



National University of Life and
Environmental Sciences of Ukraine



**Path4Med Horizon EU project
(101156867)**

**Demonstrating innovative
pathways addressing water and
soil pollution in the
Mediterranean
Agro-Hydro-System**

**The kick-off meeting
Ukrainian team part of
the Path4Med**



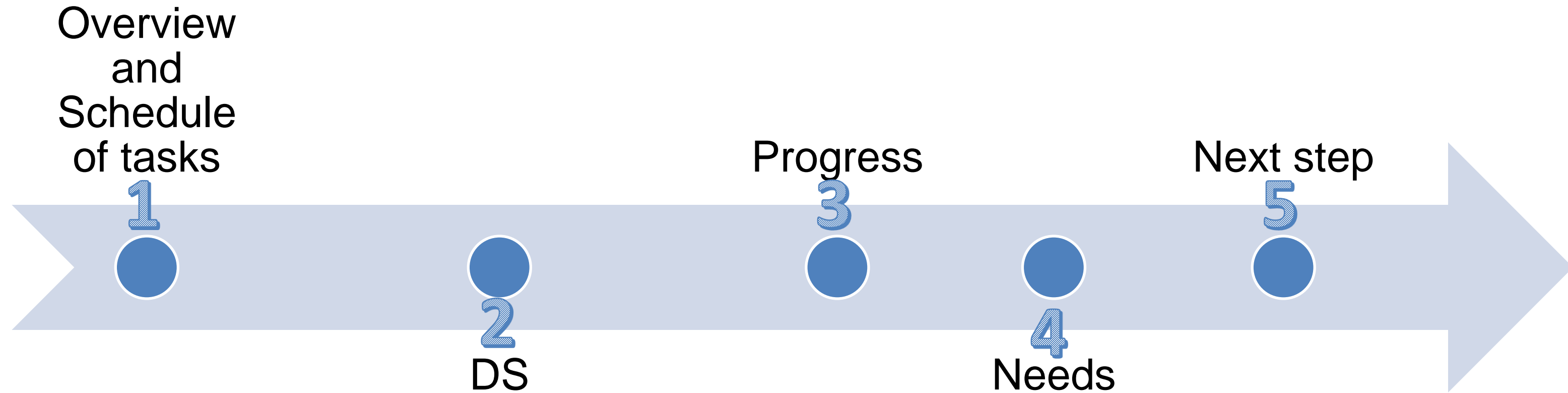
**Co-funded by
the European Union**

22.11.2024





Agenda





- ❑ is an innovative project dedicated to tackling water and soil pollution in the Mediterranean area;
- ❑ operates at *the local and regional level*, creating **Demonstration Sites** to test and refine strategies to reduce pollution and support sustainable agriculture.





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Path4Med



- ❑ Partners - combines a diverse group of expert organisations and institutions, joined by a common vision for sustainable Mediterranean agriculture

Responsible persons of the Ukrainian team part:



Oleksandr Labenko



Vita Strokal



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<https://nubip.edu.ua/>



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Path4Med



Where can you find the main information and results?

❑ Official web-site

<https://www.path4med.eu/>



❑ Ukrainian part – NUBiP’s web-site

<https://nubip.edu.ua/node/65775>



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Path4Med



Where can you find the main information and results?

□ Instagram:

<https://www.instagram.com/path4med/>

Instagram

path4med Follow

8 posts 21 followers 18 following

EU Research Project
Path4Med - Demonstrating innovative pathways of
Mediterranean Agro-Hydro-System... more

POSTS TAGGED

□ LinkedIn

<https://www.linkedin.com/company/path4med/posts/?feedView=all>

PATH4MED

Path4Med

Research project for the elimination of water and soil pollution in the agro-hydrological systems of the Mediterranean



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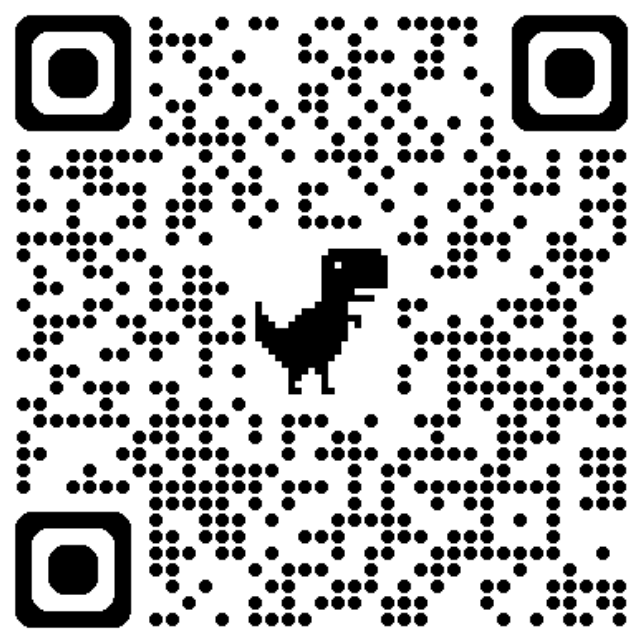
Path4Med



Where can you find the main information and results?

☐ YouTube canal:

<https://www.youtube.com/@Path4Med>



It is important that all teams join all social canals and pursue them!



