PLANEDO · CONTROLLED KNOWLEDGE

Methodological Foundations for Traceable Environmental Impact.

Climate · Water · Soil · Biodiversity · Circularity

About this document

Planedo structures, assesses and validates real environmental impact on the basis of a controlled and versioned body of knowledge.

This Public Edition explains the essential professional principles by which Planedo distinguishes evidence, sources, methodologies, baselines and environmental impact and brings them together into traceable validation decisions.

In particular, it explains

- how reliable facts and impact claims are developed from evidence;
- why methodology and baseline are decisive for determining impact;
- how climate, water, soil, biodiversity and circularity are assessed separately;
- how several environmental impacts can be made visible together without artificially treating them as equivalent;
- what role artificial intelligence plays in the assessment process;
- why final professional decisions remain under human control;
- and under which conditions fully validated climate impact can form the basis of a Planedo.

Public transparency with a clear boundary

This document is a public presentation of Planedo's core professional principles.

It intentionally does not disclose every internal assessment rule, technical control mechanism, security logic, test case or implementation detail.

This limitation does not change a central publication principle:

> **Public simplification may reduce detail – but it must never strengthen a professional claim.**

Where the professional basis does not support a stronger statement, the public presentation must not suggest a stronger impact either.

Professional scope

The description of an environmental domain or methodology does not automatically mean that every conceivable use case can already be validated in a standardised or automated manner.

A specific case may require additional evidence, expert review, a specialised methodology or further research.

Accordingly, **"not yet sufficiently established"** can also be a professionally correct outcome.

Version status

This edition documents the published professional state:

Version 1.0 · August 2026

Material changes will be documented traceably in a new version.

Executive Summary

Environmental impact requires more than data.

An intervention is not yet an impact.

A document is not yet sufficient evidence.

A measured value is not yet an impact claim.

And a plausible calculation is not yet a validation.

Planedo therefore does not begin with the simplest possible environmental claim. It begins with the question:

What can actually be stated on the basis of traceable evidence, an appropriate methodology and a professionally justified comparison?

The fundamental validation logic is:

REAL WORLD
↓
TRACEABLE EVIDENCE
↓
CONTROLLED KNOWLEDGE + METHODOLOGY + BASELINE
↓
PROFESSIONAL ASSESSMENT
↓
HUMAN-CONTROLLED DECISION
↓
VALIDATED ENVIRONMENTAL IMPACT

CONTROLLED KNOWLEDGE

Planedo does not treat professional knowledge as an arbitrary pool of available information.

Sources, rules and reference data must be classified according to their provenance, version, validity, scope and professional role.

This leads to a central principle:

> **Discovered ≠ verified ≠ approved.**

An external source does not become a Planedo rule merely because it has been published.
An individual customer case does not automatically become general Planedo knowledge.
And AI may identify new information, but it cannot itself determine that this information will henceforth govern professional Planedo decisions.

Five distinct impact dimensions

Planedo distinguishes five primary environmental impact dimensions:

CLIMATE

Assessment of climate impact against a professionally appropriate baseline.

WATER

Assessment of water flows, use, quality and location-specific changes.

SOIL

Assessment of, among other things, soil carbon, structure, erosion, water balance, contamination and soil biology.

BIODIVERSITY

Assessment of different levels such as habitat, species, communities, populations, connectivity and genetic diversity.

CIRCULARITY

Assessment of real material, product and use flows such as reuse, repair, refurbishment and recycling.
Several environmental impacts can arise from the same real-world intervention.
They are made visible together, but are not converted into an artificial universal metric.

> **Visible together. Not artificially treated as equivalent.**

A positive climate impact does not make a possible negative water, soil or biodiversity impact disappear.
And an impact that has not been assessed is not automatically treated as neutral.
UNKNOWN ≠ NEUTRAL

Claim boundaries are part of validation

Planedo deliberately distinguishes between what has been established and what may professionally be concluded from it.
Examples:
Ticket purchased ≠ automatically avoided car trip
Recycling ≠ automatically climate impact
Water reuse ≠ automatically avoided water consumption
Tree planting ≠ automatically biodiversity gain
Increase in SOC ≠ automatically net CO_2 removal
These boundaries are intended to prevent a correct partial fact from being expanded into a stronger environmental claim than the evidence and methodology actually support.

Impact requires a baseline

Many environmental impacts can only be assessed against an appropriate reference case.
The central question is:

> **What would probably have happened without the intervention under consideration?**

A baseline is therefore not automatically the latest historical value, an average, a legal threshold or a desired target condition.
It must fit the specific use case, period, spatial context and methodology used.

Methodology determines the permitted claim

Planedo does not work with a single universal environmental formula.
Different environmental impacts require different professional assessment frameworks.
A methodology defines in particular

- what may be assessed;
- what evidence is required;
- which baseline is permitted;
- how calculations or professional assessments are performed;
- and what claim boundaries apply.

For specific use cases, these requirements are operationalised through defined application profiles.
Where no suitable assessment framework exists:

> **No improvised methodology.**

AI is not permitted to fill such a professional gap autonomously.

AI assists. Humans decide.

Artificial intelligence can support Planedo in particular by

- analysing documents;
- extracting and structuring information;
- making possible inconsistencies and data gaps visible;
- identifying relevant sources;
- preparing professional assessments;
- and structuring dossiers.

Clear boundaries apply:

AI Confidence ≠ Validation Confidence

AI Extraction ≠ Original Evidence

Prompt ≠ Methodology

AI Recommendation ≠ Final Decision

AI does not autonomously activate new Planedo knowledge.

And it does not make the final professional environmental decision on its own.

> **AI assists. Humans decide.**

From validated climate impact to a Planedo

Only the climate dimension can create Planedo capacity.

The public definition is:

---

1 Planedo = 10 kg CO_2e

of fully validated net climate impact

The validated climate impact is the professional source quantity.

Only afterwards is the Planedo quantity derived from it.

Prevalidation, methodological potential or qualification of an impact mechanism do not in themselves create a Planedo.

In particular:

Prevalidation ≠ fully validated impact

Effect-ID ≠ Planedo capacity

Potential-ID ≠ Planedo capacity

Projected Effect ≠ Realized Effect

Positive Planedo capacity requires the methodologically required realization event, full professional validation, control against impermissible double counting and a human-controlled final decision.

One physical effect remains one lineage

An environmental impact may later be visible in different contexts:

at a manufacturer, at a customer, within a supply chain or in a report.

These different views do not create an additional physical effect.

Planedo therefore follows the principle:

> **One physical effect remains one lineage.**

Reporting does not create a second impact.

And the same climate impact must not create new Planedo capacity more than once.

What a Planedo is not

In the pilot, a Planedo is:

- **not a means of payment;**
- **not a general carbon offset certificate;**
- **not freely tradable.**

References to external standards, frameworks or institutions also do not imply certification, recognition or endorsement of Planedo by those organisations.

A documented state of knowledge

Scientific findings, standards, regulatory requirements, reference data and methodologies can change.

Planedo manages such changes in a versioned and traceable manner.

A new knowledge version does not silently overwrite the basis of earlier decisions.
The versioning principle is:

> **New version ≠ new past.**

This is intended to ensure that it remains possible to determine the professional state on which a decision was actually made.

Contents

---

1 · Real Environmental Impact

An intervention is not yet an impact.

Environmental interventions can be described comparatively easily. The more difficult question is **which environmental change actually occurred, what the claim is based on, and how robust it is**.

A technical replacement, a ticket, a recycling process, a water measure or a restoration project may be the starting point of an environmental impact. The impact does not follow from the intervention alone.

Planedo therefore consistently distinguishes between:

Intervention
→ what was actually done?

Evidence
→ what is documented?

