

Drenthe's Natural Capital - COP session 38 Netherlands pavilion

From Value to Decisions



provincie Drenthe



Netherlands Enterprise Agency

Program

Time	Presentation	Name	Organisation
10:00	Opening	Rikke Arnouds	Province of Drenthe
10:05	Project goals and outcomes - Ecosystem services in Drenthe	Vince van 't Hoff	Foundation for Sustainable Development (FSD)
10:20	Q&A	Vince van 't Hoff	Foundation for Sustainable Development (FSD)
10:30	Policy relevance	Rikke Arnouds	Province of Drenthe
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10:50	Audience interaction	All & all of you	

Background

Need for stronger justification of Drenthe's nature policy

- Large & urgent ambitions, but the policy is under strain
- “Because we have to” as sole motivation is not convincing

Position paper: a broader rationale for the “why”

- Nature as culture / identity
- Nature as self-interest (economy and health)
- Nature as intrinsically valuable
- Nature as a statutory responsibility

Need to explore “Nature as self-interest” in greater depth

- Mapping the scale, diversity and allocation of nature's value



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Drenthe's Natural Capital

From Value to Decisions



Vince van 't Hoff

FSD – Senior Program Officer



Ecosystem services & economic valuation

“The benefits nature provides to people”

SYSTEM THINKING

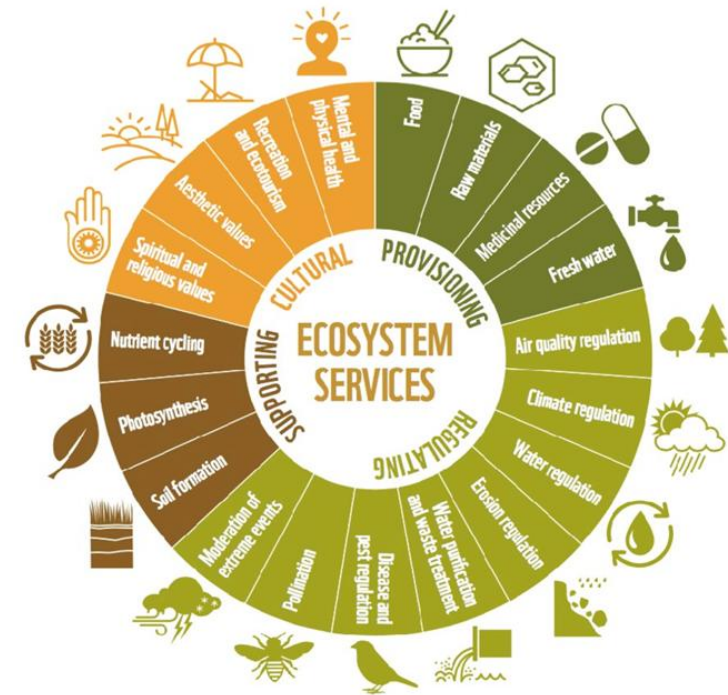
A landscape perspective

- Private and public benefits
- Identify beneficiaries
- See how benefits connect across a landscape

ECONOMIC VALUATION

Make hidden values visible

- Value, not price
- Show order of magnitude and direction of change
- Highlight trade-offs and identify stakeholders



Behind every ecosystem service is a beneficiary.

The value of nature in Drenthe

PROJECT OBJECTIVE

To provide insight into the current socioeconomic value of her nature and the societal consequences of (not) achieving nature- and biodiversity targets

THREE COMPONENTS

01

Current value

What ecosystem services does Drenthe's nature provide today?