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<https://nubip.edu.ua/>



Overview and Schedule of the Project



Path4Med is designed in seven work packages (WPs) over 48 months

WP2: Benchmarking and Impact Assessment

- Solutions & Practices Overview
- Technologies baseline (mapping)
- Indicators (based on monitoring and diffuse pollution)

WP3: Novel Monitoring Technologies

- DNA databases
- Monitoring methods and protocol
- Weather databases, climate projections, and data sources

WP4: Future pathways to improve water and soil quality

- Assessments of NBS, soil management, and water management practices
- Integrated modeling on different scales and Upscaling models to the European basin

WP5: Demonstrations and Open Call Management

- Demonstrations implementation and evaluation of results
- Open Call: Launch and Management

WP6: Systems Integration and Policies Mainstreaming

- System databased and water pollution in Europe
- Future needs
- Integrated multi-scale agroecosystem modelling platform production





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Identify NBSs

WP3: Novel Monitoring Technologies

- DNA databases
- Monitoring methods and protocol
- Weather databases, climate projections, and data sources

Monitoring data

WP4: Future pathways to improve water and soil quality

- Assessments of NBS, soil management, and water management practices
- Integrated modeling on different scales and Upscaling models to the European basin

Assess and integrate models

WP5: Demonstrations and Open Call Management

- Demonstrations implementation and evaluation of results
- Open Call: Launch and Management

DSs

WP6: Systems Integration and Policies Mainstreaming

- System databased and water pollution in Europe
- Future needs
- Integrated multi-scale agroecosystem modelling platform production

Models platform





Overview and Schedule of the Project



Path4Med is designed in seven work packages (WPs) over 48 months

WP2: Benchmarking and Impact Assessment

- Solutions & Practices Overview
- Technologies baseline (mapping)
- Indicators (based on monitoring and diffuse pollution)

3-24 months

Identify NBSs

WP3: Novel Monitoring Technologies

- DNA databases
- Monitoring methods and protocol
- Weather databases, climate projections, and data sources

3-36 months

Monitoring data

WP4: Future pathways to improve water and soil quality

- Assessments of NBS, soil management, and water management practices
- Integrated modeling on different scales and Upscaling models to the European basin

9-45 months

Assess and integrate models

WP5: Demonstrations and Open Call Management

- Demonstrations implementation and evaluation of results
- Open Call: Launch and Management

1-45 months

DSs

WP6: Systems Integration and Policies Mainstreaming

- System databased and water pollution in Europe
- Future needs
- Integrated multi-scale agroecosystem platform production

3-45 months

Models platform





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WP2: Benchmarking and Impact Assessment

- Solutions & Practices Overview
- Technologies baseline (mapping)
- Indicators (based on monitoring and diffuse pollution)

3-24 months

8 months

Identify NBSs

NUBiP duration and timeline

Tasks:	Responsible:	Duration:	Deadline:	Input to the projects:
T.2.1: Cost-benefit analysis	Oleksandr Labenko and his team	1-6 months (3 months)	1 January 2025	Solutions and practices overview that are based on Nature-Based Solution approaches
T.2.2: Assess agricultural policies	Oleksandr Labenko and his team	1-6 months (2 months)	1 January 2025	
T.2.4: Review existing indicators of water quantity and quality	Vita Strokhal and her team	1-6 months (3 months)	1 January 2025	





Overview and Schedule of the Project



Path4Med is designed in seven work packages (WPs) over 48 months

WP3: Novel Monitoring Technologies

- DNA databases
- Monitoring methods and protocol
- Weather databases, climate projections, and data sources

3-36 months

Monitoring data

NUBiP duration and timeline

16 months

Tasks:

Responsible:

Duration:

Deadline:

Input to the projects:

T.3.1, 3.4: Water quality monitoring and assessment

Vita Strokai and her team

1-14 months (6 months)

July 2025

Data sources:

- Climate data
- Water monitoring data and water protocols
- Soil data

T.3.2-3.3: Earth Observation and Monitoring Strategy

Oleksandr Labenko and his team
Vita Strokai and her team

1-30 months (6 months)

May-July 2026

T.3.5: Data sources (climate, agriculture ...)

Vita Strokai and her team

1-6 months (4 months)

1 January 2025





Overview and Schedule of the Project



Path4Med is designed in seven work packages (WPs) over 48 months

WP4: Future pathways to improve water and soil quality

- Assessments of NBS, soil management, and water management practices
- Integrated modeling on different scales and Upscaling models to the European basin

9-45 months

Assess and integrate models

NUBiP duration and timeline

13 months

Tasks:	Responsible:	Duration:	Deadline:
T.4.1-4.3: Assessment of NDSs, water and soil management	Oleksandr Labenko and his team Vita Strokhal and her team	25-42 months (4 months)	2025-2028
T.4.5-4.6: Integrated modeling on different scales with solutions	Vita Strokhal	25-42 months (2 months)	2027-2028
T.4.7: Upscaling models	Vita Strokhal	9-45 months (7 months)	2027-2028

Input to the projects:

Data sources:

- Datasets of water parameters to upscale and validate models;
- Optimized soil and water management