Fact
→ what can be professionally established?

Impact claim
→ what environmental change may be methodologically derived from it?

Validation
→ does the entire professional basis support the claim?

This separation prevents a plausible relationship from automatically becoming a validated environmental claim.

Claim boundaries are part of methodology

A few simple examples illustrate the logic:

Ticket purchased ≠ automatically avoided car trip

The ticket purchase initially documents an event. For a specific climate impact, it must also be traceable what transport scenario would probably have occurred without the intervention.

Recycling ≠ automatically climate impact

A recycling process can represent a real circularity impact. An additional climate impact, however, requires its own climate impact pathway.

Water reuse ≠ automatically avoided water consumption

Reuse, withdrawal and consumption are different physical water quantities.

Tree planting ≠ automatically biodiversity gain

The measure initially describes an intervention. Habitat condition, species or populations must be assessed at their respective professional levels.

Increase in SOC ≠ automatically net CO_2 removal

A change in soil carbon and atmospheric net climate impact are different claims.

The overarching principle is:

> **The strength of an impact claim must be supported by its professional basis.**

Five distinct impact dimensions

Planedo distinguishes five primary environmental impact dimensions:

CLIMATE

Assessment of greenhouse gas impact against a professionally appropriate baseline.

WATER

Assessment of, among other things, water flows, use, quality and location-specific changes.

SOIL

Assessment of, among other things, soil carbon, structure, erosion, water balance, contamination and soil biology.

BIODIVERSITY

Assessment of different levels such as habitat, species, communities, populations, connectivity and genetic diversity.

CIRCULARITY

Assessment of real material, product and use flows such as reuse, repair, refurbishment or recycling.

A real-world intervention may affect several of these dimensions at the same time.

The results can be displayed together, but they are not arbitrarily combined into a universal environmental metric.

> **Visible together. Not artificially treated as equivalent.**

Only climate can create Planedo capacity

The five impact dimensions are professionally distinct.

For the Planedo system unit, however, Climate has a specific function:

Only fully validated positive net climate impact can create Planedo capacity.

Water, soil, biodiversity and circularity impacts remain distinct components of the environmental impact profile.

They are not converted into CO_2e or Planedos using generic conversion factors.

The public definition is:

> **1 Planedo = 10 kg CO_2e of fully validated net climate impact.**

Preliminary assessment is not yet validated impact

Planedo distinguishes between preliminary assessment and final validation.

A prevalidation can, for example, assess

- whether an impact appears plausible in principle;
- whether an appropriate methodological pathway exists;
- what evidence is required;
- whether additional information is needed.

It does not yet create final environmental impact.

Fully validated impact requires the methodologically relevant realization event and the required professional assessment.

Depending on the use case, this may include in particular:

- suitable evidence;
- a defined impact claim;
- an appropriate methodology;
- a professionally justified baseline;
- traceable calculation or assessment;
- treatment of material uncertainty and contradictions;
- controls against impermissible double counting;
- human-controlled professional approval.

Prevalidation ≠ Full Validation.

One physical effect remains one lineage

The same environmental impact may later be visible in different contexts:

- at the manufacturer;

- at the user;
- within a supply chain;
- in a dossier;
- in a report.

These different views do not create an additional physical effect.

Planedo therefore follows the principle:

> **One physical effect remains one lineage.**

Reporting, transfer of information or technical registration must not cause the same real environmental impact to be treated more than once as a new impact.

---

2 · Controlled Knowledge

Discovered ≠ verified ≠ approved.

Environmental validation is based on knowledge from different sources.

These may include:

- legal and regulatory sources;
- standards;
- scientific publications;
- official reference data;
- technical documentation;
- case-specific evidence.

The mere availability of information does not determine whether it may govern a specific professional decision.

A source may, for example:

- be outdated;
- apply only in a particular jurisdiction;
- not yet be effective;
- serve a different professional purpose;
- apply to a different geographical or temporal context.

Planedo therefore treats knowledge as a **controlled component of validation**.

Three distinct information levels

Planedo broadly distinguishes between:

EXTERNAL PROFESSIONAL SOURCES

These include regulatory, scientific and technical sources as well as reference data.

PLANEDO RULES AND METHODOLOGIES

They define how external sources may be used within a defined Planedo use case.

CASE-SPECIFIC EVIDENCE

This documents the specific facts of an individual validation case.

These levels fulfil different functions.

A customer document does not automatically become general Planedo knowledge.

And an external source does not automatically become a Planedo rule.

> **Source ≠ Planedo rule.**

Sources require context

For the professional use of a source, relevant aspects may include:

- issuer;
- version;
- scope;
- jurisdiction;
- publication date;
- effective date;
- professional role.

A future or not-yet-effective source therefore does not automatically replace a currently applicable source prematurely.

Likewise:

Newer ≠ automatically more suitable.

Professional fit with the specific use case is decisive.

Conflicts are not simply averaged

Different sources may lead to different results.

Such conflicts can, for example, arise from different:

- definitions;
- system boundaries;
- measurement methods;
- periods;
- geographic areas;
- legal scopes.

Planedo therefore does not resolve material conflicts by arbitrary averaging.

First it must be understood **why the sources differ**.

If a material conflict cannot be resolved sufficiently, additional expert review may be required.

Accordingly:

> **"Not yet sufficiently established"**

is a valid professional outcome.

Reference data requires provenance

Individual factors or reference values are also not treated independently of context.

A value may be mathematically correct and still be unsuitable for a specific case.

Relevant attributes for a controlled reference value may include:

Source · Version · Geography · Period · Unit · Method Context

A factor without these attributes is not a sufficiently controlled decision basis.

Controlled Knowledge is more than a large AI document repository

Modern AI systems can search very large quantities of documents.

This is useful, but it does not yet answer:

- which version is current;
- which source is appropriate for which case;
- which rule has been approved;
- which source only describes future developments;
- what claim boundary a methodology has.

Planedo therefore does not treat Controlled Knowledge as the largest possible corpus.

The decisive question is:

> **Which knowledge may be used for which professional purpose?**

AI can discover knowledge – but not approve it

AI can support Planedo by

- identifying relevant sources;
- detecting changes between versions;
- structuring content;
- making possible review needs visible.

Discovering a source does not automatically change the active professional knowledge base.

The rule is:

AI-discovered Knowledge ≠ approved Planedo knowledge.

Professional activation remains controlled and subject to human responsibility.

Knowledge is allowed to change

Controlled Knowledge does not mean permanently freezing information once it has been defined.

Science, regulation, reference data and methodologies evolve.

Planedo therefore manages such changes in a versioned manner.

A later knowledge version does not silently overwrite the basis of an earlier decision.

The central principle is:

> **New version ≠ new past.**

3 · Evidence, Facts and Impact Claims

Evidence is not yet environmental impact.

A robust validation begins with the question:

> **What is actually documented?**

Evidence can differ significantly depending on the use case.

It may include, for example:

- measurement data;
- invoices;
- technical documentation;
- operational data;
- laboratory results;
- other suitable case-specific documents.

Planedo distinguishes several information levels:

Original evidence
→ **extracted information**
→ **professionally classified fact**
→ **impact claim**
→ **validation decision**

Original evidence and technical derivatives remain separate

AI, OCR or other technical processes can extract information from a document.

The resulting data does not become new original evidence.

The rule is:

AI Extraction ≠ Original Evidence

The provenance of information should remain traceable even after further processing.

Technical confidence is not professional validation confidence

A system may, for example, be highly confident that a document contains a particular value.

That does not yet determine

- whether the value is relevant to the claim;
- whether it relates to the correct period;
- whether it is representative;
- whether other evidence contradicts it;
- whether it supports the intended impact claim.

