

Wetlands Solutions *for the Future*

Learning from ALFAwetlands and
REWET Projects

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 Brussels, Belgium



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Decision Support System for Wetland Restoration - REWET

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SUSTAINABLE RESTORATION AND CONSERVATION OF TERRESTRIAL WETLANDS

REWET - REStoration of WETlands to minimise emissions and maximise carbon uptake.
A strategy for long-term climate mitigation. Funded by the European Union.

REWET DECISION SUPPORT SYSTEM

Plan wetland restoration for a changing climate

The REWET DSS helps wetland managers, landowners and other interested stakeholders explore how local conditions, restoration choices and future climate scenarios may influence wetland outcomes. It brings together the results available for each REWET Open Lab, allowing users to review current conditions, explore different scenarios, and compare restoration options.

Main Objective of the DSS

- **Support users to make better (informed) decisions:** Provide wetland managers with an online, user-friendly tool to compare scenarios and identify the most sustainable management or restoration strategies for their needs, taking into account a broad range of variables to enable a holistic assessment. To this end, the tool:
 - Integrates field data collected from the REWET Open Labs with the GHG models and Sustainability Indicators developed and monitored throughout the project, providing evidence-based advice.
 - Provides a clear, polished and user-friendly visual interface tailored to the target audience.
 - Is deployed online and made openly accessible to maximise its reach and uptake.

What information the DSS takes into account?

REWET Data, Models and Indicators

- **Open Lab contextual data:**
 - Geographical location.
 - Land use of the area.
 - Wetland type → Freshwater wetland, peatland or floodplain.
 - Restoration technique → Rewetting, paludiculture or soil transplantation.
- **Modelling and projection data:**
 - Climate change projections.
 - Time horizons → 2022-2030 / 2030-2050 / 2050-2100.
- **Sustainability impact assessment data:**
 - Environmental Impact → Effects on GHG emissions and carbon sequestration.
 - Economic Impact → Potential economic costs, losses and gains.
 - Social Impact → Potential effects on society and local communities.

Intended Use

- What can you do?
 - Explore the context of the seven EU Open Labs.
 - Review their current conditions.
 - Explore future scenarios.
 - Explore climate, GHG and sustainability assessment results.
- Who is it for?
 - The tool is **primarily aimed at wetland managers and landowners**, but it also supports any other stakeholders involved in wetland restoration planning and evaluation.

How it works

Start by selecting an Open Lab and follow the available pathway:

1

Choose an Open Lab

Use the map to select a site and open its local profile.

2

Review the context

Check the wetland type, land use, restoration context and available data.

3

Select an option

Choose a supported restoration measure, management option or future scenario.

4

Run the assessment

Calculate the results available for the selected Open Lab and configuration.

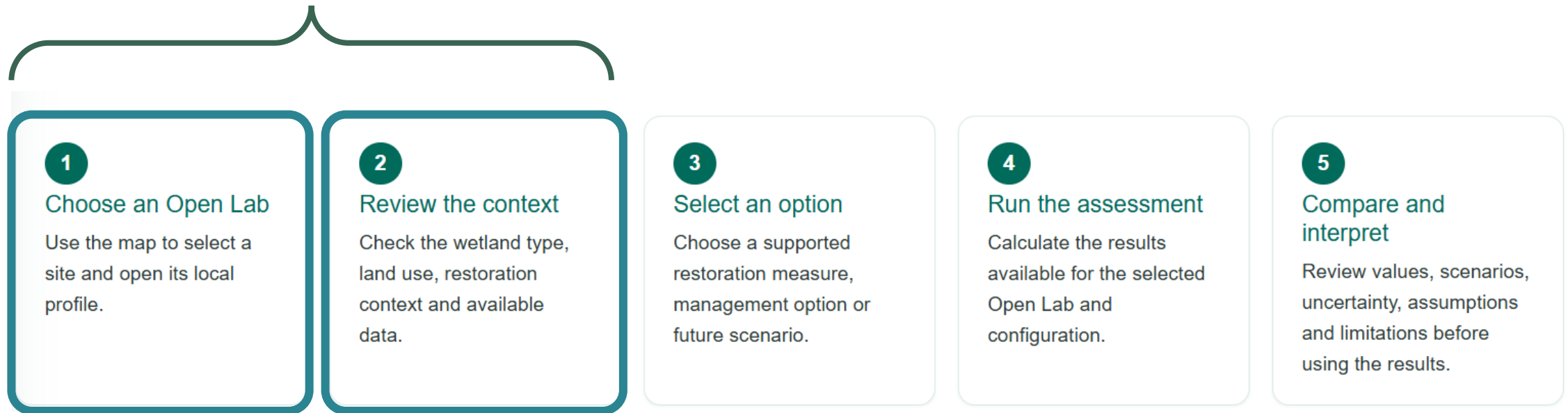
5

Compare and interpret

Review values, scenarios, uncertainty, assumptions and limitations before using the results.

The first steps are to **(1) select an Open Lab** and **(2) review its context**. Each Open Lab represents a specific type of ecosystem (**Freshwater Wetland, Peatland or Floodplain**) with particular biological, climatic and meteorological characteristics.

This information can help external wetland managers identify an Open Lab with conditions similar to those of their own ecosystem.



OVERVIEW

Open Labs

Pick an Open Lab to explore its context and start an assessment.