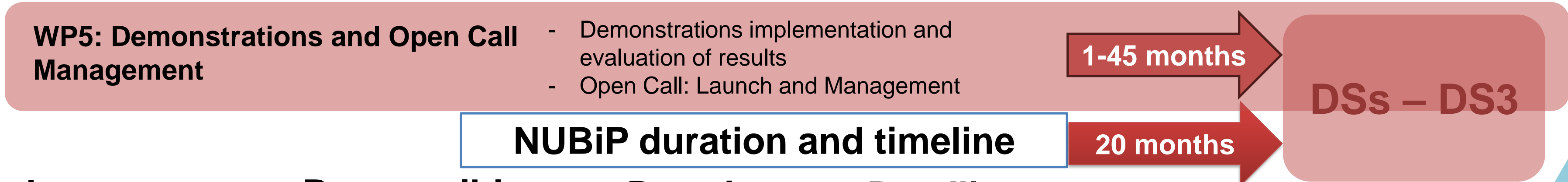




Overview and Schedule of the Project



Path4Med is designed in seven work packages (WPs) over 48 months



Tasks:	Responsible:	Duration:	Deadline:
T.5.1: Stakeholder mapping and analyses	Oleksandr Labenko, Vita Strokhal and their teams	1-12 months (3 months)	February-March 2025
T.5.2-5.3: Co-development of DS3 and coordinate it	Vita Strokhal	1-42 months (9 months)	D5.3 1 April 2026
T.5.4: Evaluation of results of DS3	Vita Strokhal and team	37-42 months (4 months)	2027-2028
T.5.5: Demonstration of DS3 in Lighthouse settings	Oleksandr Labenko, Vita Strokhal and their teams	12-42 months (4 months)	D5.4 1 April 2028

Input to the projects:

- Demonstration Sites:
- DSs Implementation Plan (D5.3)
 - Lighthouse (D5.4)





Overview and Schedule of the Project



Path4Med is designed in seven work packages (WPs) over 48 months

WP6: Systems Integration and Policies Mainstreaming

- System databased and water pollution in Europe
- Future needs
- Integrated multi-scale agroecosystem modelling platform production

3-45 months

Models platform

NUBiP duration and timeline

5 months

Tasks:

Responsible:

Duration:

Deadline:

T.6.1: Integration of agricultural influences	Oleksandr Labenko, Vita Strokhal and their teams	1-24 months (2 months)	February-March 2025
T.6.2: Integration of the needs of agricultural users	Oleksandr Labenko and his team	24-36 months (1 months)	2025-2028
T.6.3-6.4: Integrated multi-scale agroecosystem modelling platform	Vita Strokhal and her team	18-42 months (2 months)	2027-2028

Input to the projects:

- Water and soil pollution
- Water needs for agricultural users
- Databases



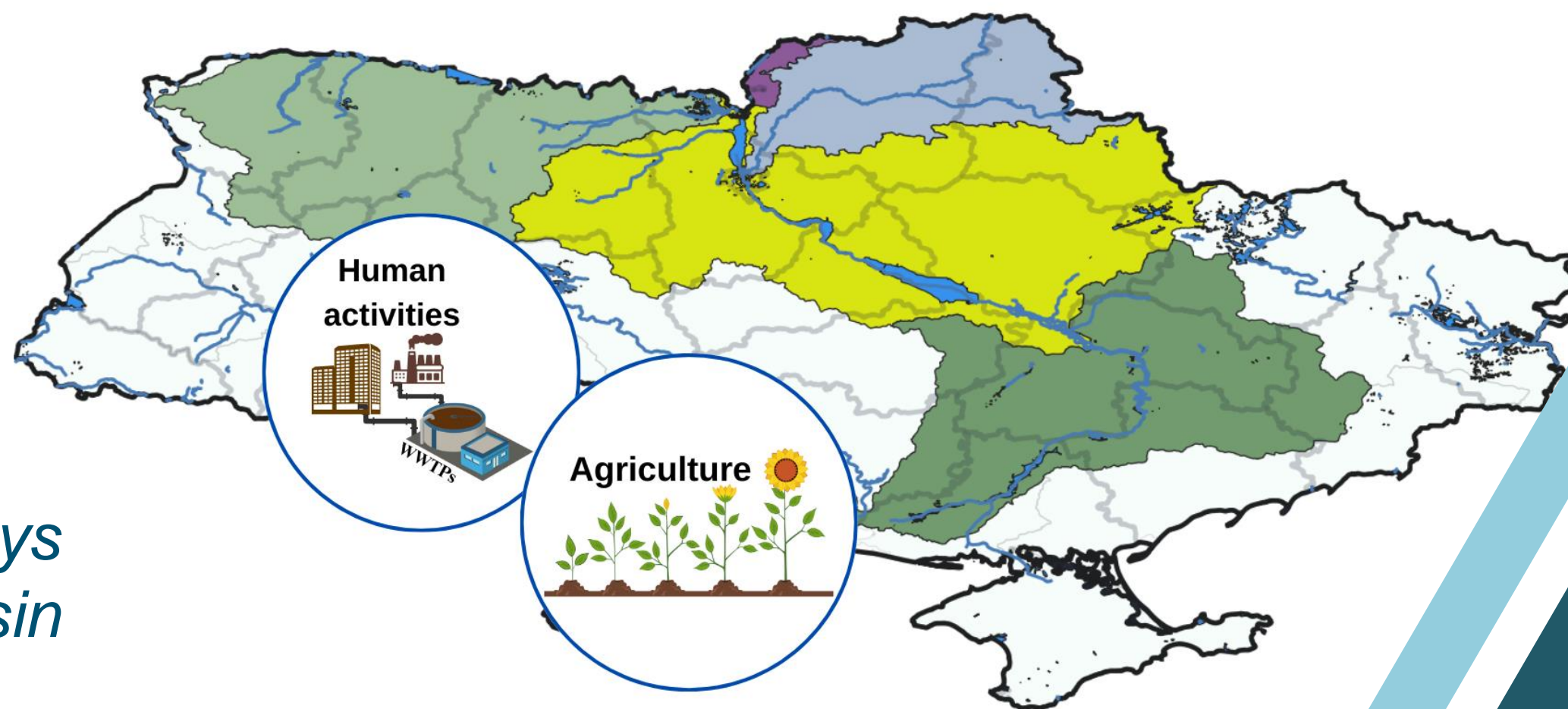


DG3(Ukraine) - DS “Future pathways for zero pollution in the Dnipro Basin under emerging challenges and threats”

