



REPUBLIC OF ESTONIA
ENVIRONMENT AGENCY



European Union
European Structural
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ENVIRONMENTAL INVESTMENT
CENTRE

Small but Beautiful.

The challenges of
implementing the
Ecosystem Services
concept in Estonia.

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Tallinn, Estonia



Estonian special conditions

Overall

- Small by territory (45 227 km²)
- Small by human population (1,3 mln)
- Culturally still quite nature-oriented

Nature

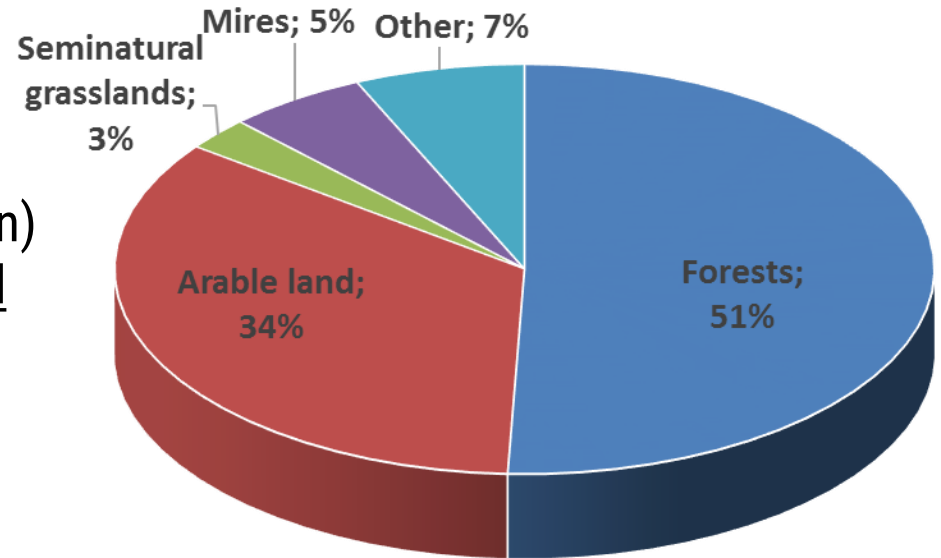
- Ca 1/2 of territory is forest
- Ca 1/3 of territory is arable land
- Ca 1/5 of territory is protected

Species

- Ca 70% species known (28 136 sp)
- Ca 5% species threatened and rising
- Ca 2% species protected

Population

- Low total human density (30 inh/km²)
- High urbanisation (ca 70 % in towns)
- Ca 60% of land is privately owned



Economy

- GDP – 15 883,4 EUR per capita (2016)
- Ca 30% is based on natural resources
- Ca 70% is based on service sectors

Wellbeing

- Ca 80% use Internet
- 100% have access to clean water
- Every second person has a car

Ecosystems in Estonia and their most important services that have been exploited until today

- Fish (P)
- Transport (A)
- Habitat (S)
- Recreation (C)
- Mining (A)

Sea



- Fish (C)
- Habitat (S)
- Water (P)
- Recreation (C)
- Hydropower (A)

Freshwater



- Wood (P)
- Habitat/Biodiv (S)
- Recreation (C)
- Berries/Fungi (P)
- Carbon storage (R)

Forest



- Meat/Milk (P)
- Habitat/Biodiv (S)

Grasslands



- Habitat (S)
- Berries (P)
- Recreation (C)
- Peat (P)
- Carbon storage (R)

Wetlands



- Buildings (A)
- Air cleaning (R)
- Habitat (S)
- Sport (C)
- Art/Education (C)

Urban



- Food (P)
- Water (infiltration) (R)
- Habitat (S)

