SESSION 2b - Quelle évaluation ?

What kind of evaluation?

Introduction

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« Methodology » axis of the symposium:

Which methods to study cultural ecosystem services in urban green spaces?

Which results?

→ How to identify and assess ES? Basing on which criteria?

Ecosystem services and assessment/evaluation: an intrinsic approach – the historical links

- **MIT (1970)** : first evocation of environmental services / question of replacement cost (reversibility of environmental damages)

MIT (Massachusetts Institute of Technology), 1970, *Report of the Study of Critical Environmental Problems SCEP: Man's Impact on the Global Environment. **Assessment** and Recommendations for Action*

- **Global Biodiversity Assessment (GBA)** by UNEP (United Nations Environment Programme: PNUE - Programme des Nations unies pour l'environnement), following the Earth Summit

Publication in 1993-1995 :

- one section on economic value of the biodiversity
- one section by McNeely *et al.*: the idea of confronting the users the cost of their actions

Ecosystem services and assessment/evaluation: an intrinsic approach – the historical links

- **MEA** : Millenium Ecosystem Assessment (2005): popularization of ES concept

Implementation:
- in Europe : “Mapping and Assessment of Ecosystems and Their Services”

- in France: EFESE (Evaluation française des écosystèmes et des services écosystémiques: French Assessment of Ecosystem and their Services)

1. **The economic assessment and the monetarization of nature**
2. **The biological assessment**
3. **The social assessment**
4. **The implications**

1. The economic assessment and the monetarization of nature

Early use of the ES concept in economy

- **Beginnings:**

Odum brothers (ecologists), 1970's: 1st monetary evaluation of services offered by the sea / purpose: to raise decision makers' awareness

- **Payments for environmental services (PES - Paiements pour Services environnemantaux : PSE**)

Implementation in 1996 in the forest law of Costa Rica

- **Costanza *et al.*, 1997**, « The value of the world's ecosystem services and natural capital », *Nature*

- Important stage in the monetarization of ES

- Mathematic model for the economic evaluation of ecosystem on the world scale

- **TEEB (The Economics of Ecosystem and Biodiversity), 2008**: large international survey, at United Nations request

Purpose: Assessment of the economic costs and benefits of biodiversity, its use and its decline

Promoting the integration of the economic value of the biodiversity in the decision process

Reasons:
To favor
- informed decision,
- best management of natural resources,

To prove that
- investing in natural capital can be profitable
- sharing the benefits of these actions can offer real services to the people

- **MEA implementations**

MAES (Mapping and Assessment of Ecosystems and their Services) in Europe and EFESE in France

EFESE:
Economic evaluation of some ES
Improving the calculation of the ecological footprint;
Contribution to the development of a national environmental accounting

MAES: even if biodiversity is priceless, the pressures on biodiversity have a cost and its protection needs investment

Criticism against this economic assessment

A drift from a biocentric view point towards an anthropocentric one

« A nature for sale » (Maris, 2014, *Nature à vendre. Les limites des services écosystémiques*, Quae, Versailles, 96 p.)

Utilitarian perception of ecosystems

Monetarization and comodification (marchandisation) of ES considered excesses

An economic assessment: what purpose?
What kind of economic assessment in urban environment?
For CES ?
What criteria to estimate the economic value?
What reply facing with this criticism?

During this session:

Two last talks:

- On the services coming from the reconversion of urban waste lands - *Béatrice Plottu and Marjorie Tendero* :

an economic evaluation of CES to help the decision

- On an urban park of a medium city (Troyes) - *Nathalia Sirina, Anthony Hua and Julie Gobert*:

basing on the willingness to pay (WTP) : how users are ready to pay to benefit from the amenities of the park? (in link with social assessment)

Evaluation of services, not of nature?

The economic value like a distinction criteria like others? More easy because numerous

Advantages and limits explained by the speakers

2. The biological assessment

Adopting the point of view of ecosystems, by considering their functioning

Not monetary but **biological criteria** to evaluate ES (CES?)

During this session:

- Implementation in Strasbourg with a focus on trees, using « i-Tree Eco » model: based on biophysical indicators, it gave informations on the rate of storage and sequestration of carbon and the rate of removal of pollutants / American model adapted to the local context (taking into account climatic, athmospheric and dendrometric informations) - *Wissal Selmi*

Biogeographical approach: Evaluation based on the land use and the services associated to the land use categories (from model) :

- Implemention in Ile-de-France with a focus on the vegetation, testing different methods:
Burkhard et al. (2012) matrix, which evaluates ES from Corine Land cover
Cartographic models
Survey on vegetal communities - *Fabien Roussel*

- Implementation in Grenoble area: land use data are completed by data on physical and socio-economic data - *Clémence Vannier et al.*

Different scales of analyze: which one for which evaluation?