OL#1
Netherlands

OL#2
Austria

OL#3
Finland

OL#4
Estonia

OL#5
Belgium

OL#6
Italy

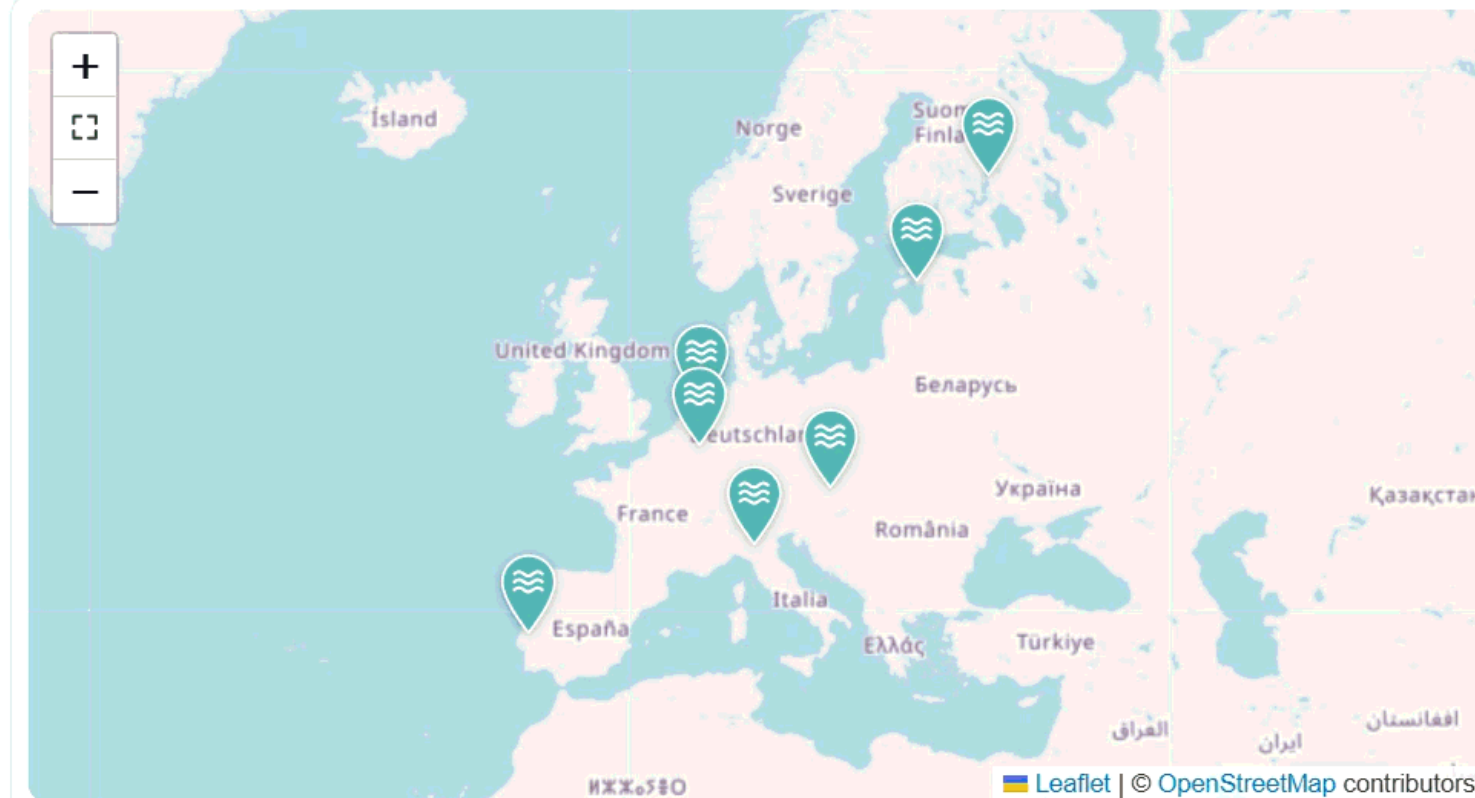
OL#7
Portugal

START HERE

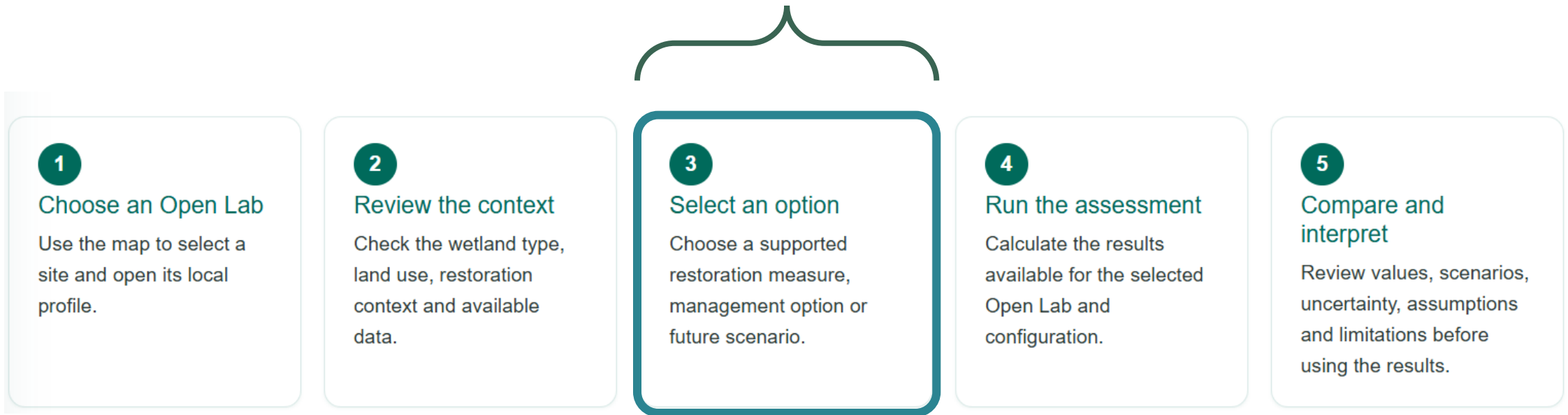
Each marker is an Open Lab you can work on. Choose one to read its context and the data recorded for it, then continue into an assessment from its profile.