02

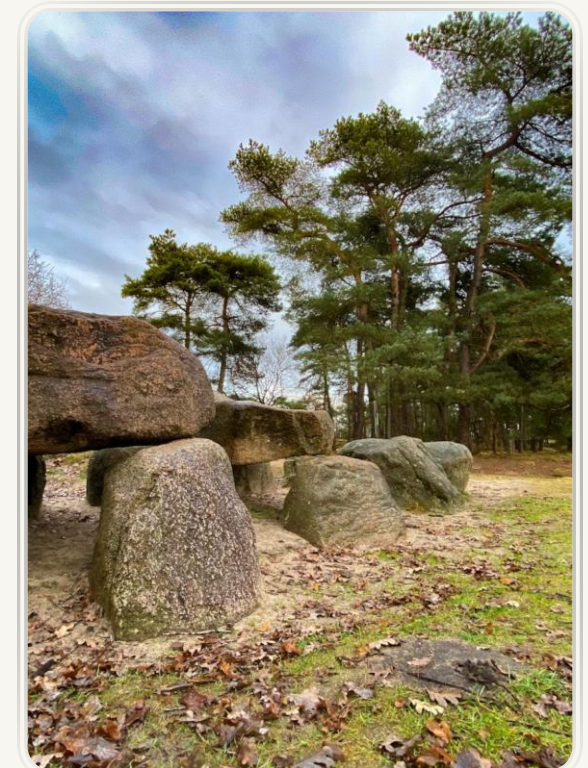
Outlook to 2050

How could supply and societal demand change under pressure?

03

Outlook to 2050

What additional value could arise if nature and biodiversity ambitions are met?



A spatial assessment across three landscape types

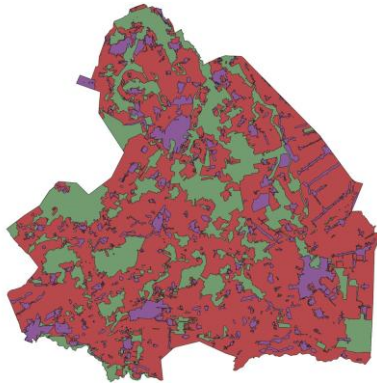
GIS analysis connects land use, ecosystem types and valuation evidence



NATURAL AREAS

61,000 ha

Ecosystem types · CBS (2021)



RURAL NATURE

18,000 ha

Landscape elements · LASREG



NATURE IN TOWNS & CITIES

7,000 ha

Landscape elements · LASREG

VALUATION APPROACH

01 **Classify nature** Three landscape types

02 **Map in GIS** Spatial data and area size

03 **Value services** Dutch natural capital accounts, literature and other sources

Nature provides different bundles of benefits

TYPE	ECOSYSTEM SERVICE	NATURE IN TOWNS & CITIES	NATURAL AREAS	RURAL NATURE
REGULATING	Air pollutant removal	●	●	●
	Pollination	●	●	●
	Carbon sequestration	●	●	●
	Water retention	●	—	—
CULTURAL	Recreation	●	●	●
	Tourism	—	●	●
	Green liveability (housing prices)	●	●	—
	Health benefits	●	—	—
	Intrinsic value / biodiversity	—	●	●

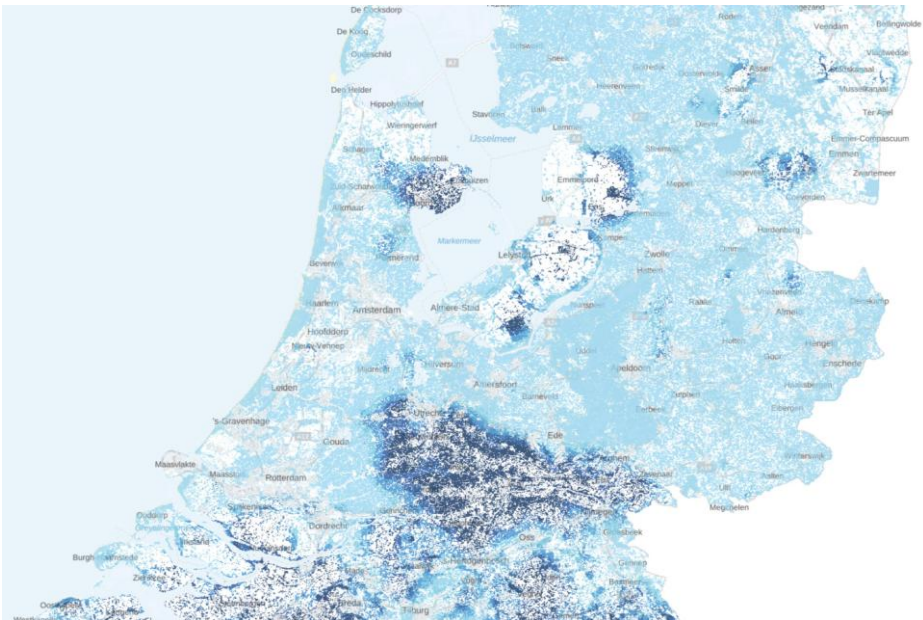
Services differ by location: nature type, landscape context and societal demand use all matter.