Soil

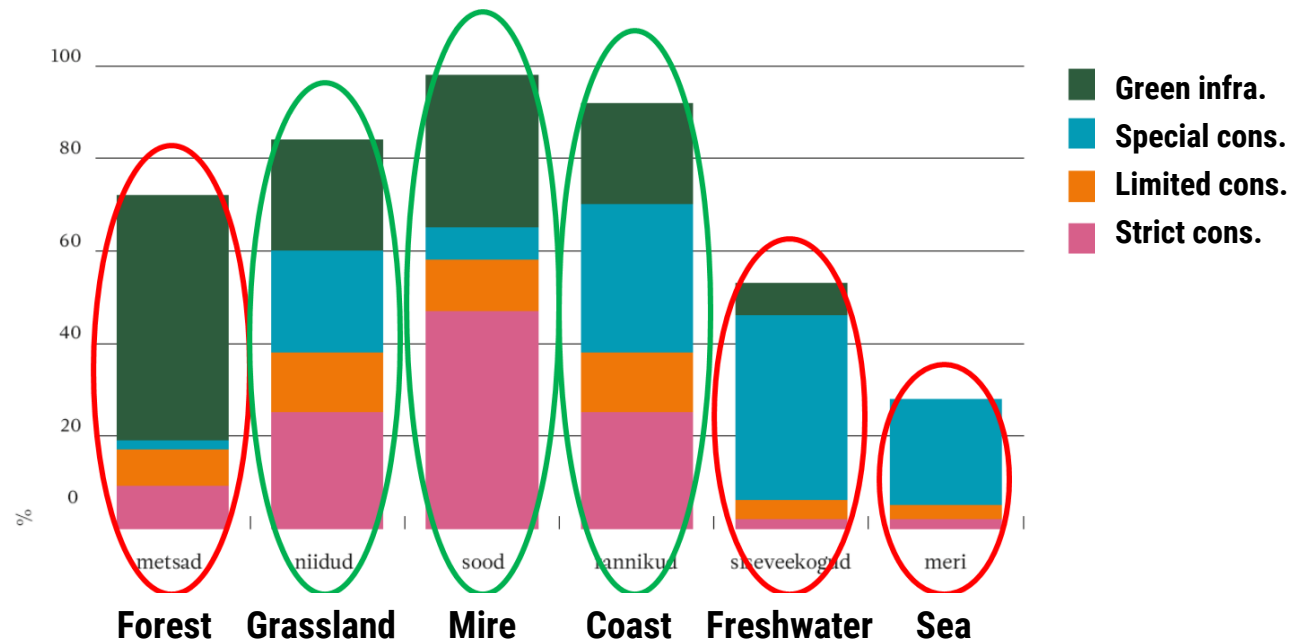


- Food (P)
- Habitat (S)

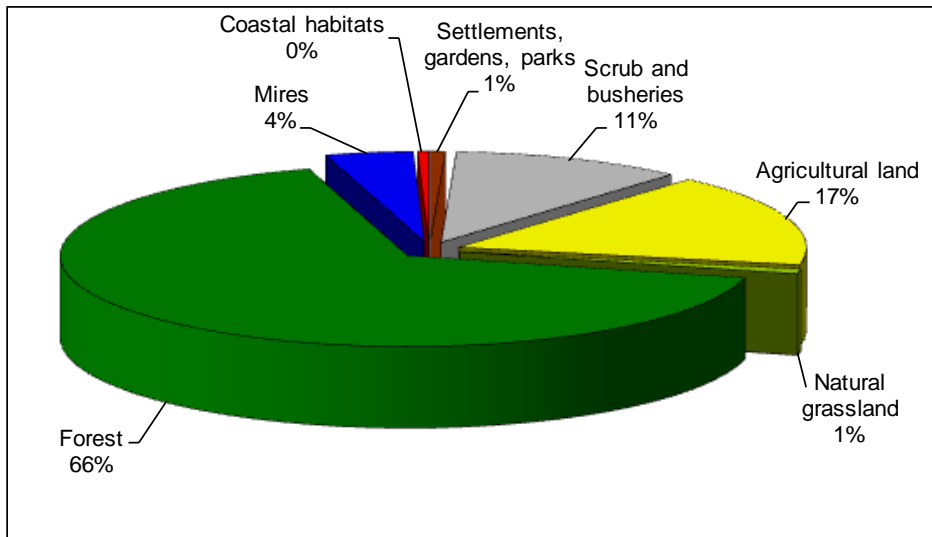
Agricultural



What do we have?