Therefore:

> **Extraction Confidence ≠ Validation Confidence.**

Fact ≠ Claim

A fact describes **what has been established**.

An impact claim describes **what environmental change may methodologically be derived from it**.

These levels must not be mixed.

A documented quantity of material, for example, may be a reliable fact.

Whether it implies

- a circularity impact;
- a climate impact;
- or both

must be assessed separately under the applicable methodology.

Each claim has one clear primary dimension

A real-world intervention can create several environmental impacts.

Planedo represents these as separate impact claims.

Each claim is assigned to exactly one primary dimension:

Climate · Water · Soil · Biodiversity · Circularity

If a circularity process is also to create a climate impact, the climate claim needs its own professional climate pathway.

This preserves traceability of **which claim was validated on which basis**.

Evidence exists ≠ evidence is sufficient

A document may be authentic and still be insufficient.

Professional assessment may need to answer different questions:

Does the evidence exist?
Is it relevant to the claim?
Is it reliable?
Is it representative of the period and application?
Is the overall evidence basis sufficient?
The mere existence of a document does not answer these questions.

Missing information is not zero

Planedo distinguishes in particular between:

- actual zero;
- unknown;
- not collected;
- not applicable;
- not detected.

These states have different professional meanings.
Therefore:

> **UNKNOWN ≠ ZERO**

A missing value must not silently become zero.

Contradictions remain visible

Evidence can conflict.
In such a case, material conflicts are not automatically averaged or resolved by a seemingly plausible AI summary.
First it must be established whether, for example:

- different periods;
- different units;
- different system boundaries;
- different facts

are being considered.
A material unresolved contradiction can prevent final positive validation.

Purchase evidence is methodology-specific

An invoice or purchase record can, in certain use cases, be relevant evidence of a real-world event.
This does not create a universal rule:
Invoice available = environmental impact realised.
Whether such evidence is sufficient is determined by the relevant application profile.

The decision basis remains traceable

Once a final validation decision has been made, it should remain possible to reconstruct

- which evidence was used;
- which facts were derived from it;
- which methodology applied;
- which baseline was used;
- which claim was assessed;
- which professional decision was made.

If evidence is later corrected or supplemented, a new decision basis is created.
The history is not silently overwritten.

Reporting does not create new impact

A validated claim may later be represented in different reports or dossiers.
This does not create a new physical effect.
The rule is:

> **Reporting ≠ new environmental impact.**

---

4 · Baseline and Methodology

Impact requires a defined comparison.

Many environmental impacts can only be meaningfully assessed if it is clear **what the real-world situation is being compared against**.
The central baseline question is:

> **What would probably have happened without the intervention under consideration?**

The baseline therefore represents the professionally justified counterfactual.

A historical value is not automatically the baseline

The latest known value may in some cases be an appropriate reference.

But it does not have to be.

Between a historical point in time and the actual impact, factors such as

- technology;
- use;
- market conditions;
- regulation;
- environmental conditions

may have changed.

The question is therefore not only:

"What was it like before?"

but:

"What would probably have happened during the relevant period without the intervention?"

Reference value, reference condition and target condition remain separate

Other comparison values must not automatically be treated as the baseline either.

An:

- average value;
- emission factor;
- regulatory threshold;
- professional reference condition;
- desired target condition

may play an important role.

But it does not necessarily answer the counterfactual question.

Therefore:

Baseline ≠ Reference Condition ≠ Target Condition

The baseline must not be determined by the desired result

A baseline must not be selected according to which comparison produces the largest positive environmental impact.

The order must remain the opposite:

determine an appropriate reference case
↓
assess impact against that reference case

This makes the baseline an independent professional foundation rather than a subsequent optimisation parameter.

Baselines may change

Not every baseline has to remain permanently static.

Under dynamic conditions, a baseline may be updated according to a predefined rule.

To prevent arbitrariness, the following must be clearly defined in advance in particular:

- update rule;
- data source;
- update frequency;
- geographic scope;
- temporal scope.

A dynamic baseline must not be adjusted retrospectively so as to produce the desired result.

Methodology determines what is professionally permissible

A methodology is more than a formula.

It defines the professional framework of an impact claim.

This includes in particular:

- scope;
- permitted claims;
- baseline logic;
- evidence requirements;
- calculation or assessment;
- treatment of uncertainty;
- professional claim boundaries.

Planedo therefore does not use one universal environmental formula.

Methodology ≠ Application Profile

A methodology describes the general assessment framework.

An **Application Profile** operationalises it for a defined real-world use case.

This may include, for example:

- technology;
- activity;
- functional unit;
- location;
- period;
- specific evidence;
- appropriate reference data.

A general methodology is therefore not automatically transferable to every similar case.

No matching profile means no improvised methodology

Where no suitable controlled assessment framework exists, a superficially similar methodology must not simply be transferred and the missing logic filled with assumptions.

The principle is:

> **No matching profile → no AI improvisation.**

In such a case, additional expert review, methodology development or further research may be required.

No claim beyond the capability of the methodology

Methodologies limit not only **how** an assessment is performed.

They also limit **what claim is permissible at all**.

Examples:

Presence ≠ Population

Infiltration ≠ Groundwater Recharge

Circularity Fact ≠ Climate Effect

SOC Stock ≠ Net Climate Removal

A stronger claim requires a correspondingly stronger professional pathway.

Understand uncertainty before reducing it

Environmental assessments may involve uncertainty.

Planedo distinguishes between:

- uncertainty;
- data gap;
- error;
- contradiction.

These situations must not be treated as equivalent.

The first step is therefore to understand uncertainty and – where possible – reduce it through better data or more precise methodology.

A discount does not repair an unsuitable basis

Conservative assessment approaches can be professionally appropriate.

They must not, however, be used to conceal fundamental problems.

A generic discount does not replace:

- an appropriate baseline;
- sufficient evidence;
- a robust methodology;
- resolution of material contradictions.

Therefore:

> **Conservative calculation ≠ automatically correct methodology.**

Planedo does not use a universal haircut or a universal materiality threshold across all environmental impacts.

The basis used remains versioned

A final decision remains linked to the actual:

- methodology;
- baseline;
- reference data;
- evidence basis

used for that decision.
Later updates do not silently change this historical decision basis.
Here too:

> **New version ≠ new past.**

---

5 · Climate

Emissions information is not automatically climate impact.

Greenhouse gas data can answer different professional questions.

Planedo distinguishes in particular between:

GHG Inventory
→ Which emissions are to be accounted for within a defined inventory boundary?

Impact Delta
→ What net change actually occurred compared with a professionally appropriate reference case?

Removal
→ What net quantity was actually removed from the atmosphere and stored within the relevant system?

These levels must not be treated as equivalent.

> **Inventory ≠ Impact.**

A lower inventory item or a lower Product Carbon Footprint therefore does not automatically mean that exactly this difference has occurred as real climate impact.

PCF ≠ realised impact difference

A Product Carbon Footprint can provide important product-related information.

However, additional questions may be decisive for assessing actual climate impact:

- Are the products or services functionally comparable?
- What quantity was actually used?
- What reference case would have occurred without the intervention?
- What system boundaries apply?
- What other process changes are material?

Therefore:

PCF difference ≠ automatically realised climate impact.

Electricity: factor and question must match

Different assessment approaches may be relevant for electricity, for example:

- location-based;
- market-based;
- average grid factors;
- marginal or displacement factors.

These approaches do not necessarily answer the same question.

A factor suitable for a Scope 2 inventory is therefore not automatically the right factor for a baseline-based impact assessment.

> **Scope 2 Inventory ≠ automatically Electricity Impact.**

The factor used must fit the specific period, geographical context and purpose of the assessment.

Fuel switch: no universal savings percentages

Switching fuels can create real climate impact.