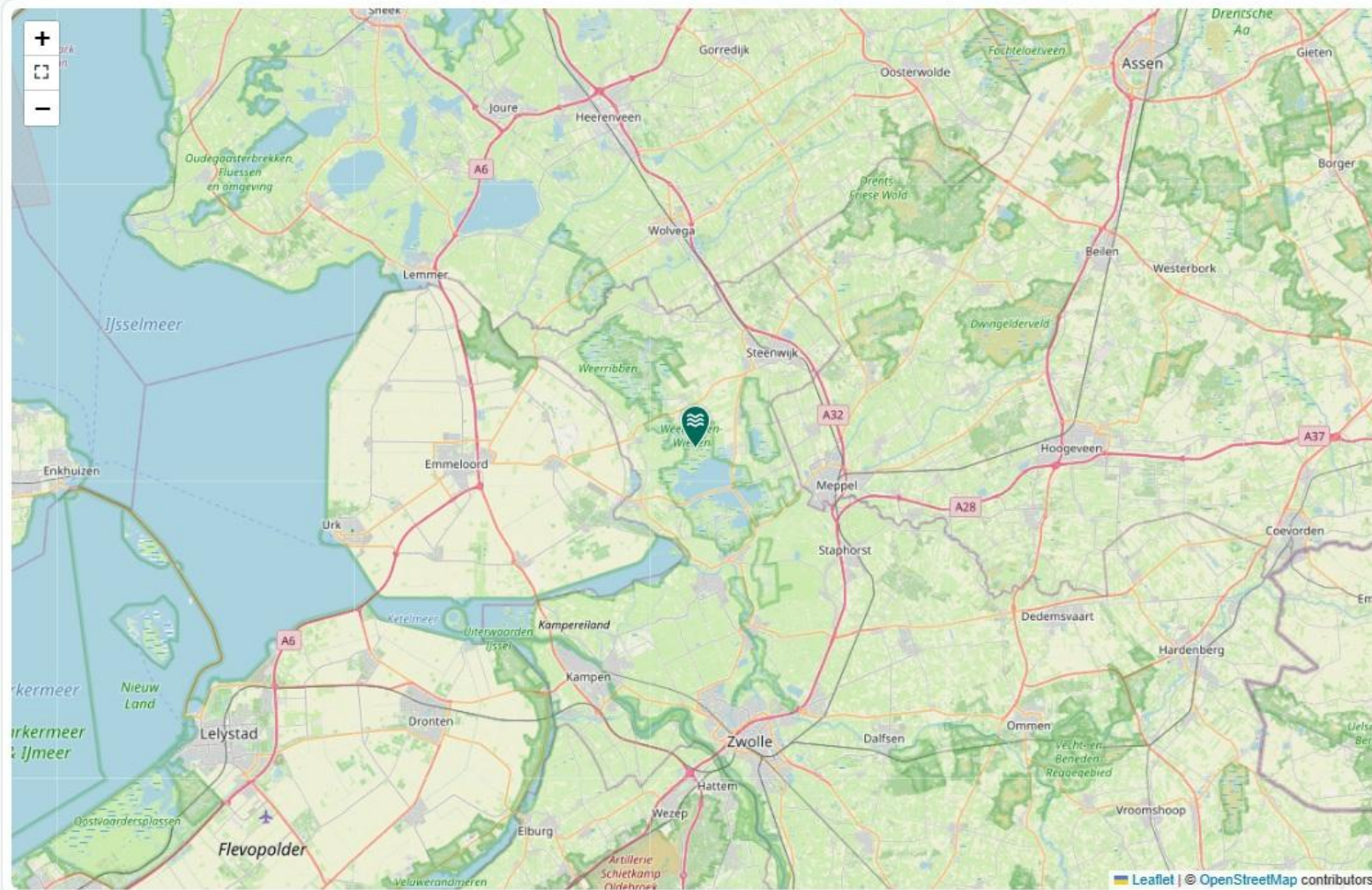
1. Choose an Open Lab on the map or in the list.
2. Review its current condition and the data recorded for it.
3. Run a greenhouse gas or climate scenario.
4. Compare the results and what they leave uncertain.

[Read what the DSS does and who it is for](#)



The third step is to **select one of the four modules (3)** available in the Decision Support System tool.





OL#1

Dutch Open Lab

Netherlands · Overijssel · Inland

Freshwater marsh complex in the Weerribben-Wieden National Park. Polder area with fully managed water levels, significant tourism, and long-term monitoring via Eddy Covariance and portable gas analysers.

[Back to overview](#)

CONTINUE WITH THIS OPEN LAB

Sustainability Assessment

GHG Calculations

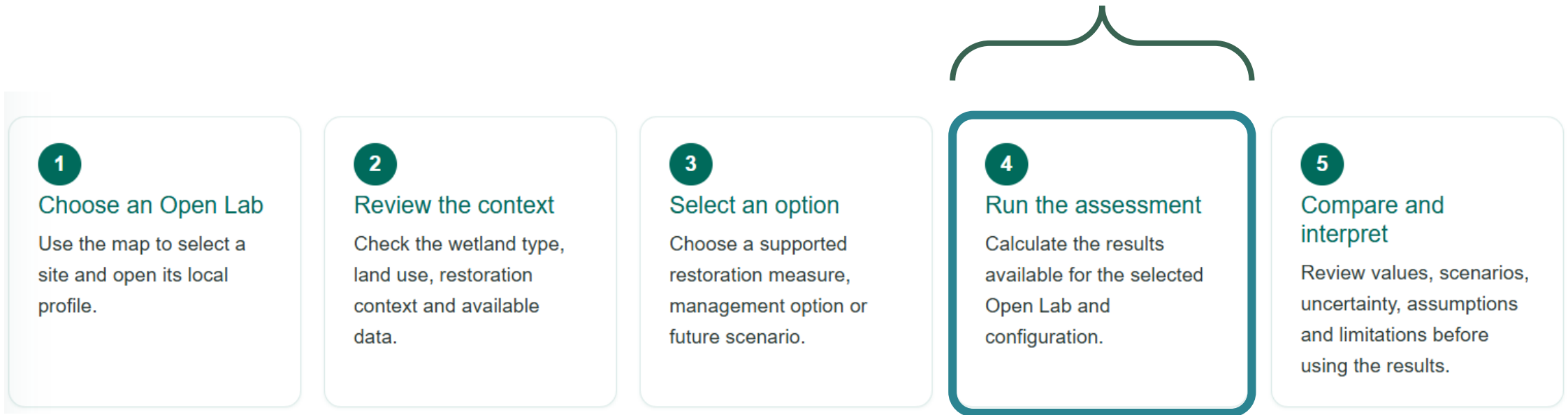
Climate/Future

Ecosystem Services

There are 4 modules available:

1. **Sustainability Assessment**
2. **GHG Calculations**
- ↕ Closely related;
both are calculated simultaneously.
3. **Projections under Future Climate**
4. **Ecosystem Services Information**

The fourth step is to carry out the assessment **(4)** using the selected module.
The four modules will be explained in more detail in the following slides.