Pollination: nature’s contribution to food production

WHY RELEVANT

A large proportion of crops depends on pollination

Wild pollinators support food production — a regulating ecosystem service.



1

Ecosystem type

Forest, heathland, etc.

2

Habitat suitability

Heathland > grassland

3

Nearby crops

Dependence on pollination

ESTIMATED MONETARY VALUE

NATURAL AREAS

€3.0M

€48 / ha

RURAL NATURE

€2.8M

€153 / ha

URBAN NATURE

€0.1M

€19 / ha

REPORTED TOTAL

€5.9M

Agriculture

Relevant policy theme: agriculture · Primary beneficiaries: landowners and farmers

Nature’s estimated annual economic value: €507 million

Total economic value in euros per year

NATURE IN TOWNS & CITIES		
7,000 ha		
€66M		
SERVICE	PER HA	TEV
REGULATING SERVICES		
Air filtration	€150	€1.0 M
Pollination	€20	€0.1 M
Carbon sequestration	€90	€0.7 M
Water retention capacity	€7,130	€22.0 M
Avoided water damage		p.m.
Soil fertility		—
Pest control		p.m.
CULTURAL SERVICES		
Recreation	€80	€0.2 M
Tourism		—
Green liveability	€3,460	€1.5 M
Health benefits	€6,170	€40.7 M
Intrinsic value		p.m.
Total	€17,090	€66.3 M

NATURAL AREAS		
61,000 ha		
€401M		
SERVICE	PER HA	TEV
REGULATING SERVICES		
Air filtration	€40	€2.1 M
Pollination	€50	€3.0 M
Carbon sequestration	€160	€9.5 M
Water retention capacity		—
Avoided water damage		p.m.
Soil fertility		p.m.
Pest control		p.m.
CULTURAL SERVICES		
Recreation	€420	€25.6 M
Tourism	€5,590	€340.6 M
Green liveability	€1,010	€17.7 M
Health benefits		p.m.
Intrinsic value	€30	€1.9 M
Total	€7,290	€400.5 M

RURAL NATURE		
18,000 ha		
€41M		
SERVICE	PER HA	TEV
REGULATING SERVICES		
Air filtration	€60	€1.1 M
Pollination	€150	€2.8 M
Carbon sequestration	€150	€2.8 M
Water retention capacity		p.m.
Avoided water damage		p.m.
Soil fertility		p.m.
Pest control		p.m.
CULTURAL SERVICES		
Recreation	€20	€0.4 M
Tourism	€1690	€31.1 M
Green liveability	€1,270	€2.2 M
Health benefits		p.m.
Intrinsic value	€10	€0.2 M
Total	€3,350	€40.5 M

p.m.” indicates services for which monetary valuation was not available; these are not included in the €476M annual total.

Who benefits — and where does the value accrue?

Ecosystem-service beneficiaries and recipients of monetised economic value are not always the same.