A product designation alone, however, does not establish a fixed saving.

Relevant elements may include:

- the specific fuel pathway;
- baseline fuel;
- functional unit;
- lifecycle boundary;
- quantity actually realised;
- provenance and supply-chain information.

Planedo therefore does not use a general statement such as:

> **"HVO always saves 90%."**

The impact is determined from the specific professional application pathway.

Heat and heat pumps

A heat pump does not have a universal climate impact either.

Relevant factors may include:

- the heating system replaced or changed;
- actual useful heat or energy;
- system efficiency;
- seasonal performance or annual performance factor;
- electricity factor;
- where relevant, other material emission sources.

Therefore:

Heat pump installed ≠ fixed CO_2e saving.

Actual impact arises from the real technical and energy context.

Mobility: ticket ≠ displaced car trip

Mobility illustrates particularly clearly why a documented event is not yet a complete impact claim.

A ticket purchase does not automatically prove that a car trip was actually displaced.

Relevant aspects for a climate assessment may include:

- distance actually travelled;
- expected transport mode without the intervention;
- occupancy or load;
- functional comparison unit;
- possible induced additional mobility.

Planedo therefore does not apply a universal fixed discount to the Deutschlandticket either.

> **A fixed haircut does not replace a methodology.**

Materials and circularity require a separate climate pathway

Recycling, reuse or refurbishment can represent real circularity impacts.

An additional climate impact does not arise automatically.

Relevant elements for climate assessment may include:

- avoided virgin production;
- additional process energy;
- material yield;
- quality;
- transport;
- residues;
- actual substitution.

Therefore:

Circularity Fact ≠ automatically Climate Effect.

Soil carbon and removal remain separate

A change in soil carbon can be relevant to climate.

But it is not automatically a net removal of CO_2 from the atmosphere.

A stronger climate claim may need to address, among other things:

- baseline;
- other greenhouse gases;
- durability;
- leakage;
- other carbon pools;
- possible reversal.

Therefore:

SOC Stock Increase ≠ automatically Net Climate Removal.

More complex removal pathways may require specialist review.

Only fully validated net climate impact creates Planedo capacity

Positive Planedo capacity requires more than theoretical reduction.

In the relevant professional context, the following are required in particular:

appropriate methodology
↓
realization event
↓
appropriate evidence
↓

professionally justified baseline
↓
net climate assessment
↓
control of relevant secondary effects and double counting
↓
human-controlled final decision
Only then can the system quantity be derived:

> **1 Planedo = 10 kg CO_2e of fully validated net climate impact.**

Other environmental impacts are not converted into Planedos.

---

6 · Water

Water volume is not automatically water impact.

Water impacts depend strongly on their physical, spatial and temporal context.

Planedo therefore distinguishes, among other things:

- withdrawal;
- consumption;
- discharge;
- reuse;
- recirculation;
- storage;
- source substitution;
- water quality.

These quantities must not be combined into an unspecified "water saving".

Withdrawal ≠ Consumption

Water withdrawal initially describes the removal of water from a source.

Consumption answers a different question: what proportion within the relevant system is not returned or otherwise remains unavailable in the same way.

Therefore:

> **Withdrawal ≠ Consumption.**

Reduced withdrawal does not automatically mean the same change in water consumption.

Reuse ≠ automatically avoided withdrawal

A reused water volume can represent a relevant impact.

It does not automatically follow, however, that without reuse the same quantity would have been additionally withdrawn or consumed.

Internal recirculation must also not create artificially high "water savings" through repeated counting of gross throughput.

> **Reuse Volume ≠ automatically Avoided Withdrawal or Consumption.**

Concentration ≠ Load

For water quality, concentration must be distinguished from actual pollutant load.

A load assessment may need to consider in particular:

- concentration;
- water volume or flow;
- period;
- sampling point;
- measurement or laboratory method.

A lower concentration can also result from dilution.

Therefore:

Concentration ≠ Load

and

Dilution ≠ Load Reduction.

Parameters such as COD, BOD and TOC also remain distinct professional quantities.

Technical efficiency ≠ basin-level impact

In irrigation, higher field efficiency does not automatically mean that the same amount of water is saved at catchment or basin level.
Additional relevant factors may include:

- evapotranspiration;
- return flows;
- effective rainfall;
- groundwater interaction;
- changes in use;
- rebound effects.

> **Field Efficiency ≠ Basin Saving.**

Infiltration ≠ Groundwater Recharge

Nature-based interventions may create, among other things:

- retention;
- infiltration;
- storage;
- altered surface runoff.

These effects remain separate claims.
In particular:

> **Infiltration ≠ Groundwater Recharge.**

Local ≠ entire water system

Planedo distinguishes spatial levels such as:
project reach · water body · catchment · basin
A local improvement therefore does not create a claimed official overall status for the entire water body.
Water quality and biodiversity impact also remain separate.
An additional climate or biodiversity impact from a water intervention requires its own professional impact pathway.
Water itself does not create Planedo capacity and is not generically converted into CO_2e.

---

7 · Soil

Soil is multidimensional.

Planedo does not treat soil as a single environmental indicator.
Different claims may concern in particular:

- soil carbon;
- physical structure;
- erosion;
- infiltration;
- water retention;
- contamination;
- soil biology.

Improvement in one parameter does not automatically imply improvement in all soil functions.

SOC, SOM and humus are not synonyms

Soil carbon requires precise professional terminology.
In particular:

> **SOC ≠ SOM ≠ Humus**

No universal conversion is applied independently of methodological context.

SOC concentration ≠ SOC stock

Concentration and carbon stock answer different questions.
Depending on the methodology, determining an SOC stock may require, among other things:

- SOC concentration;
- bulk density;
- depth;
- coarse fragments;
- area.

Where density changes are material, it may also be necessary to assess whether equivalent soil mass should be considered rather than merely the same geometric depth.

Carbon input ≠ atmospheric removal

Where organic material is added to soil, this initially represents a transfer of carbon.

It does not automatically represent atmospheric removal.

Therefore:

Carbon Input ≠ Atmospheric Removal

and

SOC Stock Increase ≠ automatically Net Climate Removal.

An additional Planedo-relevant climate claim requires a separate climate claim and corresponding climate validation.

Erosion ≠ Sediment Delivery

Erosion describes detachment or movement of soil material.

Sediment Delivery describes the proportion that actually reaches a defined receiving location.

Model outputs also remain identifiable as modelled results.

Modelled ≠ Measured.

Contamination has several claim levels

For soil contamination, Planedo distinguishes:

Presence
→ **Concentration**
→ **Mass**
→ **Mobility / Bioavailability**
→ **Exposure**
→ **Risk**

Detection of a contaminant is therefore not automatically evidence of risk.

Likewise:

Removal ≠ Destruction

and

Immobilisation ≠ Mass Reduction.

Soil biology is not a single Soil Health score

Biological soil data may concern, among other things:

- Presence;
- Abundance;
- Diversity;
- Biomass;
- Activity;
- Community;
- Function.

These levels remain separate.

Detection of DNA, for example, does not automatically mean that an organism is active.

Soil respiration is also not treated as a universal overall metric of soil health.

> **Soil impact remains multidimensional and does not automatically create climate impact or Planedo capacity.**

---

8 · Biodiversity

Biodiversity is not a single metric.

Planedo considers biodiversity at different biological levels, in particular:

- habitat and ecosystem;
- species;
- communities;
- populations;
- connectivity;
- genetic diversity.

These levels may be connected, but they are not identical.

Planedo therefore does not use a universal biodiversity point that converts all ecological changes into a fungible quantity.

From intervention to ecological impact

A typical professional impact pathway may be:

Intervention
↓
physical condition
↓
habitat condition
↓
species/community response
↓
population response
↓
ecosystem function or integrity

Not every claim has to cover the entire pathway.

