



Environmental quality and pressures assessment across Europe



Report: A2 - Parameter and method elaboration

...discovering new i-lands or
take a closer look at known i-lands

AR: Mark Frenzel (UFZ, Germany)

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What it is about

To enhance science in LTER sites by...

- Standardisation... of what is measured (parameters) and
- Harmonisation ... how it is measured (methods) in ecosystem / ecological research

in terrestrial, river, lake & marine environments!

And this is...

- Long Term work to come to common denominators
- Lot of group work done by LTER Europe community



Steps we already did...

1. Collection of LTER site parameters (2010)
 - Questionnaire about what is measured at sites

2. Development of the conceptual background & positioning ⇒ A2 meeting (Halle, Dec 2010)
 - As a common base for **assignment** of parameters to ecosystem properties
 - Base for **selection** of parameters

3. Group agreement on Ecological Integrity concept tuned to LTER needs ⇒ A2 meeting Halle, Dec 2010; Budapest, Mar 2011)



		Ecological integrity indicators
ecosystem structures	biotic diversity	flora diversity
		fauna diversity
		habitat structure
		additional variables
	abiotic heterogeneity	soil
		water
		air
		habitat
		additional variables
ecosystem processes	energy budget	input
		storage
		output
		other state variables
		efficiency measures
	matter budget	input
		storage
		output
		other state variables
		efficiency measures
	water budget	input
		storage
		output
		other state variables
		efficiency measures

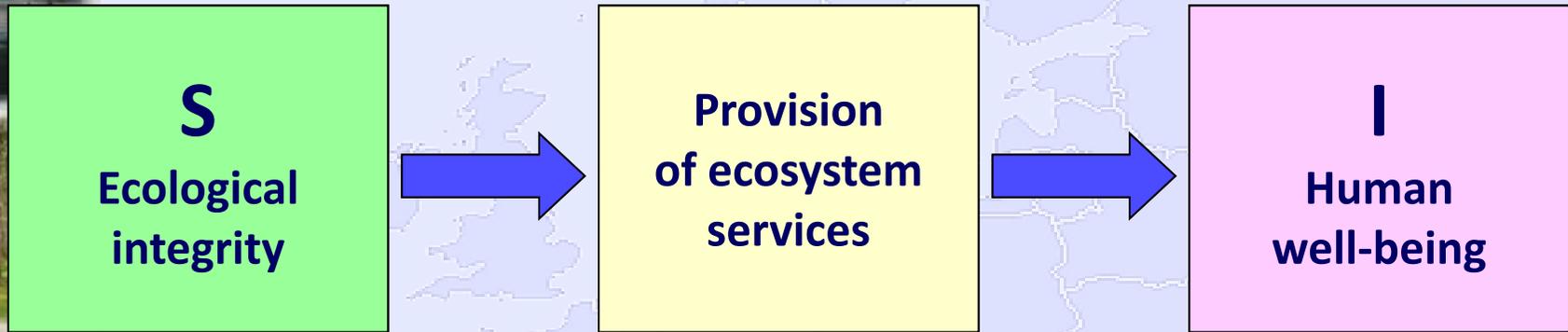
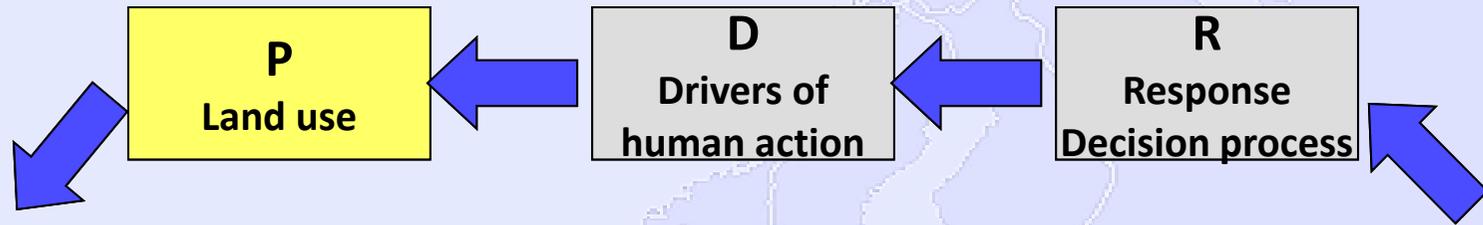
Issues:

Relevance of...