Leader: NUBIP of Ukraine

Co-leader: WU-DES (Wageningen University, The Netherlands)

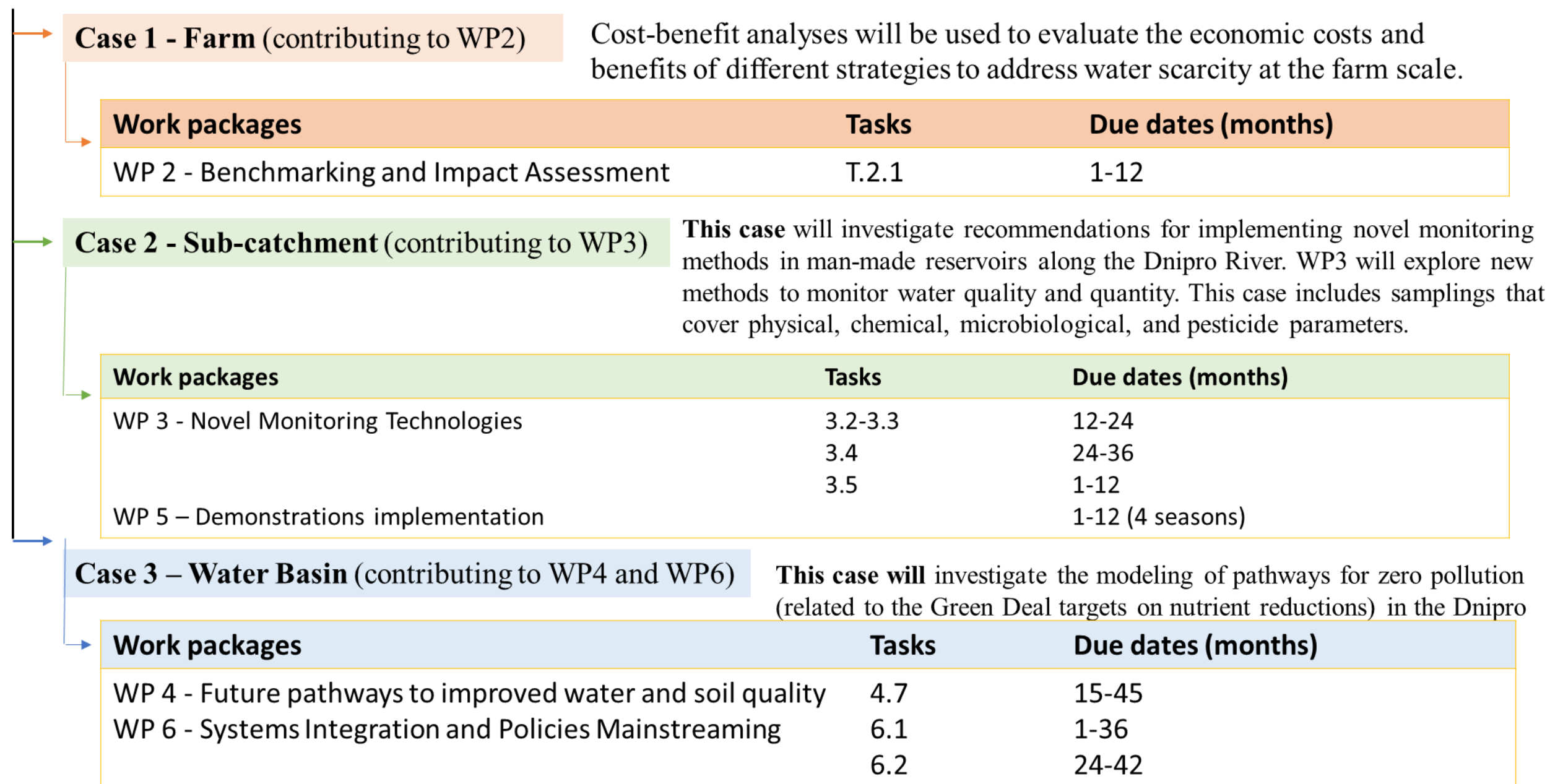
- **Scale:** Dnipro River Basin – reservoirs and rivers
- **Tools:** monitoring water quality *to support modeling of future pathways for zero pollution in the Dnipro Basin under emerging challenges and threats*





DG3(Ukraine) - DS “Future pathways for zero pollution in the Dnipro Basin under emerging challenges and threats”

Three case studies and contributions to WPs:





DG3(Ukraine) - DS “Future pathways for zero pollution in the Dnipro Basin under emerging challenges and threats”

Three case studies and contributions to WPs:

Case 1 - Farm (contributing to WP2) Cost-benefit analyses will be used to evaluate the economic costs and benefits of different strategies to address water scarcity at the farm scale.