The decisive rule is:

> **Claim levels must not be skipped without sufficient evidence.**

Habitat area ≠ habitat condition

Larger area does not automatically mean better ecological condition.

Likewise, a restoration intervention does not automatically prove restoration success.

The following apply:

Habitat Area ≠ Habitat Condition

Restoration Action ≠ Restoration Success

Target Condition ≠ Realized Condition

A future target condition must not be presented as an impact that has already occurred.

Detection ≠ Population

Species-related claims have different levels:

Detection
→ **Presence**
→ **Occupancy**
→ **Abundance / Density**
→ **Population Size**
→ **Trend**
→ **Reproductive Success**
→ **Viability**

These levels must not silently be treated as equivalent.

In particular:

Presence ≠ Population

and:

> **Non-Detection ≠ Absence.**

Failure to detect a species within a particular survey design does not automatically prove its actual absence.

eDNA has clear claim boundaries

Environmental DNA can be a valuable method for detecting biological presence.

A positive signal does not automatically prove:

- population size;
- abundance;
- reproductive success.

Therefore:

> **eDNA Positive ≠ Population Size.**

Taxonomy, assay, sampling and analysis version remain part of the methodological context.

Pollinators: intervention ≠ population

Separate claim levels also apply to pollinators.

Flower Strip ≠ Pollinator Population

Honeybee ≠ Wild Pollinator Biodiversity

Visitation ≠ Population

If actual pollination function is to be assessed as well, stronger evidence may be required.

Distance ≠ Connectivity

Planedo distinguishes structural from functional ecological connectivity.

Geographic proximity alone does not prove functional connectivity.

Likewise:

Movement ≠ Dispersal ≠ Gene Flow.

Observed movement of organisms is not automatically genetic exchange.

Freshwater: intervention ≠ ecological recovery

Freshwater biodiversity can involve separate assessment of:

- water chemistry;
- hydrology;
- hydromorphology;
- connectivity;
- habitat;
- biological communities.

A constructed fish pass, for example, does not yet prove a recovered population.

> **Fish pass built ≠ population recovered.**

A local project result is also not automatically an official water-body status.

Tree count, forest area, carbon and biodiversity remain separate

In forest systems, relevant information may include:

- tree count;
- forest area;
- carbon stock;
- habitat condition;
- species and community structure.

Therefore:

Tree Planting ≠ automatically Biodiversity Gain

and

High Carbon Stock ≠ High Biodiversity.

A positive climate characteristic must not be used as a substitute for biodiversity assessment.

Rewetting ≠ complete wetland restoration

In wetlands and peatlands, rewetting may be an important professional step.

It does not automatically prove complete restoration of the ecosystem.

Peat-forming vegetation is also not the same as measured peat accumulation.

Loss and gain remain visible

For biodiversity loss/gain questions:

Avoided Loss ≠ Gain.

Planedo does not automatically net different biodiversity impacts into a single number.

Irreplaceable habitats may rule out simple fungibility altogether.

Genetic diversity is a separate level

Species presence says nothing in itself about genetic diversity.

Observed population size and effective genetic population size also remain distinct.

In particular:

Species Presence ≠ Genetic Diversity

Census Size ≠ Effective Population Size

Movement ≠ Gene Flow

Translocation ≠ automatically Genetic Rescue

Strong genetic claims may require specialist review.

Biodiversity remains distinct

Biodiversity impact does not create Planedo capacity.

It is not generically converted into CO_2e.

A positive climate impact must not hide negative, unknown or unassessed biodiversity impacts.

The principle is:

> **Intervention is not automatically outcome.**
> **Area is not condition.**
> **Presence is not population.**
> **Movement is not gene flow.**
> **And biodiversity is not reduced to one universal point.**

---

9 · Circularity

Physical material flow rather than a circularity label.

Planedo assesses circularity at the level of real material, product and use flows.

Different claims may concern in particular:

- Reuse;
- Repair;
- Refurbishment;
- Remanufacturing;
- Recycling;
- Secondary Material Use;
- Lifetime Extension;
- Waste Prevention;
- Virgin Material Substitution.

These processes remain professionally distinct.

Gross throughput ≠ circular outcome

A material may pass through several process stages:

Collection → Sorting → Processing → Reuse or Recycling

These stages must not each be added as separate full environmental impacts.

Nor is a large treated input quantity automatically an equally large circular outcome.

> **Gross Throughput ≠ Circular Outcome.**

Sale ≠ reuse

A transaction initially documents an economic event.

It does not automatically prove actual continued use of a product.

Therefore:

Sale ≠ automatically Reuse.

A repair also initially documents an intervention.

It does not automatically prove a specific additional service life.

Repair ≠ automatically Lifetime Extension.

Refurbishment ≠ automatically Climate Saving

A refurbished product can represent real circularity impact.

An additional climate impact, however, requires a separate climate claim.

Relevant factors may include, for example:

- production actually avoided;
- functional comparability;
- process energy;
- transport;
- actual additional service life.

Recycling input ≠ usable output

The quantity entering a recycling process is not automatically identical to the usable recycled output.

Planedo keeps visible in particular:

- yield;
- losses;
- residues;
- quality;
- downcycling.

> **Input Mass ≠ Usable Recycled Output.**

Secondary material ≠ automatically avoided virgin material

Actual use of secondary material can represent a relevant circularity impact.
It does not automatically imply an identical quantity of avoided virgin material.
A substitution claim may require in particular:

- functional equivalence;
- quality level;
- process context;
- application context.

Therefore:

> **Secondary Material Used ≠ automatically the same quantity of Virgin Material Avoided.**

Mass balance and lineage protect against double counting

A traceable material balance records:

- what quantity entered a process;
- what quantity was actually reused or processed;
- what usable output was produced;
- what losses or residues remained.

In addition, the physical effect lineage is maintained.
The same material must not be counted multiple times as separate full impacts merely because it appears at several process stages.

Circularity impact remains a distinct dimension

A circularity impact may cause additional climate, water or biodiversity impacts.
These do not arise automatically.
Each additional impact requires its own professional causal and validation pathway.
Therefore:

> **Circularity ≠ automatically Climate.**

Circularity impact is not converted into Planedos and does not create Planedo capacity.

---

10 · Multi-Impact

One intervention can create several environmental impacts.

Real environmental interventions often affect more than one dimension.
A changed production process may, for example:

- reduce greenhouse gas emissions;
- change water flows;
- reduce the use of virgin material;
- affect soil or biodiversity.

Planedo can consider such impacts together.
Each impact nevertheless remains professionally distinct.

> **Multi-Impact means shared visibility – not equivalence.**

One intervention can create several claims

A real-world event may form the basis of several impact claims.
For example, the same physical event may concern both:
Circularity
and
Climate
The claims may use some of the same source data or evidence.
That does not mean they have the same professional conclusion.
The rules are:
Shared Evidence ≠ Shared Conclusion
and:
Shared Evidence ≠ automatically sufficient evidence for every claim.
Each impact claim must be supported within its own professional dimension.

Each claim has one primary impact dimension

Planedo assigns every impact claim to exactly one primary dimension:

CLIMATE

WATER

SOIL

BIODIVERSITY

CIRCULARITY

Where a real-world intervention has several environmental impacts, it creates correspondingly separate claims.

This preserves traceability of:

- what environmental change was assessed;
- what methodology was used;
- what evidence was required;
- and what validation status was actually achieved.

Impact in dimension A is not automatically impact in dimension B

Real causal links may exist between environmental impacts.

Such a link must nevertheless be professionally justified separately.