Which source to know the land use?

Which model? Especially are all the models applicable in urban environment?

Is it possible to generalize, like Costanza et al., 1997 on the world scale? What about CES?

Assessment of different ES:
The talk on Grenoble will also include social assessment : necessary especially for CES, on which the symposium focuses

1. The economic assessment
2. The biological assessment
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Possible links with the economic assessment: attributing an economic value as a further step

Example of EFESE (French implementation of the MEA): Economic assessment and biophysical and ecological assessment, with the identification of:
the state of ecosystems
the links between ecological functions and ecosystem services,
the degree of degradation of ecosystems and impacts on services

It proves the possibility **to associate different kinds of evaluations**, maybe needed if we think that ES is an interdisciplinary concept and the evaluation of ES needs a systemic approach.
The question is asked.

1.3. The social assessment

Necessary to know **CES**

CES: less studied because their assessment is more complex and the generalization is more difficult

Methods:

- surveys
- interviews

Who?

- Users, who can be inhabitants or tourists
- City-dwellers (users or not)
- Decision-makers, managers

During this session:

- Talk on Grésivaudan and Quatre Montagnes (Grenoble): study using different methods for different players

questionnaire on the field and online survey for local users and tourists
surveys for profesionals - *Céline Tritz*

Two others talks establish a link with the last mentionned talks, belonging to biologiocal assessment because they aim at drawing a map:

- Talk on Lyon (France) and Karlsruhe (Germany): adaptation of Burkhard *et al.* matrix to the city context, using also online questionnaire (purpose: participants evaluate the capacity of cities to provide ES) - *Monika Heyder and Lisa Eisenbarth*

- Talk on Lublin (Poland - "City friendly to life"), using an original method: 60 students have to associate their emotions to each landscape units of the city - *Malwina Michalik-Śnieżek et al.*

We can add the talks on:
- Grenoble, which also question CES (recreational activities)
- Troyes because the reasons of the willingness to pay are also studied (questionnaires include questions on recreational activities)

From social evaluation to interdisciplinary evaluation:

- links with the biological assessment: to consider others ES, which are linked

- links with economic evaluation: to consider the economic value as criteria of comparison

On the scale of the city or larger area?
Comparison of two cities: is the generalization possible?

What are the advantages and limits of each method?

Do study in urban environment need adaptation?

Do social assessment allow to know only CES?

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4. The implications

Criticism against the ES, because of assessment of ES (economic assessment or others)

Possibility to identify without evaluating ES: **what is the contributions of the evaluation?**

Example of SERVEUR project (the one which conducts us to this symposium – about ES offered by urban green spaces, funded by the French Region Centre-Val de Loire)

Focus on CES offered to people and municipalities
Interdisciplinary staff: mixing studies of soil and biodiversity, social surveys, socio-economic analyze, study of public politics, law and modelization

We gave up the idea of evaluating CES: **difficulties to find relevant and comparable indicators**
Which indicator? With what to compare the results? (for example for soils: with agricultural soils?
Evaluation is not systematic for researchers studying ES

In the framework of ES research, problems around the quantification are major
Numerous questions:

Which tools?
Which method?
Which model? Which indicator?
Which scale, which object: living pool, city, green spaces, one kind of vegetation like trees?
What purpose?
Which ES? Is it possible to focus only on CES? What about disservices?
What kind of assessment? Economic, biological, social or interdisciplinary?

Mixing the different evaluations, by an interdisciplinary approach: how to conduct this kind of study? Is it possible?

What about the evaluation of CES? How to drift from surveys and interviews to scale values? Is monetarization the only way, by the willingness to pay?
Is it possible to generalize the results? The question is especially asked for CES.
Are the models adaptable, especially in urban context? In different biological and cultural context?

How applying the different categories of evalutions in urban environement, in particular to CES?

One underlying question is : what is the purpose of the evaluation? For who? For decision-makers?

What to do when we obtain the result of the assessment?
Is it to help decision?

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In the call for papers, two main questions:

- For whom and why assessing the ecosystem services, which are provided by urban nature?

- Can the assessment of these services allow populations and municipalities to have a better perception the advantages/disadvantages of urban nature?

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