1. Sustainability Assessment Module

SUSTAINABILITY

Current Open Lab condition

The assessment uses the most recent information available for the specific Open Lab, but the inputs can be modified according to each user's exploration and research needs.

Current condition Sustainability

This summary is calculated from the latest reviewed information recorded for the Open Lab.

Environmental **79 %**

Wetland and ecological condition.

Economic **46 %**

Costs, resources and economic conditions.

Social **67 %**

Participation, access and local benefits.

Overall **64 %**

Combined result across the three areas.

Higher percentages indicate more favourable conditions. Only indicators with available information are included; missing information is not scored as zero.

Within the Sustainability Module, three core pillars can be identified:

Environmental

Present wetland and ecological condition

13 of 13 reviewed

Edit values ▼

Economic

Present costs, resources and economic condition

7 of 7 reviewed

Edit values ▼

Social

Present effects on people, participation, access and local benefits

6 of 6 reviewed

Edit values ▼

You can consult, edit and review each of the parameters used in the calculations

Environmental

Present wetland and ecological condition

13 of 13 reviewed

Hide values ^

CONFIDENCE SCOPE

Recorded indicator value

CONFIDENCE SOURCE

Supplied by a project deliverable for some of these values and recorded by a coordinator for others

► How is confidence determined?

CO2 peak fluxes (Eddy Covariance)

Peak CO2 uptake measured by Eddy Covariance system. Negative values indicate CO2 sink (uptake from atmosphere).

DATA AVAILABILITY Available

Recorded value -6 g C/m²·day **Confidence** High

Source Project deliverable D4.7 (D4.7 Env-1 OL#1)

Current condition

Strong CO2 sink



Evidence confidence

High



Environmental Module

CO₂ peak fluxes (Eddy Covariance)

Peak CO₂ uptake measured by Eddy Covariance system. Negative values indicate CO₂ sink (uptake from atmosphere).

DATA AVAILABILITY **Available**

Recorded value -6 g C/m²-day **Confidence** High **Source** Project deliverable D4.7 (D4.7 Env-1 OL#1)

Current condition

Strong CO₂ sink

Evidence confidence

High

CH₄ peak fluxes (Eddy Covariance system)

Peak methane emissions measured by Eddy Covariance system. Lower emissions are more favourable for sustainability.

DATA AVAILABILITY **Available**

Custom input. This value is a user-defined assumption, not a validated observation.

Reference: 0.08 g C/m²-day

Recorded value 0.06 g C/m²-day **Confidence** High

Source

Entered in the DSS (Manual entry by admin at 2026-09-09T13:18:07.5748795Z; Coordinator-reviewed update to the reusable current Open Lab Sustainability profile.; Previous source type: manual; Previous source: Manual entry by admin at 2026-09-04T10:10:20.0949238Z; Coordinator-reviewed update to the reusable current Open Lab Sustainability profile.; Previous source type: manual; Previous source: Manual entry by admin at 2026-09-04T10:09:34.8438956Z; Coordinator-reviewed update to the reusable current Open Lab Sustainability profile.; Previous source type: seed:D4.7; Previous source: D4.7 Env-2 OL#1)

Current recorded value (g C/m²-day)

0,06

Reset to reference

Evidence confidence

High

CH₄ fluxes (portable gas analyser)

Methane fluxes measured by portable gas analyser across Open Labs. Lower emissions are more favourable.

DATA AVAILABILITY **Available**

Recorded value QS g C/m²-day **Confidence** Low **Source** Project deliverable D4.7 (D4.7 Env-3 OL#1)

Data note Estimated or proxy information: Qualitative Score (QS) - OL coordinator / Database REWET. No direct numeric portable gas analyser measurement available.

Current condition

Low emissions

Evidence confidence

Low

CO₂ fluxes (portable gas analysers)

CO₂ fluxes measured by portable gas analyser. Lower emissions are more favourable.

DATA AVAILABILITY **Available**

Recorded value No quantified portable gas analysers data g C/m²-day **Confidence** Low **Source** Project deliverable D4.7 (D4.7 Env-4 OL#1)

Current condition

Low emission

Evidence confidence

Low

N₂O fluxes (portable gas analyser)

Nitrous oxide fluxes measured by portable gas analyser. Lower emissions are more favourable.

DATA AVAILABILITY **Available**

Recorded value Very low / no quantified data µg N/m²-day **Confidence** Low **Source** Project deliverable D4.7 (D4.7 Env-5 OL#1)

Current condition

Very low / near-zero emission

Evidence confidence

Low

Biodiversity (species richness and nativeness)

Combined assessment of species richness relative to expected range for wetland type and percentage of native species.

DATA AVAILABILITY **Available**

Recorded value 147 vascular plants, 99.3% native (1 invasive: Elodea nuttallii) **Confidence** High **Source** Project deliverable D4.7 (D4.7 Env-6 OL#1)

Current condition

Richness within/near upper expected range and >90% native

Evidence confidence

High

Environmental Module

Evolution of restored area (LULC and Surface-Water Changes)

Land Use/Land Cover change and surface-water occurrence frequency indicating wetland restoration progress over time.

DATA AVAILABILITY Available

Recorded value Freshwater marshes expanded from 12% (1989) to 19% (2022). Small water bodies increased ~ 4%. **Confidence** High **Source** Project deliverable D4.7 (D4.7 Env-9 OL#1)

Current condition

Strong positive change - clear increase in wetland or flooded area ▼

Evidence confidence

High ▼

Atmospheric nitrogen dioxide (NO2)

Tropospheric NO2 column concentration. Lower concentrations indicate better air quality.

DATA AVAILABILITY Available

Recorded value 1.80×10^{-4} mol/m² **Confidence** High **Source** Project deliverable D4.7 (D4.7 Env-10 OL#1)

Current condition

Very high NO2 ▼

Evidence confidence

High ▼

Vegetation condition (NDVI)

Normalized Difference Vegetation Index indicating vegetation health and density. Higher values indicate denser, healthier vegetation.