ECOSYSTEM SERVICE	BENEFICIARIES · WHO BENEFITS?	RECIPIENT OF ECONOMIC VALUE · WHERE VALUE ACCRUES
Air filtration	Residents of Drenthe (€4 M)	Public value (€4 M)
Pollination	Farmers (€6 M)	Farmers (€6 M)
Carbon sequestration	Public interest (€13 M)	Public value (€13 M)
Water retention capacity	Residents of Drenthe (€22 M)	Water authorities (€22 M)
Recreation	Residents of the Netherlands (€26 M)	Tourism & recreation sector (€26 M)
Tourism	Tourists (€372 M)	Tourism & recreation sector (€372 M)
Green liveability	Property owners in Drenthe (€21 M)	Property owners in Drenthe (€21 M)
Health benefits	Employees (€35 M) & residents of Drenthe (€6 M)	Employers (€35 M) & health insurers (€6 M)
Intrinsic value	Residents of Drenthe (€2 M)	Public value (€2 M)

Two perspectives on the same value — beneficiaries and recipients of economic value should not be added together.

Nature underpins provincial priorities

Ecosystem services connect nature to multiple policy domains

SEVEN POLICY THEMES

Nature can support many provincial challenges — and society also depends on a functioning natural environment.

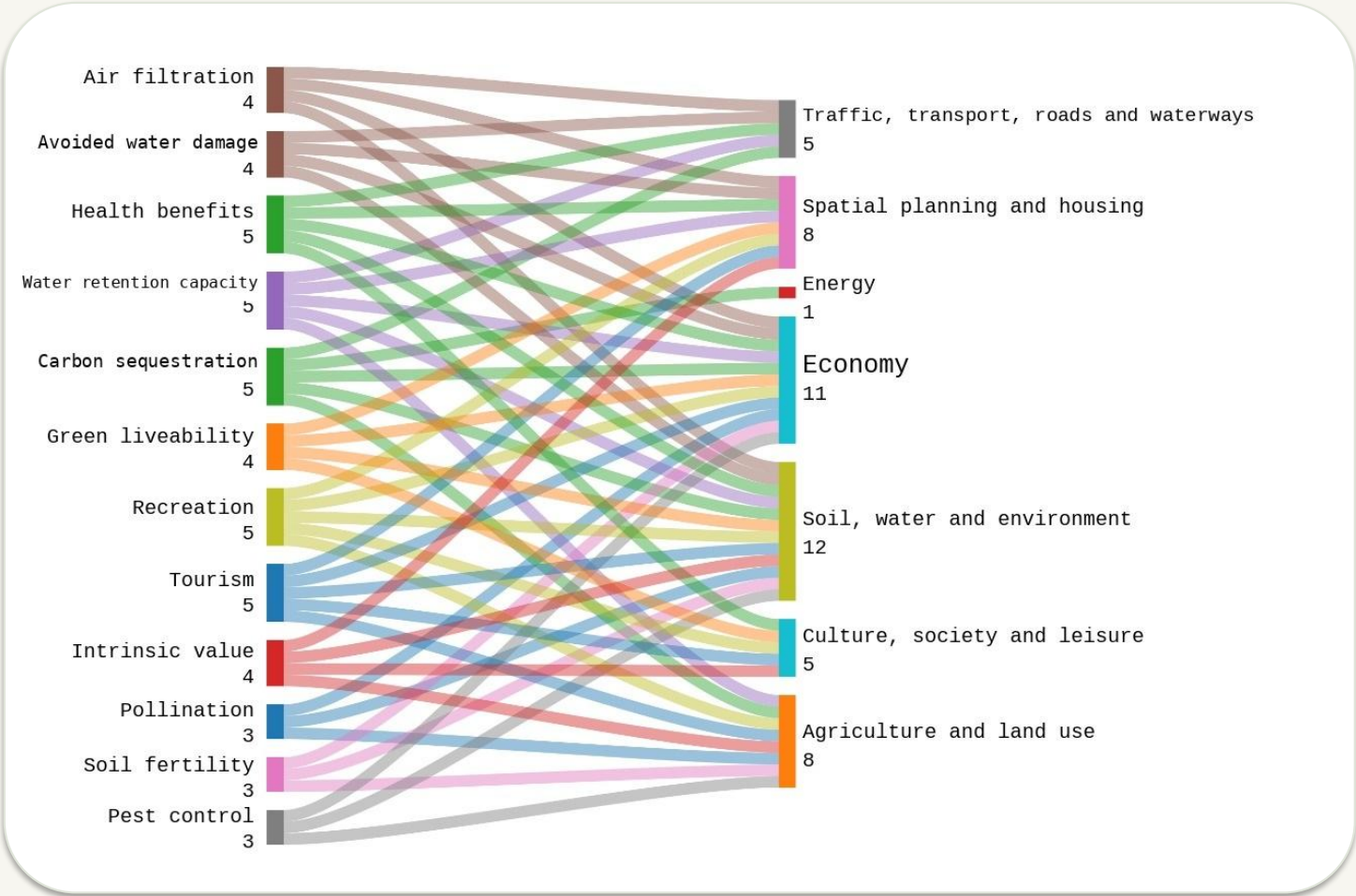
The connections shown can represent both:

DEPENDENCIES

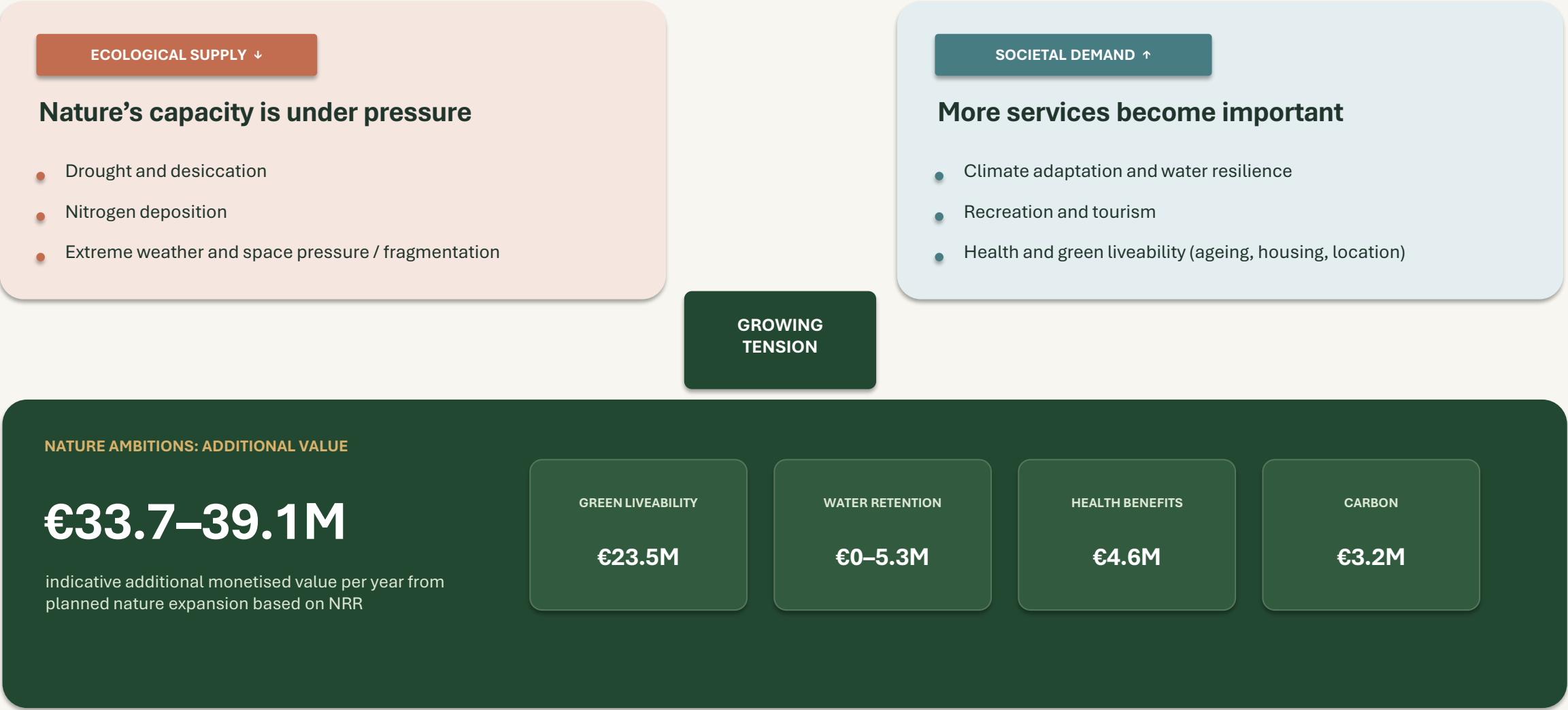
IMPACTS

Examples of where nature contributes to provincial goals:

- Investing in tourism
- Making neighbourhoods climate-resilient
- Reducing air pollution



2050 outlook: rising demand, nature under pressure



What this means for Drenthe

Make the societal value of nature visible — and use it in decisions



ESTIMATED VALUE

€507 M

per year

~€10 bn

net present value
2025–2050

- Highest total value: natural areas
- Highest per hectare: towns and cities
- These are order-of-magnitude estimates, not the full value of nature
- Not all services can be monetised, and biodiversity has intrinsic value.

01

MAKE VALUE VISIBLE IN POLICY AND DECISION-MAKING

Embed ecosystem services in provincial policy, spatial planning and investment decisions. Weigh societal gains and losses alongside other economic interests.

02

INVEST STRATEGICALLY TO CONNECT NATURE WITH SOCIETAL AND PROVINCIAL CHALLENGES

Connect nature with provincial challenges and priorities. Use a landscape approach to connect nature with health, climate adaptation, water, agriculture, liveability and the regional economy.

03

DEEPEN KNOWLEDGE AND TOOLING DEVELOPMENT

Deepen local evidence for soil fertility, pest control, agricultural nature and water retention. Start integration per policy domain and create tools and dashboards to showcase impacts of interventions.

Nature is part of the solution to Drenthe’s provincial challenges.



Thanks for listening



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Q&A



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First ideas on how to proceed

Pilots for nature-inclusive spatial development

- Present an alternative design with maximal ESD benefits, calculate costs and benefits for a sound business case
- Examples: transformation of a run-down businesspark, new urban housing project, or outdated holiday resort