Work packages	Tasks	Due dates (months)
WP 2 - Benchmarking and Impact Assessment	T.2.1	1-12

Case 2 - Sub-catchment (contributing to WP3) **This case** will investigate recommendations for implementing novel monitoring methods in man-made reservoirs along the Dnipro River. WP3 will explore new methods to monitor water quality and quantity. This case includes samplings that cover physical, chemical, microbiological, and pesticide parameters.

Work packages	Tasks	Due dates (months)
WP 3 - Novel Monitoring Technologies	3.2-3.3	12-24
	3.4	24-36
	3.5	1-12
WP 5 – Demonstrations implementation		1-12 (4 seasons)

Case 3 – Water Basin (contributing to WP4 and WP6) **This case will** investigate the modeling of pathways for zero pollution (related to the Green Deal targets on nutrient reductions) in the Dnipro

Work packages	Tasks	Due dates (months)
WP 4 - Future pathways to improved water and soil quality	4.7	15-45
WP 6 - Systems Integration and Policies Mainstreaming	6.1	1-36
	6.2	24-42

NUBiP of Ukraine

WU-DES

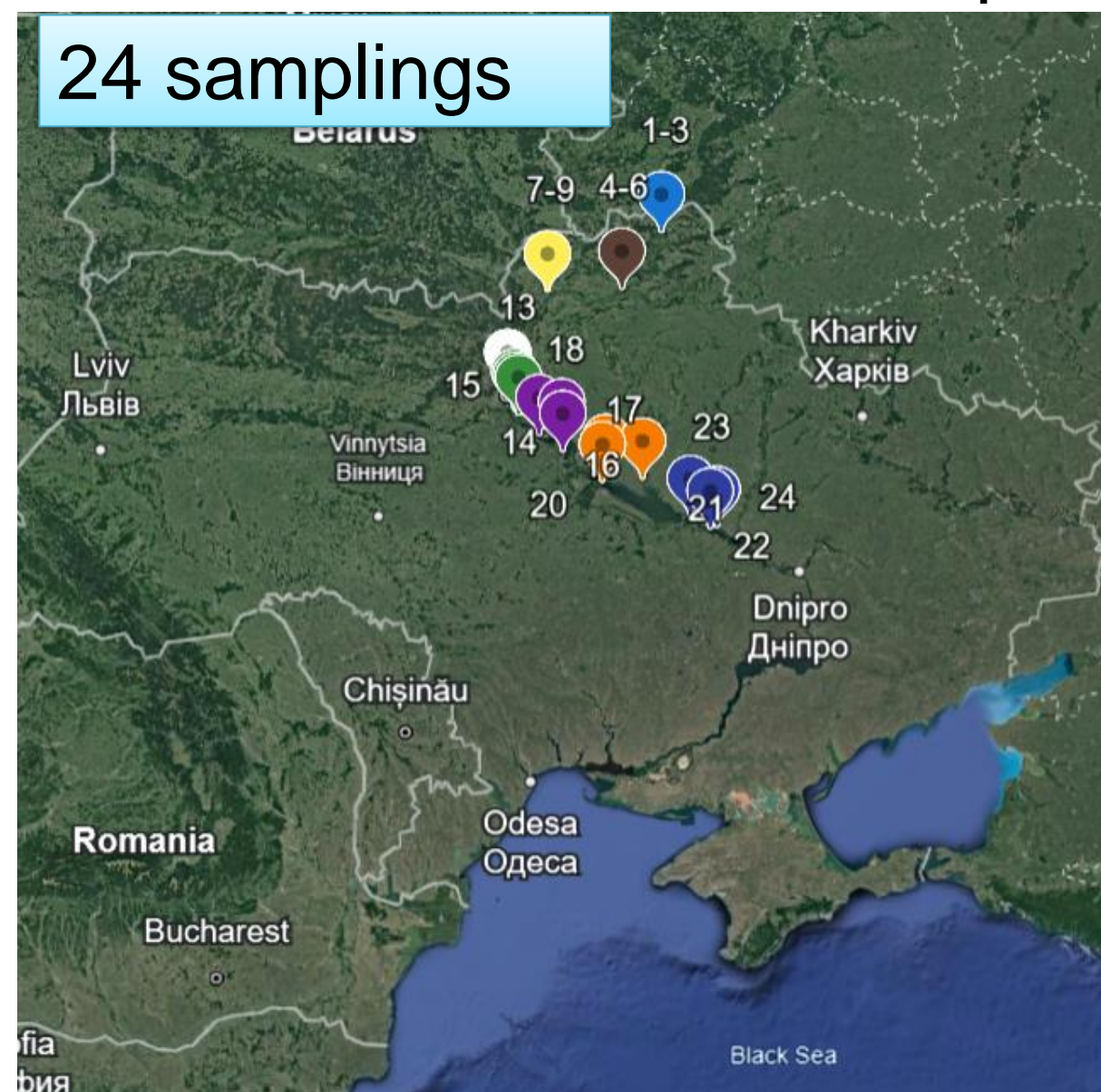
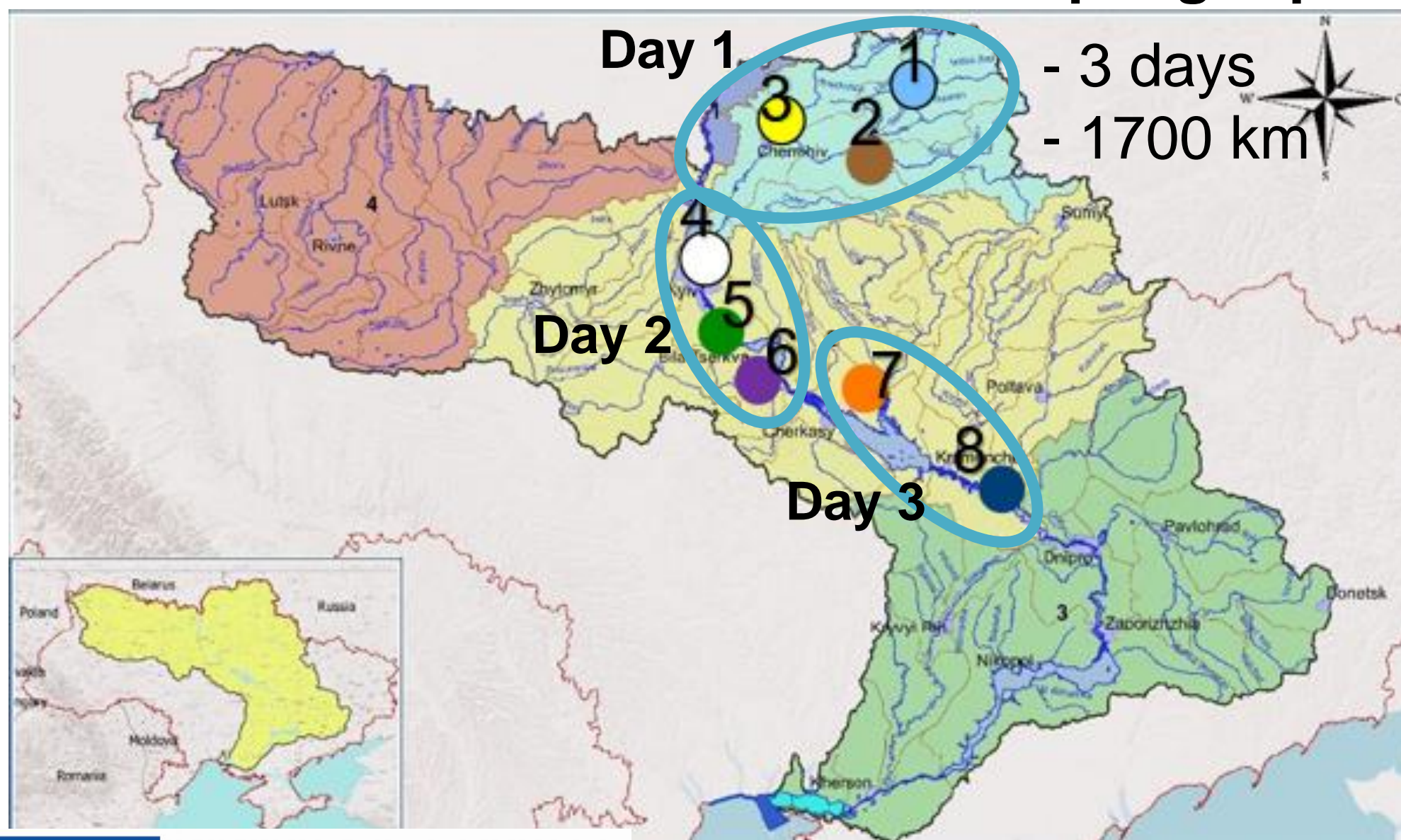