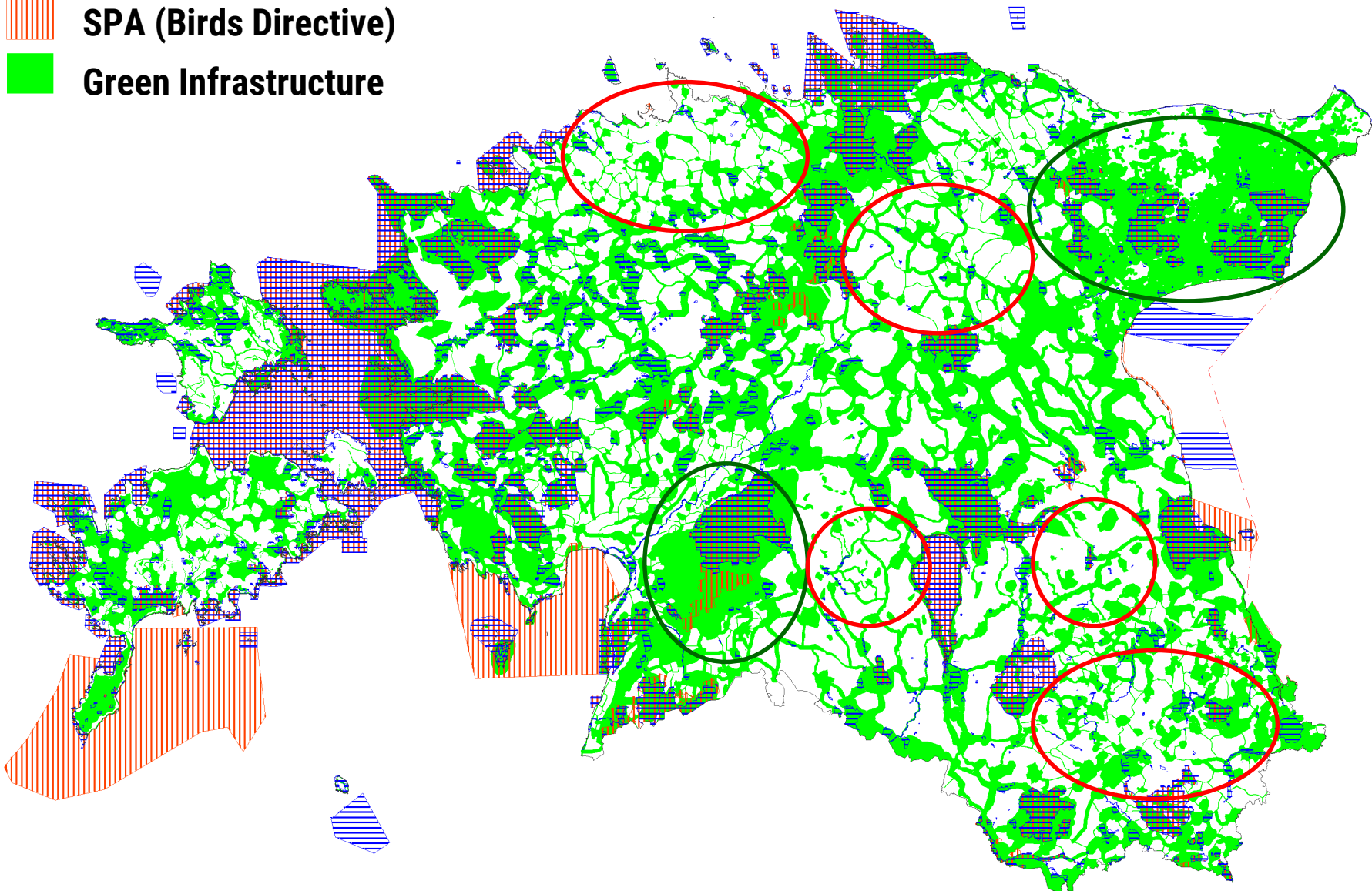
Share of protected area by ecosystems.