Examples:

Recycling → potentially Climate

but:

Recycling ≠ automatically Climate Effect

Water change → potentially Biodiversity

but:

Water Impact ≠ automatically Biodiversity Impact

Soil change → potentially Climate

but:

Soil Impact ≠ automatically Climate Impact

An additional impact requires its own professional causal and validation pathway.

No artificial universal metric

Planedo does not use a universal Environmental Score that combines different environmental impacts into one overall number.

In particular:

- water;
- soil;
- biodiversity;
- circularity

are not converted into CO_2e through arbitrary factors.

Nor are different environmental impacts automatically netted against one another.

> **Cross-Dimension Netting is not applied.**

A positive impact in one dimension must not make a negative impact in another dimension disappear.

Positive climate impact ≠ overall positive environmental performance

An intervention may, for example, be:

positive for climate

and at the same time

negative for water

Both statements may be professionally correct.

Positive climate impact therefore does not create the generic statement:

"The intervention is environmentally positive overall."

Planedo keeps the different impacts visible.

UNKNOWN ≠ NEUTRAL

Not every environmental impact must be fully assessed in every case.

An environmental impact profile may, for example, show:

Climate
positively validated

Water
additional information required

Soil
not assessed

Biodiversity
open
Circularity
positively validated
An unassessed dimension is not automatically interpreted as neutral.

> **UNKNOWN ≠ NEUTRAL**

Different claims may have different maturity states

Several claims from the same event do not have to be completed at the same time.
A Climate claim may already be fully validated while, for example, a biodiversity impact still requires additional observations.
Therefore:
Validated in Climate ≠ automatically Validated in other dimensions.
Each impact has its own professional decision basis.

Reporting does not create additional physical effect

An environmental impact may later be visible:

- at the manufacturer;
- at the customer;
- within a supply chain;
- in a dossier;
- in different reports.

These different views do not create a new physical effect.

> **Reporting Visibility ≠ New Physical Effect**

Planedo therefore follows the principle:
One physical effect remains one lineage.

Roles along an impact remain distinguishable

In more complex projects or supply chains, different actors may hold different roles.
These may include:

- physical causation;
- implementation;
- financing;
- beneficiary role;
- reporting;
- subsequent disposition rights.

These roles are not automatically identical.
In particular:

> **Reporting right ≠ disposition right over Planedo capacity.**

The Multi-Impact principle

Planedo therefore does not combine several environmental impacts into a new universal metric.
The structure is:
one real intervention
↓
one or more physical effects
↓
separate impact claims
↓
claim-specific methodology, baseline and evidence
↓
claim-specific validation decision
↓
shared environmental impact profile
The core principle is:

> **Visible together.**
> **Not artificially treated as equivalent.**
> **Positive impact does not hide negative impact.**
> **And unknown does not mean neutral.**

11 · AI and Human Professional Control

AI is a tool within a controlled professional architecture.

Artificial intelligence can significantly support the processing of complex environmental information.

Planedo may use AI in particular to:

- analyse documents;
- extract information;
- structure evidence;
- identify possible inconsistencies;
- identify relevant sources;
- prepare professional assessments;
- structure dossiers.

The role of AI nevertheless has clear professional boundaries.

> **AI assists. Humans decide.**

AI output is not original evidence

When AI extracts information from a document, it does not create new original evidence.

Derived information remains traceable to the original source.

The rule is:

AI Extraction ≠ Original Evidence

Information provenance is preserved.

Model confidence is not validation confidence

A model may be highly confident about which value appears in a document.

That does not yet establish:

- whether the value is relevant;
- whether it relates to the correct period;
- whether it is representative;
- whether other evidence contradicts it;
- whether it supports a particular impact claim.

Therefore:

> **AI Confidence ≠ Validation Confidence**

Technical model confidence does not replace a professional validation basis.

AI can make review needs visible

AI can, among other things, flag:

- missing information;
- contradictory values;
- unusual data;
- unclear periods;
- possible methodological issues.

Such a flag is initially a review signal.

AI Flag ≠ automatically professional finding.

Its significance must be assessed within the specific professional context.

AI can find sources – but not activate them

AI can identify new:

- regulatory sources;
- standards;
- scientific sources;
- reference data;
- possible rule changes.

A discovered source does not automatically change the permissible Planedo knowledge base.

It must first be controlled with regard to, among other things:

- identity;
- version;
- status;
- scope;
- professional role.

> **AI-discovered Knowledge ≠ approved Planedo knowledge.**

Prompt ≠ Methodology

A language model can formulate plausible procedures from existing information.

A plausible procedure is not automatically an approved methodology.

Material professional rules belong in the controlled knowledge and methodology architecture.

The rule is:

> **Prompt ≠ Methodology**

This keeps professional rules traceable independently of individual prompts, models or AI providers.

No matching profile means no AI improvisation

Where no suitable controlled assessment framework exists for a case, AI is not permitted to invent the missing methodology autonomously.

Such a case may require:

- additional expert review;
- methodology development;
- specialist review;
- further research.

Accordingly:

"Methodology not yet sufficiently established"

can be a professionally correct outcome.

Missing evidence is not replaced by AI

Generative AI can produce plausible content.

In environmental validation, however, missing case-specific information must not silently be replaced by a plausible model assumption and then treated as real evidence.

The rule is:

> **Missing Evidence ≠ AI-generated Evidence**

Unknown values also do not automatically become AI estimates unless the methodology explicitly permits this.

AI must not exceed claim boundaries

Professional claim boundaries apply equally to human and AI-assisted processing.

A model must therefore not turn:

Presence

automatically into:

Population

Nor may it turn:

Infiltration → Recharge

or

SOC Stock → Net Removal

or

Intervention → Outcome

A plausible inference does not replace a professionally permitted impact pathway.

Recommendation and decision remain separate

AI can prepare structured professional recommendations.

Such a recommendation may, for example, indicate:

- information sufficient;
- additional evidence required;
- possible contradiction;
- methodology not applicable;
- additional review required.

The recommendation remains separate from the final decision.

> **AI Recommendation ≠ Final Decision**

Automatable ≠ autonomously finalisable

Not every use case is equally suitable for automation.

Standardised and clearly defined cases can be processed more automatically than complex specialist cases.

The degree of automation does not change the underlying responsibility boundary.

> **Automation Eligibility ≠ Human-Gate Removal**

The final professional validation decision remains under human control.

Human Gate

The Human Gate is not merely a formal click following an already autonomous AI decision.
The human-controlled professional decision must in particular allow the reviewer to:

- understand the decision basis;
- identify relevant limitations;
- request additional information;
- disagree with a recommendation;
- reject validation.

Not every processing step has to be manual.
Automation can prepare the professional decision.
It does not replace it.

"The AI says so" is not a validation rationale

A professional decision should be traceable to:
Evidence
+
Controlled Knowledge
+
Methodology
+
Baseline
+
Calculation or Assessment
+
professional review
+
Human Gate
A model output alone is not a sufficient environmental validation rationale.

Critical uncertainty does not become a forced positive claim

Where a necessary professional requirement is not sufficiently met, a positive result should not be produced merely because a model considers it probable.
For critical integrity questions:

> **Insufficient basis → no stronger positive claim.**

Professional integrity therefore takes precedence over process speed or desired outcome.

The AI principle

The Planedo AI architecture can be reduced to a clear allocation of roles:

AI CAN
extract · structure · search · assess · prepare

AI CANNOT ALONE
activate knowledge · invent methodology · create evidence · exceed claim boundaries · finalise environmental truth
The central principle is:

> **AI makes the assessment process more capable.**
> **Controlled Knowledge defines the professional boundaries.**
> **And the final decision remains under human control.**

---

12 · From Validated Climate Impact to a Planedo

Environmental impact comes first.