DG3(Ukraine) - DS "Future pathways for zero pollution in the Dnipro Basin under emerging challenges and threats"

Summer/October 2024: water sampling trip

Each location includes 3 samplings

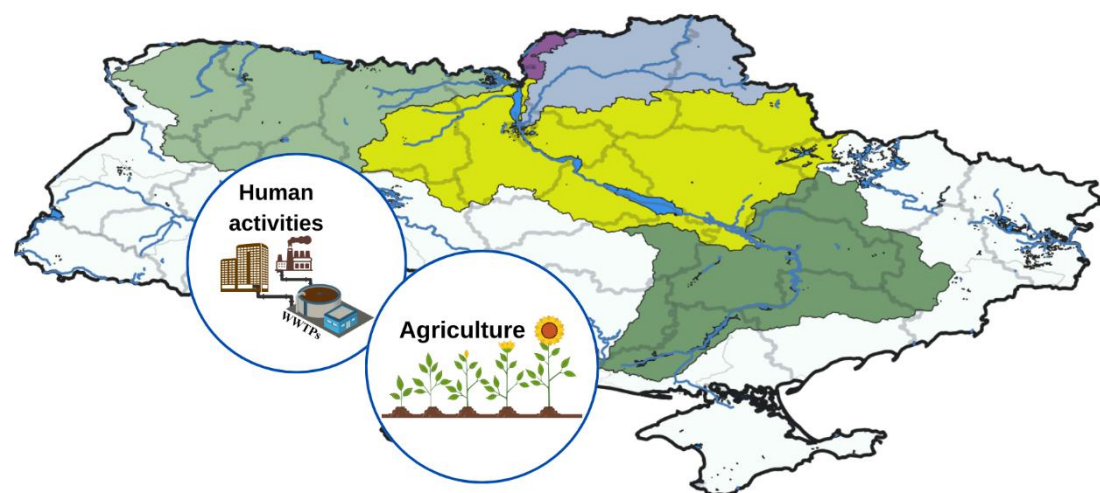




What is the progress?