Habitat composition of Estonian green infrastructure outside of protected areas, 2008

What do we have? **Estonian green network planning**

-  SAC (Habitats Directive)
-  SPA (Birds Directive)
-  Green Infrastructure



Why? Principles and Strategies

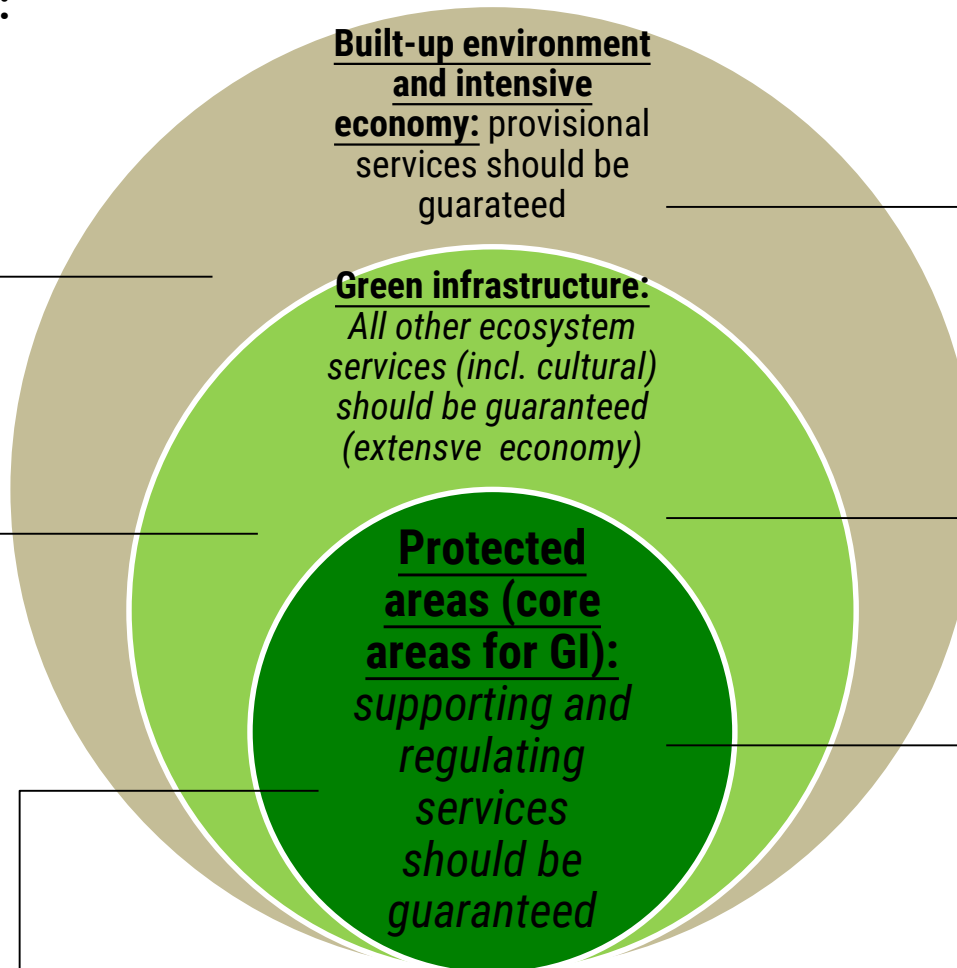
- **Spatial and strategic planning** of human economic activities should be **balanced** with planning of biodiversity and ecosystem services protection as well as with assessment of human impact to them.
- **Biodiversity and ecosystem services** can be safeguarded only through spatial protection within network of spatially well connected areas not as limited, unconnected areas.
- **CBD strategy, EU BD strategy, Estonian National Nature Conservation Development Plan** are targeted to avoid the loss of biodiversity and ecosystem services and especially *focus to sectorized nature conservation policies and green infrastructure development actions.*

What do we plan? Possible planning principle

„Sustainable One-Third Principle“

Without ecosystem services accounting:

- Natural guarantee need will be forgot in areas with intensive economy
- Intensive economy will also sneek into green infrastructure
- Extensive economy will sneek into protected areas



With ecosystem services accounting:

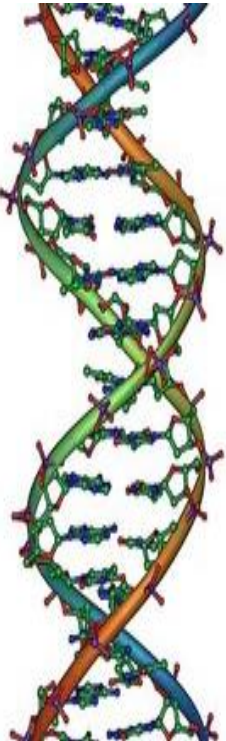
- Intensive economy does not set only quick profit as a goal
- Green infrastructure will have real ecological integrity
- Human wellbeing will be sustainable also in long timescale

What do we plan? Estonian MAES project

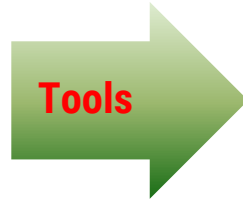
EU structural funds funded project called:
„Essential Tools for Integrating Socio-
Economic and Climate Change Data
into Assessing and Forecasting
Biodiversity Status, and Ensuring Data
Availability” – abbreviation: ELME
2015-2023

2017-2018

Mapping and
assessment of
Ecosystem
Services



Tools



Analysis of
biodiversity
monitoring and
elaboration of
innovative
methods

2019-2020 (-2023)

Implementation of
regular mapping and
assessment, using
elaborated tools and
innovative
monitoring methods



ELME expected results

Working Group I

Ecosystem Services are mapped and their quality assessed (by the end of 2018) and **impletation methods** are created and in use (by 2020-23)

System for analysis and forecasting state of biodiversity and socio-economic environment linked to it is created and implemented, using tools elaborated by Working Group III (by 2020-23)

Working Group II

State level biodiversity monitoring system is **analysed, renewed and optimized**, incl. new, innovative methods and indication (by 2020-23)

New, innovative methods (**at least 3 new methods**, for example drones, wildlife cameras and DNA sampling) are implemented (by 2020-23)

Working Group III

New IT-tool – **biodiversity portal** – is created and implemented for ensuring data availability and rising awareness (by 2020-23)

New IT-tool – **virtual desk** for analysis and forecasting state of biodiversity and socio-economic environment linked to it – is created and implemented (by 2020-23)

Mapping and assessment of Estonian ecosystem (sea, freshwater, wetlands, grasslands, forests, urban, soil) **services**

1. **Road map for mapping and assessment of Estonian ecosystem services** – started in December 2016 and will be ready in May 2017 – **presentation in June 2017**;
2. **Analysis of Estonian Green Network spatial plans: does it work for securing coherence of **Natura 2000 network**; does it work for keeping quality for **ecosystem services**** – starts in May 2017 and will be ready in spring 2018 – **presentation in May 2018**;
3. **Guidelines** for planners at all administrative levels, but focussed to municipal level on how to integrate ecosystem services into green network plans while integrating it into municipal level **general plans** – starts in May 2017 and will be ready in spring 2018 – **presentation in May 2018** – training sessions in the final phase;
4. **Mapping and assessment of ecosystem services** (setting baseline) in Estonia Eesti (starts in September 2017 and will be ready by the end of 2018) – **presentation in the end of 2018**;
5. Specification of **tipping points (critical status)** of Estonian ecosystems (species, habitat, age-class etc structure) and creation of **indicator and monitoring system** for it (2018-2019);
6. Assessment of **state of biodiversity by the ecosystems** in Estonia and **forecasting future trends** (2019-2020);
7. **Guidelines** for taking ecosystem services into account **in EIA and SEA** (2019-2020).