DATA AVAILABILITY Available

Recorded value 0.6933 **Confidence** High **Source** Project deliverable D4.7 (D4.7 Env-11 OL#1)

Current condition

Dense vegetation ▼

Evidence confidence

High ▼

Soil Organic Carbon (SOC)

Soil organic carbon content as percentage. Higher organic content typical of peat soils is more favourable.

DATA AVAILABILITY Available

Recorded value ≈ 4 % **Confidence** Medium **Source** Project deliverable D4.7 (D4.7 Env-7a OL#1)

Current condition

Moderate ▼

Evidence confidence

Medium ▼

C/N ratio

Carbon-to-nitrogen ratio in soil. Existing records keep their reviewed condition because the documented observation and scoring bases are not consistent.

DATA AVAILABILITY Available

Recorded value 15.3 **Confidence** High **Source** Project deliverable D4.7 (D4.7 Env-7b OL#1)

Current condition

Balanced mineralisation / retention ▼

Evidence confidence

High ▼

Dissolved Oxygen (DO)

Dissolved oxygen concentration in water. Higher DO levels indicate better water quality and aquatic habitat conditions.

DATA AVAILABILITY Available

Recorded value 7.10 mg/L **Confidence** High **Source** Project deliverable D4.7 (D4.7 Env-8a OL#1)

Current recorded value (mg/L)

7,1

Evidence confidence

High ▼

pH

Water pH level. Near-neutral pH (6.5-7.5) indicates optimal conditions for most aquatic life.

DATA AVAILABILITY Available

Recorded value 6.75 **Confidence** High **Source** Project deliverable D4.7 (D4.7 Env-8b OL#1)

Current condition

Near-neutral ▼

Evidence confidence

High ▼

Economic Module

Restoration CAPEX per hectare

Capital expenditure for wetland restoration per hectare. Lower investment requirements are more economically favourable.

DATA AVAILABILITY **Available**

Recorded value 4091 €/ha **Confidence** High **Source** Project deliverable D4.7 (D4.7 Ec-1a OL#1)

Current recorded value (€/ha)

4091

Evidence confidence

High

Restoration OPEX per hectare per year

Annual operational expenditure for wetland restoration maintenance per hectare. Lower maintenance costs are more favourable.

DATA AVAILABILITY **Available**

Recorded value 490 €/ha-year **Confidence** High **Source** Project deliverable D4.7 (D4.7 Ec-1b OL#1)

Current recorded value (€/ha-year)

490

Evidence confidence

High

Direct market valuation

Total direct market value including biomass, tourism, and other commercial activities per hectare per year.

DATA AVAILABILITY **Available**

Recorded value Biomass = 618; local/guided tourism Level 3 proxy; regional/general tourism = 3217 €/ha-year **Confidence** Medium **Source** Project deliverable D4.7 (D4.7 Ec-2 OL#1)

Current condition

Very high market value - significant regional contribution

Evidence confidence

Medium

Economic mitigation of natural disasters (avoided cost)

Qualitative assessment of the wetland's capacity to mitigate floods or droughts and protect assets and populations.

DATA AVAILABILITY **Available**

Recorded value QS=1: Not relevant - polder area with fully managed water level. **Confidence** High **Source** Project deliverable D4.7 (D4.7 Ec-3 OL#1)

Current condition

Very low - minimal or no protective role

Evidence confidence

High

Value of water purification services (Replacement Cost)

Assessment of the wetland's capacity to remove nutrients and sediment, supporting downstream water quality.

DATA AVAILABILITY **Available**

Recorded value QS=1: No service present. Fully managed polder with artificial drainage. **Confidence** High **Source** Project deliverable D4.7 (D4.7 Ec-4 OL#1)

Current condition

Service absent or negligible

Evidence confidence

High

Carbon sequestration value

Assessment of the wetland's net greenhouse gas balance and carbon sink capacity.

DATA AVAILABILITY **Available**

Recorded value QS=2: Partial CO2 coverage (~50%) and continuous CH4 emission indicate weak overall sink. **Confidence** Medium **Source** Project deliverable D4.7 (D4.7 Ec-5 OL#1)

Current condition

Near neutral to weak sink

Evidence confidence

Medium

Cultural and recreational value (travel cost method)

Estimated recreational value per hectare per year based on travel cost method, visitor numbers, and expenditure data.

DATA AVAILABILITY **Available**

Recorded value = 3700 €/ha-year **Confidence** Medium **Source** Project deliverable D4.7 (D4.7 Ec-6 OL#1)

Current condition

High recreational activity

Evidence confidence

Medium

Social Module

Cultural visitors per area

Number of cultural visitors per year to the wetland site. Higher visitation indicates stronger public engagement.

DATA AVAILABILITY Available

Recorded value 80000 visitors/year **Confidence** High **Source** Project deliverable D4.7 (D4.7 S-1 OL#1)

Current condition

Very high cultural use and strong public presence

Evidence confidence

High

Educational actions related to wetlands

Number of educational activities per year at the wetland site including school visits, training, and guided tours.

DATA AVAILABILITY Available

Recorded value > 10 tours/week (in peak periods) activities/year **Confidence** Medium **Source** Project deliverable D4.7 (D4.7 S-2 OL#1)

Current condition

Very high educational engagement

Evidence confidence

Medium

Employees created by restoration

Qualitative assessment of employment effects from wetland restoration activities.

DATA AVAILABILITY Available

Recorded value Unknown (contractors and managers only) **Confidence** Medium **Source** Project deliverable D4.7 (D4.7 S-3 OL#1)

Current condition

No or negligible employment creation

Evidence confidence

Medium

Aesthetic value

Integrated qualitative assessment of landscape aesthetic value based on coordinator scoring and public surveys.

DATA AVAILABILITY Available

Recorded value Coordinator QS=5; Public survey mean 4.2 (n<10). Integrated level: 5 **Confidence** Medium **Source** Project deliverable D4.7 (D4.7 S-4 OL#1)

Current condition

Exceptional aesthetic quality

Evidence confidence

Medium

Community sense of ownership

Assessment of the local community's perceived ownership and engagement with the wetland site.

DATA AVAILABILITY Available

Recorded value Coordinator QS=1; Public survey =3.8 (n<10). Integrated level: 1 **Confidence** Medium **Source** Project deliverable D4.7 (D4.7 S-5 OL#1)

Current condition

Very low or absent community ownership

Evidence confidence

Medium

Perceived safety of wetland area

Assessment of how safe visitors and community members perceive the wetland area to be.