Demonstration Site in Ukraine – Dnipro River Basin



Case 1: Cost-benefit analyses to evaluate the economic costs and benefits of different strategies to address water scarcity on the farm scale

We start to collect datasets of agricultural activities (2010-2023):

Crop area: grain (wheat, barley, corn, rye, oats), industrial (sunflower, beet, soy, rape), vegetables, fodder, fruits.

Crop yield: grain, industrial, vegetables, fruits.

Fertilizers: mineral, nitrogen, phosphorus, potash, organic

Persons who are working on:



Vita Strokal



Oleksandr Labenko

Contribute in:

T.6.1: Integration of agricultural influences

T.2.2: Assess agricultural policies

T.2.1: Cost-benefit analysis

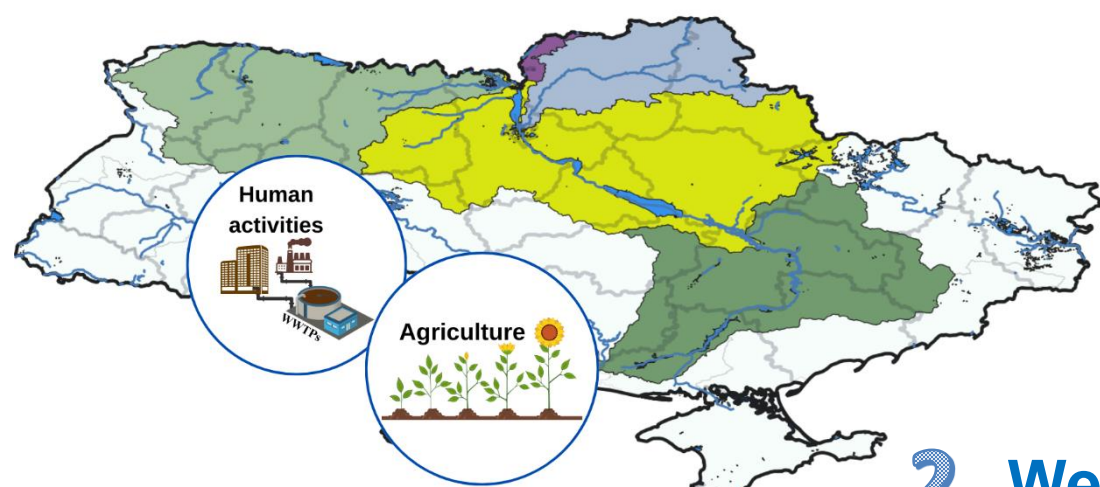




What is the progress?



Demonstration Site in Ukraine – Dnipro River Basin



Case 2: Sub-catchment, water monitoring

1 We have done two water sampling trips!

The person who is responsible for the coordination, implementation, and evaluation of DS:



Vita Strokal

Contribute in:

T.3.1, 3.4: Water quality monitoring and assessment

2 We start to collect datasets of historical meteorological data:

Precipitation and air temperature of all regions of Ukraine (1981-2020)



The person who is working on this task:

Svitlana Palamarchuk

Contribute in:

T.3.5: Data sources (climate, agriculture ...)

Precipitation and air temperature of the meteostation near the samplings (1970-2023)

The person who is working on this task:



Maryna Ladyka

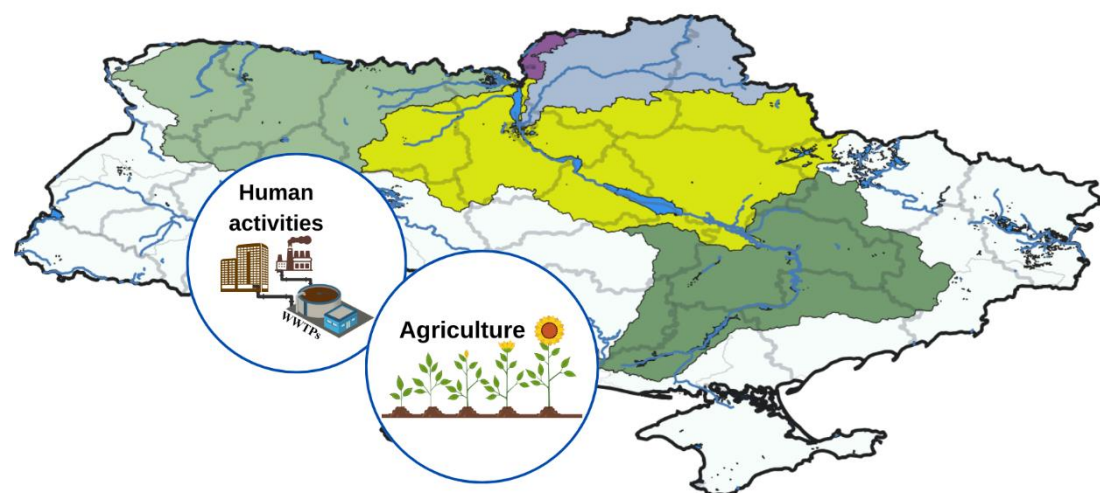




What is the progress?



Demonstration Site in Ukraine – Dnipro River Basin



Case 3: Water basin – The MARINA model adapted for Ukraine from the models developed in the Netherlands

We start to collect datasets of Socio-economic drivers and urbanization of the Dnipro River Basin:

Population, rural people connected to sewage systems, Percentage of the wastewater treated, Land use, Livestock number, Water discharge for dams ...