What do we plan? Expected outcomes of ELME

Fulfilling strategic goals and implementation

Actions of ELME project fulfill following strategic goals:

- ✓ **Convention on Biological Diversity: Aichi targets (2020) 1, 3 and 4**
- ✓ **EU biodiversity strategy (2020): Target 2**
- ✓ **Estonian national nature conservation development plan (2020): Target 2 (5 measures) and Target 3 (3 measures)**

Expected outcomes of ELME project are planned to be implemented in:

- ✓ **Estonian spatial planning system (state, county, municipal, detail planning).**
- ✓ **Estonian strategic planning system (water, forest, agriculture, nature protection etc management planning)**
- ✓ **Estonian environmental impact assessment system.**
- ✓ **Estonian national environmental monitoring system.**
- ✓ **In national prognosis system of socio-economically integrated state of biodiversity.**
- ✓ **Better public awareness and easing of work for officials, decision makers and analysts. Two web-based IT tools will be elaborated: one for public awareness (national biodiversity portal) and other for analysis and prognosis (virtual desk).**

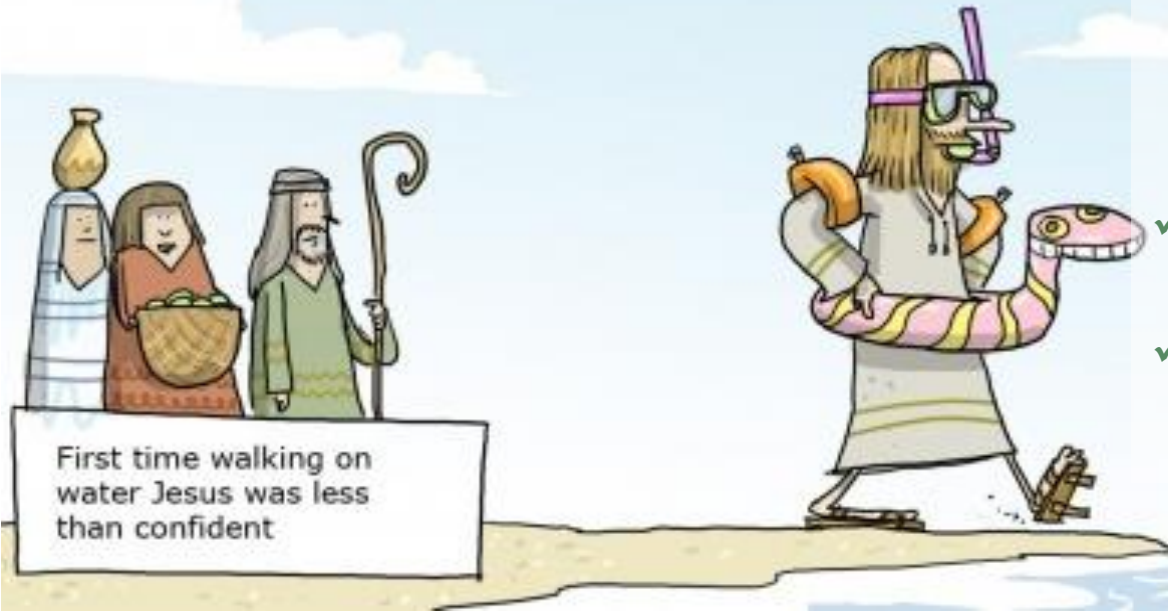
Biggest challenges

Breaking standards in human thinking:

- ✓ **Economic growth can not be eternal**
- ✓ **Nature works as network, not egocentric way**
- ✓ **Human being is part of natural network not centre in it**
- ✓ **All human comforts cause discomfort elsewhere (in nature)**
- ✓ **Unfortunately nature protection in post-modern world can not be done with methods from pre-modern world**

Avoiding misinterpretation of the ES concept:

- ✓ **Every single element in ecosystem should not have a price label separately from the whole (but it should have value)**
- ✓ **ES should not valued and marketed as private goods without knowing and regulating the whole picture**
- ✓ **One should not bring ES to market without constantly knowing and monitoring ecosystem condition**
- ✓ **ES should be balanced with each other**
- ✓ **Private and public goods should be in balance**





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Thank You!

Lauri Klein

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