A Planedo is not created at the beginning of an environmental assessment.
It stands at the end of a defined professional chain.
The basic sequence is:

real-world event
↓
Evidence
↓
Methodology + Baseline
↓
Full Validation
↓
fully validated positive net climate impact
↓
Planedo capacity
↓
permitted disposition
↓
minting and registry documentation

The validated climate impact remains the professional primary quantity.
The Planedo is a system unit derived from it.

The Planedo unit

The public definition is:

---

1 Planedo = 10 kg CO_2e

of fully validated net climate impact

The relationship is:

Climate Impact → Planedo Capacity

not:

Planedo Capacity → desired Climate Impact

The impact is determined professionally first.
Only afterwards is the maximum possible Planedo quantity derived.

Prevalidation does not create capacity

Prevalidation can assess:

- plausibility;
- methodology suitability;
- available evidence;
- additional information needs.

It does not yet create fully validated climate impact.
Therefore:

> **Prevalidation ≠ Planedo Capacity**

Effect-ID qualifies an impact pathway

An Effect-ID can qualify the methodological impact mechanism of a defined product or service.
It describes the professional conditions under which impact may later be assessed following actual use.
It is not itself realised environmental impact.

> **Effect-ID ≠ Planedo Capacity**

Potential-ID is ex ante

A Potential-ID can structure for a project in particular:

- methodology;
- baseline;
- monitoring;
- later evidence logic.

It describes a qualified future impact pathway.
It does not create future Planedo quantity in advance.

> **Potential-ID ≠ Planedo Capacity**

and:

Projected Effect ≠ Realized Effect

A real realization event is required

Between potential and final impact lies the actual real-world event.

Depending on the use case, this may be, for example:

- actual use;
- actual deployment;
- commissioning;
- physical substitution;
- realised project change.

The relevant application profile determines which realization event is required.

Without a methodologically permitted realization event, no positive Planedo capacity arises.

Full Validation before capacity

For positive climate validation, the relevant professional context requires in particular:

appropriate methodology
+
real realization
+
sufficient evidence
+
professionally appropriate baseline
+
valid net climate assessment
+
control of relevant secondary effects
+
control against double counting
+
Human Gate

Only afterwards can Planedo capacity arise.

Only Climate creates Planedo capacity

Water, soil, biodiversity and circularity can represent important and fully validated environmental impacts.

They are not converted into Planedos.

> **Only Climate Creates Capacity**

Planedo capacity is therefore not a universal environmental assessment.

Only fully covered units

One Planedo corresponds to exactly 10 kg CO_2e of fully validated net climate impact.

Units that are not fully covered are not created by rounding up.

Therefore:

> **No rounding up to unvalidated impact.**

A smaller residual quantity is also not automatically combined with arbitrary other effect lineages to create a new unit.

No over-allocation

A specific validated climate impact can create only a limited Planedo capacity.

The sum of all uses must not exceed the available capacity.

Splitting existing capacity does not create additional capacity.

No double counting of the same physical effect

A real climate impact may be visible along a supply chain or in several reporting views.

This does not create additional physical climate impact.

The principles are:

> **One Physical Effect, One Lineage**

and:

> **No Double Count**

No Double Mint

The same available Planedo capacity must not be minted more than once.

Capacity already consumed or minted is not available again for the same mint.

> **No Double Mint**

Minting does not create the climate impact

Minting uses already fully validated and available Planedo capacity.

It does not recalculate climate impact.

The rule is:

Mint ≠ Climate Validation

The professional decision precedes the technical registration.

The registry documents – it does not create environmental truth

The Planedo registry is used for traceable documentation of system events.

Professional environmental truth, however, arises earlier from:

- evidence;
- Controlled Knowledge;
- methodology;
- baseline;
- professional assessment;
- Human Gate.

Therefore:

> **Registry ≠ Environmental Source of Truth**

A technical registry entry cannot replace missing professional validation.

A Planedo is not a universal environmental indicator

A Planedo quantity represents only the defined fully validated net climate impact.

It does not automatically state that a product, project or company has positive impacts across all environmental domains.

Other environmental impacts remain separately visible in the environmental impact profile.

> **Planedo Capacity ≠ Universal Environmental Score**

Pilot classification

In the pilot, a Planedo is:

- **not a means of payment;**
- **not a general carbon offset certificate;**
- **not freely tradable.**

References to external standards or institutions also do not imply external certification or recognition of Planedo.

The Planedo principle

The core logic is:

> **Environmental impact comes first.**
> **Capacity is derived from it.**
> **One physical effect may create Planedo capacity only once.**
> **And technical registration never replaces professional validation.**

---

13 · Sources and Versioning

Source ≠ Planedo rule.

Planedo uses external professional sources, including for example:

- legal and regulatory sources;
- standards;
- scientific publications;
- technical guidance;
- official reference data.

A source does not become a Planedo rule merely by existing.

Its role must be determined for the relevant professional use case.

Sources require clear identity

For release-relevant professional sources, controlled attributes may include:

- issuer;
- title;
- version or edition;
- jurisdiction;
- publication date;
- effective date;
- professional scope;
- role within Planedo.

This prevents different versions or scopes from being mixed unnoticed.

Current and Future remain separate

A source may be:

- under development;
- published;
- adopted but not yet effective;
- currently in force;
- superseded or withdrawn.

These states have different professional meanings.
Therefore:

> **Future ≠ Current**

and:

> **Publication Date ≠ Effective Date**

A future rule does not replace the current source prematurely.

Newer ≠ automatically more suitable

A newer source may contain important improvements.
It is not automatically the correct basis for every case merely because of its date.
Relevant checks include:

- scope;
- jurisdiction;
- period;
- definitions;
- technical or professional fit.

> **Newer ≠ automatically Applicable**

Source conflicts are resolved professionally

Different sources may contain different values or claims.
Planedo does not resolve material conflicts by arbitrary averaging.
First it is assessed whether differences arise from, for example:

- different scope;
- different jurisdiction;
- different version;
- different definition;
- different measurement method;
- different system boundary.

If a relevant conflict cannot be resolved sufficiently, additional expert review may be required.

Reference data requires context

An individual factor is not a context-free truth.
A controlled calculation input may require in particular:
Source
Version
Geography
Period
Unit
Technology / Activity Context
Method Context

A factor without sufficient context is not a sufficiently controlled calculation basis.

Standards provide professional reference

Planedo may refer to external standards, frameworks and official sources.
This does not automatically imply external certification.

> **Reference ≠ Certification**

Use of a standard does not automatically mean:

- recognition of Planedo by its issuer;
- certification of Planedo;
- external assurance of a specific Planedo validation.

Likewise:
Assurance-ready ≠ externally assured.

Knowledge evolves

Regulation, science, reference data and methodologies change.
Planedo must be able to incorporate such changes.
Controlled Knowledge therefore does not mean freezing knowledge permanently.
Control lies in handling change traceably.

Decisions remain linked to their basis

A final professional decision should remain traceable to the state of knowledge on which it was actually made.
This may include:

- evidence versions used;
- methodology;
- baseline;
- reference data;
- relevant sources;
- professional approval.

A later update does not silently overwrite this historical basis.

New version ≠ new past

The central versioning principle is:

> **New version ≠ new past.**

A new:

- source version;
- methodology version;
- baseline;
- reference-data version

may be relevant to future decisions.
It does not automatically change a historical decision that has already been completed.
Where reassessment is required, it must remain recognisable as such.

Open research is legitimate

Not every complex environmental question has to be fully standardised already.
Some subjects may continue to require:

- specialist expertise;
- additional data;
- methodology development;
- further research.

A controlled system must therefore be able to state:

> **"There is not yet a sufficiently robust basis for this claim."**

That professional limitation is preferable to unjustified certainty.