A tool that includes green benefits in provincial investments

- To complement the current practice of only representing the costs of investments in nature while overlooking benefits
- Opens the door for prioritizing nature based solutions

Include ESD valuation in integral area development processes

- F.e. net biodiversity gain, nature inclusive regional accounting



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Panel discussion



Dr Caroline van Leenders – RVO & Ministry of LNV

For more than thirty years Caroline has successfully engaged transformational change in the field of sustainable energy, plant-based food and biodiversity. In the last 10 years her focus has been on accelerating the transition towards a biodiversity-inclusive financial sector by bringing people together by supporting the formation of coalitions such as FfB Foundation and the TNFD.



Gerko Arkema – Province of Drenthe

Strategic Policy Advisor, whose main goal it is to build a nature-inclusive society. Currently working on a rural area improvement program to improve biodiversity, water quality and water availability and to stimulate rural development.



Daan Groot - Nature^Squared

Managing director of Nature^Squared and the domain coordinator for the Financial Sector of the Collectief Natuurinclusief (Nature Inclusive Collective), a public private partnership working towards Netherlands to be Nature Positive by 2050.



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Audience interaction

- Think about one important decision making process in your own country / region where the value of nature has – or has not – been incorporated. What have you learned from this example that can help all of us in our future endeavors to integrate economy and ecology?
- And what would need to change for nature and her multiple values to actually influence that decision?