DATA AVAILABILITY Available

Recorded value Coordinator QS=5; Public survey =4.4 (n<10). Integrated level: 5 **Confidence** Medium **Source** Project deliverable D4.7 (D4.7 S-6 OL#1)

Current condition

Very high perceived safety

Evidence confidence

Medium

2. GHG Calculations

GREENHOUSE GAS BALANCE ENGINE

GHG assessment

Select an Open Lab and project its future GHG balance.

Explore future climate and greenhouse-gas results

The two modules answer related but different questions. Climate/Future describes the projected climate conditions for an Open Lab. GHG calculation uses the relevant available inputs and models to estimate how wetland greenhouse-gas results may change. Explore them separately or move between them while keeping compatible context.

Current context: Dutch Open Lab · Intermediate emissions (SSP245) · Near term (2022-2030)

Closely related; both are calculated simultaneously.

Why? Because for future projections to be useful, current emissions need to be calculated so that they can be used as a basis for comparison.

Climate/Future

How may the climate conditions of the Open Lab change?

Explore projected climate conditions for the selected Open Lab, scenario and time horizon.

▼ Inputs, outputs and limitations

INPUTS

Typical inputs: Open Lab, climate scenario and time horizon.

OUTPUTS

Available outputs cover heat, meteorological drought and heavy precipitation, each compared with its stated historical reference.

LIMITATIONS

Results compare projected conditions with their stated historical reference. Magnitude, direction and uncertainty are only as available as the underlying data allows.

Open climate assessment

YOU ARE HERE

GHG calculation

How may the available GHG fluxes or indicators change under the selected context?

Explore modelled greenhouse-gas responses for the selected Open Lab and climate context.

▼ Inputs, outputs and limitations

INPUTS

Typical inputs: Open Lab, supported scenario and time horizon, plus any additional parameters required by the selected calculation.

OUTPUTS

Available outputs may include NEE/CO₂, CH₄ or other supported indicators.

LIMITATIONS

The calculation combines only the inputs the implemented models support. Coverage and model confidence may differ by gas and Open Lab.

HOW ARE THE MODULES RELATED?

Climate/Future shows the projected climate context. GHG calculation estimates a possible greenhouse-gas response using the inputs and models available for the selected Open Lab. Climate results describe future conditions; GHG results describe a modelled response. They should be interpreted together, but they are not the same result.

Results depend on the observations, climate datasets and models available for each Open Lab. Availability, uncertainty and calibrated coverage may differ between climate variables, gases, scenarios and time horizons.

3. Projections under Future Climate

FUTURE CLIMATE

Climate/Future assessment

Explore how heat, drought and heavy rainfall could change for an Open Lab under different future climates.

Explore future climate and greenhouse-gas results

The two modules answer related but different questions. Climate/Future describes the projected climate conditions for an Open Lab. GHG calculation uses the relevant available inputs and models to estimate how wetland greenhouse-gas results may change. Explore them separately or move between them while keeping compatible context.

Current context: Dutch Open Lab - Intermediate emissions (SSP245) - 2030

YOU ARE HERE

Climate/Future

How may the climate conditions of the Open Lab change?

Explore projected climate conditions for the selected Open Lab, scenario and time horizon.

► **Inputs, outputs and limitations**

GHG calculation

How may the available GHG fluxes or indicators change under the selected context?

Explore modelled greenhouse-gas responses for the selected Open Lab and climate context.

► **Inputs, outputs and limitations**

Open GHG assessment

HOW ARE THE MODULES RELATED?

Climate/Future shows the projected climate context. GHG calculation estimates a possible greenhouse-gas response using the inputs and models available for the selected Open Lab. Climate results describe future conditions; GHG results describe a modelled response. They should be interpreted together, but they are not the same result.

Results depend on the observations, climate datasets and models available for each Open Lab. Availability, uncertainty and calibrated coverage may differ between climate variables, gases, scenarios and time horizons.

1 - WETLAND

Choose the wetland to assess

Open Lab

Dutch Open Lab

2 - FUTURE CLIMATE

Select pathway and future horizon

Choose a possible emissions future and the period you want to explore.

Future climate scenario

Intermediate emissions - around 2.7 °C warming

Future period

2030

► **Start climate assessment**

3. Projections under Future Climate

FUTURE CLIMATE CONTEXT

Future climate scenarios

Select a future emissions pathway and time horizon for the modelled assessment.

Future emissions

Intermediate emissions - around 2.7 °C warming

Lower emissions - around 1.8 °C warming

Intermediate emissions - around 2.7 °C warming

High emissions - around 3.6 °C warming

Very high emissions - around 4.4 °C warming

Future year

2030

2030

2050

2100

GHG comparison

Loaded a previously completed GHG result. No new calculation was started.

[View existing result](#)

Climate/Future

Loaded a previously completed Climate/Future result. No new calculation was started.

[View existing result](#)

CALCULATION PROGRESS

Calculation completed

COMPLETED

Your result is ready.

Waiting

Preparing

Calculating

Checking result

Saving result

AUTHORIZED CONTROLS

Lifecycle actions

[View climate result](#)

[Refresh durable state](#)

GHG RESULT

[Download PDF](#)

[Download Word](#)

GHG restoration comparison

This comparison shows the greenhouse-gas effect of each restoration action under the selected future setting.

Restoration action	CO ₂ change (μmol CO ₂ /m ² /s)	Methane change (μmol CH ₄ /m ² /s)	Greenhouse-gas outlook
Rewetting – low intensity	0.0473 lower	0.0008 higher	Mixed result The model improves one gas but worsens the other compared with making no management change.
Rewetting – moderate intensity	0.0967 lower	0.0017 higher	Mixed result The model improves one gas but worsens the other compared with making no management change.
Rewetting – high intensity	0.1496 lower	0.0027 higher	Mixed result The model improves one gas but worsens the other compared with making no management change.
Vegetation restoration – low intensity	0.6936 lower	0.0022 lower	Better for both gases The model shows lower carbon-dioxide and methane exchange than making no management change.
Vegetation restoration – moderate intensity	1.2842 lower	0.0043 lower	Better for both gases The model shows lower carbon-dioxide and methane exchange than making no management change.
Vegetation restoration – high intensity	1.7226 lower	0.0059 lower	Better for both gases The model shows lower carbon-dioxide and methane exchange than making no management change.
Lowest for both gases			
Drainage – low intensity	0.0518 higher	0.0006 lower	Mixed result The model improves one gas but worsens the other compared with making no management change.

