |

**ANNEX 4 Key figures from the Ukrainian RBMPs** (*in italic: specific calculation for this report)*

| RIVER BASIN DISTRICT | AZOV SEA | BLACK SEA | CRIMEA | DANUBE | DNIESTER | DNIPRO | DON | SOUTHERN BUG | VISTULA | TOTAL |
|---|---|---|---|---|---|---|---|---|---|---|
| AREA (KM²) | 37 878 | 26 674 | 27 200 | 30 400 | 53 900 | 294 916 | 54 437 | 65 200 | 12 933 | **603 53** |
| POPULATION (INHABITANT) | 1 284 967 | 1 800 000 | | 3 532 000 | 5 201 818 | 17 030 000 | 6 099 079 | 3 700 000 | 1 444 000 | **40 091 864** |
| SWBs (NUMBER) | 555 | 231 | 411 | 885 | 1 154 | 3 879 | 699 | 1 090 | 269 | **9 173** |
| GWBs (NUMBER) | 15 | 6 | | 16 | 20 | 56 | 39 | 12 | 9 | **173** |
| WATER ABSTRACTED MILLION M3 | 1 236 | 26 | | 747 | 477 | 6 524 | 1 448 | 292 | 59 | **10 809** |
| WATER INTENSITY (M3/1000UAH) | 18.67 | 0.58 | | 0.59 | 1.80 | 3.20 | 6.05 | 1.30 | 0.68 | |
| COST RECOVERY % | 14 | 29 | | 7.4 | 25 | 29.9 | 22.5 | 20.2 | 14.6 | |
| NUMBER OF MEASURES | 78 | 80 | | 351 | 220 | 524 | 216 | 130 | 82 | **1 681** |
| COST OF MEASURES (million UAH) | 24 511 | 25541 | 0 | 20725 | 27 348 | 161837 | 36 860 | 28 886 | 22 560 | **348269** |
| *KM²/SWB* | *68* | *115* | *66* | *34* | *47* | *76* | *78* | *60* | *48* | ***66*** |
| *KM²/GWB* | *2 525* | *4 446* | | *1 900* | *2 695* | *5 266* | *1 396* | *5 433* | *1 437* | ***3 489*** |
| *TOTAL ABSTRACTION M3/INHABITANT* | *962* | *14* | | *212* | *92* | *383* | *237* | *79* | *41* | ***270*** |
| *COST OF POMs UAH/inhabitant/year* | *3 179* | *2 365* | | *978* | *876* | *1584* | *1 007* | *1 301* | *2 604* | ***1448*** |
| *COST OF PoMs EUR/INHABITANT/YEAR* | *71* | *53* | | *22* | *19* | *35* | *22* | *29* | *58* | ***32*** |
| *TOTAL COST OF PoM MILLION EUR* | *545* | *568* | | *461* | *608* | *3596* | *819* | *642* | *501* | ***7739*** |

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