- ...Structures vs. Processes
- ...Biological monitoring vs. abiotic monitoring
- ...Automated device-based vs. person-based monitoring

Complexity of ...

- ...specific indicators like fauna diversity (selected taxa approach)



Ecosystem structures

- biotic diversity
- abiotic heterogeneity

Ecosystem processes

- energy balance
- water balance
- matter balance

Regulating services

- climate regulation
- water purification
- ...

Provision services

- food
- fuels
- ...

Cultural services

- inspiration
- genetic resources
- ...

Social well-being

- health
- social security
- education
- nutrition
- accommodation
- leisure
- ...

Economy

- employment
- spending power
- infrastructure
- progress

... steps continued

Indicator selection procedure (A)

⇒ A2 meeting (Budapest, Mar 2011; Rome, Jun 2011; Bucharest, Nov 2011)

1. Assigning of concrete indicators/parameters to basic EI indicators, e.g. Fauna diversity (EI indicator) => bird diversity (indicator) => bird abundance (parameter)

... still continued

Indicator selection procedure (B)

2. Prioritization (selection of “best” indicators):
Starting in **group work** “by acclamation” / discussion,
but needs (still?!) to be assured to ...

- provide **unique** information
- be biologically **relevant** (maintaining balanced communities)
- be **broadly applicable** to many stressors and sites
- be **cost-effective**: maximum information per unit effort
- be **integrative** (biotic indicators)
- be **interpretable**: distinguishing “good from bad” states



... continued

Indicator selection procedure (C)

3. Asking / begging / chasing people (ENVEurope, ExpeER) by **email** to contribute to the table of tables

⇒ **throughout 2011**

❖ Ecol Integrity tables

- Terrestrial \approx 60 parameters
- Rivers \approx 20 parameters
- Lakes \approx 20 parameters
- Marine \approx 30 parameters

(Proportional to peoples expertise?

Due to heterogeneity of terrestrial habitats?)



Steps in progress

Deliverable of ENVEurope: first version of the
“Manual of harmonized methods for environmental
indicators across different ecosystems”

⇒ Dec 2011 / Jan 2012

Issues

- Shift from **methods** to **data property** descriptors
- Still work on **cross-domain** indication (Ricardo)
- Feedback from **field testing**
- Report will be allowed to be **public available** when?



Steps to be done: Revision of the manual of manuals

1. Filling of gaps (empty cells)
2. Terrestrial: addition of missing animal groups
3. Collection of literature mentioned (*Cornelia Baessler*)
4. Consistency check (just done by *Felix Mueller*)
5. Boiling down parameter numbers & broadening of expert base, creation of a “most wanted” list (to be included in the manual of manuals)

Next steps: Revision of ... *continued*

Boiling down ...

- The actual lists for parameters are still too large to represent “most wanted parameters”.
 - A “hitlist“ is going to be prepared by an online survey (to be announced in June 2012) targeting the international LTER community.
- The final goal is a well-founded ranking of top parameters according to
 - defined criteria
 - considering the background of participating experts (disciplinary and habitat expertise)
 - *increase acceptance by community / enhance promotion*



Next steps: Revision of ... *continued*

Boiling down ...

- Intended products from survey
 - Publication about the “most important parameters in ecosystem research” (similar to “The identification of 100 ecological questions of high policy relevance in the UK” 2006 J App Ecol)
- Preparatory work for the follow-up A2 deliverables
 - Revised manual with new harmonised methods
(31.12.2012)
 - Recommendation on design of sampling stations/sites (31.12.2012)



Next steps: the survey

...or the art of advertising another nasty questionnaire!

- ❖ Whom is addressed?
- ❖ How much time will it take?
- ❖ What is my reward?
- ❖ What is the questionnaire aiming at?

Lets look at the survey...

https://www.surveymonkey.com/s/Most_Wanted_EcoSys_Research_Parameters



Expected from beneficiaries

June 2012

- Comment on questionnaire (options for improvement)
- Fill the questionnaire according to their expertise
- Motivate / invite colleagues to do the same

July 2012

- Manual: completion of relevant (international) literature & methods
- Feedback from field season?



Last – but quite important...

Thanks to all of you who participated in

- organizing the process
- contributing to the tables

Looking forward to further efforts!