Compare different restoration approaches, including a no-intervention option, under different restoration scenarios.

Use the results to analyse trade-offs between restoration options and understand how changes in key indicators may influence their future performance and effectiveness.

CLIMATE/FUTURE RESULT

Climate/Future assessment result

You can download the assessment report

[Download PDF](#)

[Download Word](#)

These future conditions apply to the Open Lab and provide context for every restoration option above.

PRELIMINARY

Management recommendation

WETLAND

Dutch Open Lab

FUTURE PERIOD

2030

FUTURE CLIMATE

Intermediate emissions

Based on the projected climate changes, prioritise the following when comparing restoration options.

- Prioritise comparing rewetting and adjustable water-level management options that retain water during hotter periods.

► **Why this recommendation?** The projected changes this recommendation rests on

FUTURE PERIOD

2030

FUTURE CLIMATE

Intermediate emissions

CLIMATE STRESS

Moderate

STRONGEST PROJECTED CHANGE

Hotter conditions

By 2030 under intermediate emissions, this assessment identifies hotter conditions as the strongest projected climate change.

Expected climate changes

Hotter conditions

Noticeable increase expected

The selected future period is expected to be noticeably hotter.

Longer dry periods

Little change expected

Only a small change in the length of dry periods is expected.

Intense rainfall

Little change expected

Only a small change in intense rainfall is expected.

REWET DSS - Climate outlook

Summary for the Open Lab coordinator

Assessment details

Wetland: Dutch Open Lab

Future period: 2030

Future climate: Intermediate emissions

By 2030 under intermediate emissions, this assessment identifies hotter conditions as the strongest projected climate change.

Decision-support summary

Climate stress: Moderate

Strongest projected change: Hotter conditions

Based on the projected climate changes, prioritise the following when comparing restoration options.

Preliminary management recommendation

1. Prioritise comparing rewetting and adjustable water-level management options that retain water during hotter periods.

Expected climate changes

Hotter conditions: Moderate stress - noticeable increase expected.
The selected future period is expected to be noticeably hotter.

Longer dry periods: Low stress - little change expected.
Only a small change in the length of dry periods is expected.

Intense rainfall: Low stress - little change expected.
Only a small change in intense rainfall is expected.

How these numbers are calculated

How far this indicator moves in the harmful direction, on a 0 to 1 scale. It measures adverse change only.

The scale saturates: any adverse change of three baseline standard deviations or more reports 1, so two different futures can share the same value.

Change in the beneficial direction is reported as 0, the same as no change. A 0 does not distinguish an improvement from a still result.

The lowest and highest values across the six climate models of the ensemble, with the median as the central value. Each model is normalised before the ensemble is formed. It is the spread between models. It is not a confidence interval and carries no observational uncertainty.

Models: AWI-CM-1-1-MR, BCC-CSM2-MR, CMCC-CM2-SR5, EC-Earth3, MPI-ESM1-2-HR, MRI-ESM2-0. Method climate-future-methodology-v1.

4. Ecosystem Services Information

The results of these models were produced by the **Climate Research Foundation (FIC)**, a REWET partner. They provide information on the **Ecosystem Services of the REWET Open Labs**, distinguishing between **Provisioning Services, Regulating Services, Cultural Services and Supporting Services**.

Dutch Open Lab · Netherlands · Inland

Future climate impact on ecosystem services

Higher scores indicate stronger projected climate impact according to the referenced REWET assessment. They do not represent the amount, quality, or economic value of the ecosystem service.

Assessment

Analysis

Analysis: climate-impact score derived from the BFV-KEA assessment before the plant-biodiversity adjustment.

Final (SDM-adjusted)

Final (SDM-adjusted): score after applying the plant-species richness adjustment described in REWET D4.4.

► Evidence, source and limitations

OL#1

Ecosystem Services

This section summarises the ecosystem services associated with the selected Open Lab, the evidence supporting them, and the available assessment of future climate impacts. Evidence coverage and maturity vary by site.

Dutch Open Lab · Netherlands · Inland

Future climate impact on ecosystem services

Higher scores indicate stronger projected climate impact according to the referenced REWET assessment. They do not represent the amount, quality, or economic value of the ecosystem service.

Assessment	Score	Rating	Scale
Analysis Analysis: climate-impact score derived from the BFV-KEA assessment before the plant-biodiversity adjustment.	1.85	Medium	0-4
Final (SDM-adjusted) Final (SDM-adjusted): score after applying the plant-species richness adjustment described in REWET D4.4.	2.31	Medium	0-4

► Evidence, source and limitations

All

Provisioning

Regulating

Cultural

Supporting

PROVISIONING

Reed / transformed biomass / drinking water

Food / biomass / raw materials

D4.5 identifies harvested reed, transformed biomass and drinking water as direct-market products. Large-scale food production is constrained by Natura 2000 status and fen peatland conditions.

Identified in REWET

REGULATING

Flood mitigation

Hydrological regulation / flood mitigation

Wetlands act as natural buffers that reduce the impact of flooding.

Identified in REWET

Wetlands act as natural buffers reducing flood impacts.

PROVISIONING

Reed / transformed biomass / drinking water

Food / biomass / raw materials

D4.5 identifies harvested reed, transformed biomass and drinking water as direct-market products. Large-scale food production is constrained by Natura 2000 status and fen peatland conditions.

Identified in REWET

Harvested reed, transformed biomass and drinking water are identified as direct-market products of the park.

Proposed valuation method - no calculated value available

Market price / sales revenue

Valuation by market price or sales revenue is proposed. No amount is reported.

► Evidence, source and limitations

CULTURAL

Recreation / tourism

Recreation / ecotourism

Tourism is significant. D4.5 reports over 2,000 jobs in the leisure industry.