The public knowledge base is also versioned

This Public Edition documents a particular published state of knowledge.
Material professional changes will be documented in a new public version.
Earlier approved editions remain available for traceability.
This makes it possible to distinguish between:

the published state at that time
and
the current state of knowledge.

Public simplification has a fixed boundary

The Public Edition is intentionally more concise than the internal professional knowledge base.
It does not disclose every:

- internal assessment rule;
- technical control mechanism;
- test case;
- security logic;
- implementation detail.

The binding rule is nevertheless:

> **Public simplification may reduce detail – but it must never strengthen a professional claim.**

This rule connects the internal Controlled Knowledge Base with Planedo's public knowledge presentation.

The versioning principle

The Planedo knowledge architecture therefore follows a clear chain:
identify source
↓
determine version and status
↓
verify scope
↓
define professional role
↓
use in methodology and assessment in a controlled manner
↓
preserve decision basis
↓
develop later changes in a versioned manner
The central principle is:

> **Knowledge may evolve.**
> **Rules may improve.**
> **Sources may change.**
> **But no new version silently rewrites the professional past.**

Glossary

The following terms explain the key professional concepts used in this Public Edition. The definitions are deliberately written for public readability.

Controlled Knowledge

Planedo's controlled professional knowledge base.
It comprises classified sources, rules, methodologies and reference foundations that may be used for a defined professional purpose.
Discovered ≠ verified ≠ approved.

Environmental Impact

A professionally determined change in the environment compared with an appropriate comparison or reference basis.
Planedo distinguishes five primary impact dimensions:
Climate · Water · Soil · Biodiversity · Circularity

Intervention

An action or change that actually took place.
An intervention may be a prerequisite for environmental impact. Its implementation does not automatically prove that the expected impact actually occurred.
Intervention ≠ Outcome.

Realization Event

The methodologically relevant real-world event through which a previously possible environmental impact can actually occur.
The specific use case determines what constitutes the required realization.

Evidence

A case-specific information source documenting a relevant fact.

The existence of evidence does not automatically mean that it sufficiently supports a particular impact claim.

Evidence exists ≠ Evidence is sufficient.

Canonical Fact

A professionally and semantically classified, versioned fact with traceable provenance.

A fact describes **what has been established**.

It is not automatically a statement about **what environmental impact follows from it**.

Fact ≠ Claim.

Impact Claim

A methodologically defined statement about a specific environmental impact.

Each claim has exactly one primary impact dimension.

One real-world event may create several separate claims.

Baseline

The methodologically justified reference case describing what would probably have happened without the intervention under consideration.

A baseline is not automatically the latest historical value, an average, a legal threshold or a target condition.

Methodology

The general professional assessment framework for a particular type of environmental impact.

A methodology defines, in particular, scope, permitted claims, baseline logic, evidence requirements, assessment approach and professional claim boundaries.

Application Profile

The specifically permitted use case of a methodology.

The application profile operationalises the general assessment framework, for example for technology, activity, location, period and required evidence.

Methodology ≠ Application Profile.

Prevalidation

A preliminary assessment of plausibility, methodology suitability and evidence readiness.

It does not yet create fully validated environmental impact.

Prevalidation ≠ Full Validation.

Full Validation

The final environmental validation after the methodologically required realization event.

Evidence, methodology, baseline, assessment and professional control requirements are brought together into a final decision basis.

Human Gate

The human-controlled final professional decision.

AI and automated systems may support the assessment process and prepare recommendations, but they do not finalise the environmental decision on their own.

AI assists. Humans decide.

Effect-ID

A qualified methodological impact mechanism for a defined product or service.

An Effect-ID can prepare a later impact pathway but is not itself realised environmental impact and does not create Planedo capacity.

Potential-ID

A qualified ex-ante project impact and monitoring pathway.

A Potential-ID can structure methodology, baseline, monitoring and later evidence logic. It does not create future Planedo capacity in advance.

Planedo Capacity

The maximum number of complete Planedo units that can be derived from fully validated positive net climate impact.

Only the climate dimension can create Planedo capacity.

Planedo

The Planedo system unit for fully validated net climate impact.

> **1 Planedo = 10 kg CO_2e of fully validated net climate impact.**

Water, soil, biodiversity and circularity impacts are not converted into Planedos.

Document Notes

Document

Planedo Controlled Knowledge – Public Edition
Methodological Foundations for Traceable Environmental Impact

English Edition
Version 1.0 · August 2026
Published by: **Planedo Tech GmbH**

Purpose and scope

This document describes the essential publicly relevant professional principles of Planedo environmental impact validation.

It explains in particular the treatment of:

- evidence and facts;
- Controlled Knowledge;
- baselines;
- methodologies and application profiles;
- climate, water, soil, biodiversity and circularity;
- Multi-Impact;
- artificial intelligence and human professional control;
- Planedo capacity;
- sources and versioning.

The description of an environmental domain or methodology does not automatically mean that every conceivable use case can already be validated in a standardised or automated manner.

A specific case may require additional evidence, expert review, specialist methodology or further research.

Public Edition

This Public Edition is a controlled public summary of Planedo's professional knowledge and validation architecture.

It intentionally does not disclose every internal:

- methodology detail;
- assessment rule;
- control mechanism;
- test case;
- security logic;
- technical implementation.

The following rule is binding:

> **Public simplification may reduce detail – but it must never strengthen a professional claim.**

External standards and sources

Planedo may refer to external standards, regulatory frameworks, scientific sources, technical guidance and reference data.

Such reference does not automatically imply:

- certification of Planedo by the relevant organisation;
- recognition or endorsement of Planedo by that organisation;
- external assurance of a particular Planedo validation.

> **Reference ≠ Certification.**

Nor is documentation structured to be "assurance-ready" the same as actual external assurance.

Role of artificial intelligence

Planedo may use AI to support document analysis, data extraction, structuring, research and assessment.

AI does not autonomously activate professional Planedo knowledge and does not make the final environmental validation decision on its own.

> **AI assists. Humans decide.**

Technical model confidence replaces neither sufficient evidence nor professional validation confidence.

Planedo unit

The public definition is:

> **1 Planedo = 10 kg CO_2e of fully validated net climate impact.**

Only the climate dimension can create Planedo capacity.
Water, soil, biodiversity and circularity remain distinct environmental impacts and are not arbitrarily converted into CO_2e or Planedos.
In the pilot, a Planedo is:

- not a means of payment;
- not a general carbon offset certificate;
- not freely tradable.

A Planedo quantity is also not a universal indicator of the overall environmental performance of a product, project or company.

Case-specific decisions

The general statements in this document do not replace a specific validation decision.
Whether an environmental impact can be validated in an individual case depends on the relevant professional basis.
This may include in particular:
Evidence · Methodology · Application Profile · Baseline · Reference Data · Assessment · Professional Controls · Human Gate
Examples in this document illustrate professional principles and do not constitute universal outcome guarantees.

Versioning

This Public Edition documents the published state of knowledge:
Version 1.0 · August 2026
Scientific findings, regulatory sources, reference data and methodologies can evolve.
Material public changes will be documented in a new version.
Earlier approved editions remain available for traceability.

> **New version ≠ new past.**

Further information

Additional public explanations are provided through **Planedo Knowledge & Methodology** and the **Planedo Wiki**.
The current Public Edition will be made available through the Planedo website.

Closing principle

With this Public Edition, Planedo follows a simple approach to transparency:

> **The public should be able to understand the professional principles by which environmental impact is assessed – without disclosing internal security, assessment and implementation mechanisms.**

The following principles apply in particular:
No claim stronger than its professional basis supports.
No artificial equivalence between different environmental impacts.
No final AI decision without human professional control.
No Planedo capacity without fully validated positive net climate impact.
No new version that silently rewrites the professional past.