Contribute in:

T.6.1: Integration of agricultural influences

T.4.5-4.6: Integrated modeling on different scales with solutions

T.3.1, 3.4: Water quality monitoring and assessment

T.2.2: Assess agricultural policies

Persons who are working on:



Olena Naumovska



Ludmila Vagaluk



Vita Strokal

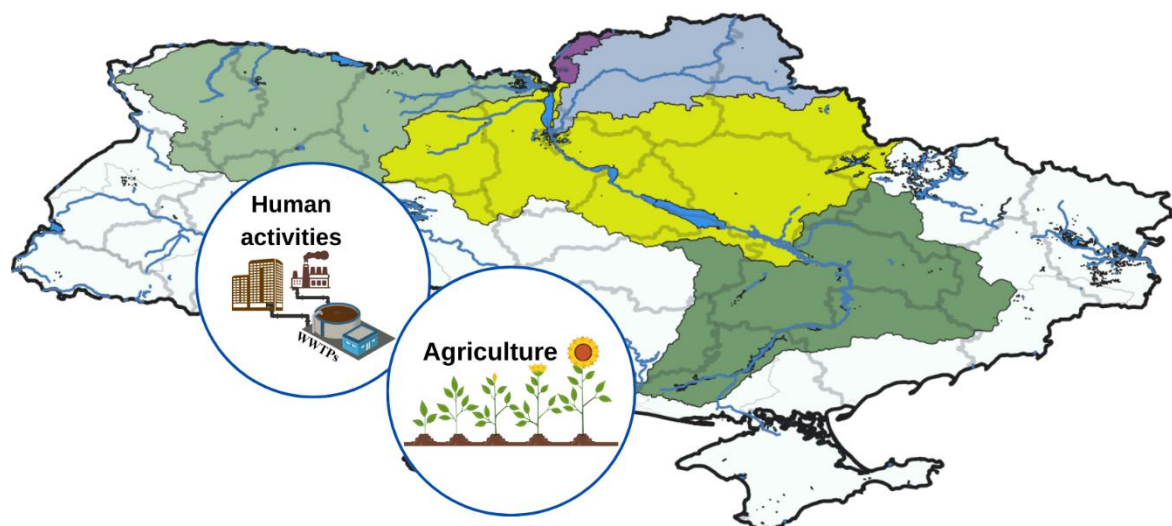




Discussion – needs



Demonstration Site in Ukraine – Dnipro River Basin



Urgent issues!!!

Case 1: Cost-benefit analyses to evaluate the economic costs and benefits of different strategies to address water scarcity on the farm scale

1. What do we need to do to achieve T2.1-2.3?
2. Which parameters do we need to use for cost-benefit analyses?
3. Where can we find how many pesticides were applied to the crops?

Deadline:
1 January 2025

T.2.1: Cost-benefit analysis

T.2.2: Assess agricultural policies

Case 2: Sub-catchment

1. How do we can collect existing indicators of water quantity and quality?
2. We need to discuss with the stakeholders and identify their roles and practices (water and soil management) and needs. Maybe we need to make the survey and ask them. What do you think?

T.2.4: Review existing indicators of water quantity and quality

Identify Nature-Based Solutions

Deadline:
1 January 2025





Next step



Finish to 20 December 2024:

- Datasets of the historical meteorological data (**It is compulsory!**)
- Datasets of agricultural activities (if it is possible!).
- Datasets of the social-economic drivers of the Dnipro River Basin (if it is possible!)
- Start to work on the cost-benefit analyses

Working with shapefiles (Vita Strokal)

Working on analyses of water parameters (Vita Strokal, Larysa Voitenko)

Other suggestions or recommendations ...





Next meetings



To have the strong achievements of this project I propose to have the kick-off meeting every month!

Data	Time	Impotent aspects	Tasks that we need to achieve
25.12.2024	14:30	Datasets of meteorological data, agriculture, and social-economic drivers. Cost-benefit analyses (T2.1)	NDSs
29.01.2025	14:30	Assess agricultural policies (T2.2). Review existing indicators of water quantity and quality (T2.4). Tender (2) – water sampling.	T2.1, T2.2, T2.4, T3.1, T3.4
26.02.2025	14:30	Water sampling. Working with stakeholders Stakeholder mapping and analyses (T5.1). NBSs	T5.1
26.03.2025	14:30	Water monitoring analyses. Prepare for soil sampling. Tender – soil sampling??? . Working with stakeholders	
30.04.2025	14:30	Water sampling. Integration of agricultural influences (T6.1)	T6.1
28.05.2025	14:30	Soil sampling. Water monitoring analyses.	T3.1, T3.4
25.06.2025	14:30	Prepare the first draft of the report. Soil and water analyses. Overview of what we need. Make the water protocols	Draft report





Next meetings



To have the strong achievements of this project I propose to have the kick-off meeting every month!

Data	Time	Impotent aspects	Tasks that we need to achieve
27.08.2025	14:30	Discussion about preparing the first final report that will be presented in the consortium meeting in October. Assessment of NDSs, water, and soil management (T4.1-4.3). Working with stakeholders	Draft final report T4.1-4.3
24.09.2025	14:30	Present the final report that will be presented in the consortium meeting in October. Assessment of NDSs, water and soil management (T4.1-4.3)	Final report T4.1-4.3
29.10.2025	14:30	Integration of the needs of agricultural users (T6.2). Discussion of the consortium meeting	T6.2
26.11.2025	14:30	Inputs the main results in the websites.	
18.12.2025	14:30	Analyses what we need to achieve the tasks.	

Other suggestions or recommendations ...





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Thank You

We appreciate working with all of you!



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