Site evidence available

>2000 jobs

Over 2,000 jobs are reported in the leisure industry.

Identified in REWET

Recreation and tourism are identified as a significant service of the site.

Proposed valuation method - no calculated value available

Travel Cost; BIZ model may be analysed

Travel cost is proposed as the valuation method, and a BIZ model may be analysed. No amount is reported.

► Evidence, source and limitations

REGULATING

Flood mitigation

Hydrological regulation / flood mitigation

Wetlands act as natural buffers that reduce the impact of flooding.

Identified in REWET

Wetlands act as natural buffers reducing flood impacts.

Proposed valuation method - no calculated value available

Avoided Cost

Avoided cost is proposed as the valuation method. No amount is reported.

► Evidence, source and limitations

SUPPORTING

Biodiversity support

Habitat provision / biodiversity support

D4.5 states that the site hosts over 500 endangered species.

Site evidence available

>500 endangered species

The site hosts over 500 endangered species.

Identified in REWET

Biodiversity support is identified as a service of the site.

Proposed valuation method - no calculated value available

Contingent Valuation; conservation costs

Contingent valuation and conservation costs are proposed. No amount is reported.

► Evidence, source and limitations

REGULATING

Water purification

Natural filtration improves the quality of the water extracted by Vitens.

Identified in REWET

Natural filtration improves the quality of water extracted by Vitens.

Proposed valuation method - no calculated value available

Replacement Cost

Replacement cost is proposed as the valuation method. No amount is reported.

► Evidence, source and limitations

SUPPORTING

Nutrient cycling

Natural nutrient cycling is identified, and could be valued by the cost of replacing it artificially.

Identified in REWET

Natural nutrient cycling is identified as a service of the site.

Proposed valuation method - no calculated value available

Replacement Cost

Replacement cost is proposed as the valuation method. No amount is reported.

► Evidence, source and limitations

REGULATING

Carbon storage / sequestration

D4.5 reports that the soils of the park store more than 175 tonnes of carbon per hectare.

Site evidence available

>175 t C/ha

Park soils store more than 175 tonnes of carbon per hectare.

Identified in REWET

Carbon storage and sequestration are identified as a service of the site.

Proposed valuation method - no calculated value available

Social Cost of Carbon

The social cost of carbon is proposed as the valuation method. No amount is reported.

► Evidence, source and limitations

Human benefit

A benefit to people that depends on these services without being one of them. Shown apart from the four categories, and never scored beside them.

HUMAN BENEFIT Benefit layer

Health and well-being

Access to green spaces is linked to physical and mental health.

Identified in REWET

Access to green spaces is linked to physical and mental health.

Proposed valuation method - no calculated value available

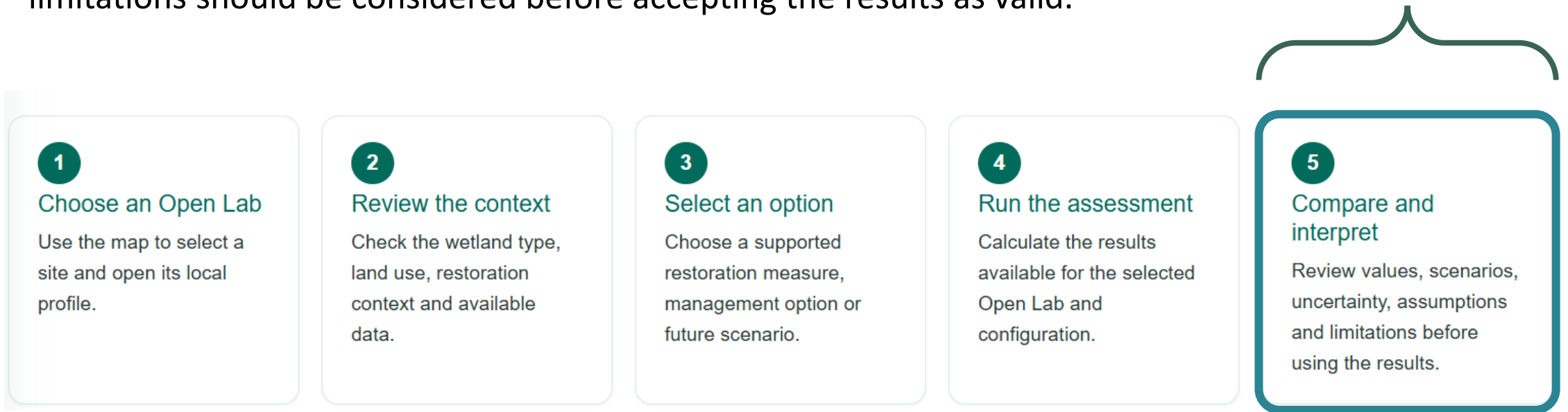
Contingent Valuation / public-health statistics

Contingent valuation or public-health statistics are proposed. No amount is reported.

► Evidence, source and limitations

Interpretation **(5)** is the most important step. The tool provides information to support decision-making, but it does not make decisions on behalf of the user.

The user should take a critical approach and use the assessment results as supporting information for decision-making. The results should be carefully reviewed, and the underlying values, assumptions and limitations should be considered before accepting the results as valid.



CONCLUSIONS

- REWET DSS brings together the main results and knowledge generated across the REWET project in a single, user-friendly tool.
- It supports wetland managers and other stakeholders in exploring restoration options from environmental, economic and social perspectives.
- The tool combines current conditions with GHG calculations, future climate projections and ecosystem services information to support a holistic assessment.
- Inputs can be adapted to explore different conditions and scenarios, making the DSS useful beyond the specific REWET Open Labs.
- The DSS supports informed decision-making, but it does not replace expert judgement. Results should always be interpreted considering the underlying assumptions, values and limitations.

FINAL REMARKS

- The DSS still requires some minor adjustments and refinements to deliver a fully polished version. **The final version is expected to be ready by the end of September 2026.**
- Beyond the lifetime of the REWET project, the DSS can continue to evolve and be further refined by incorporating new data and additional Open Lab contexts, enriching the tool and increasing its applicability and scalability.

IDENER TEAM

The REWET Decision Support System was developed by the IDENER.AI team, bringing together expertise in ecology, data integration, software development, and decision-support tools.



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