

SUMO

Using Sustainability Constraints to Shape and Manage Transportation Projects

STRC 2002

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Plan

Introduction

Project development and impediments: reverse steam!

2 correlated issues

- Implicit sustainability requirements
- Project acceptability uncertain

2 inter-related methods

- Sustainability assessment
- Iterative management through stochastic modelling

Corporate transport strategy: Expressing sustainability profiles for measures

Sustainable development and time

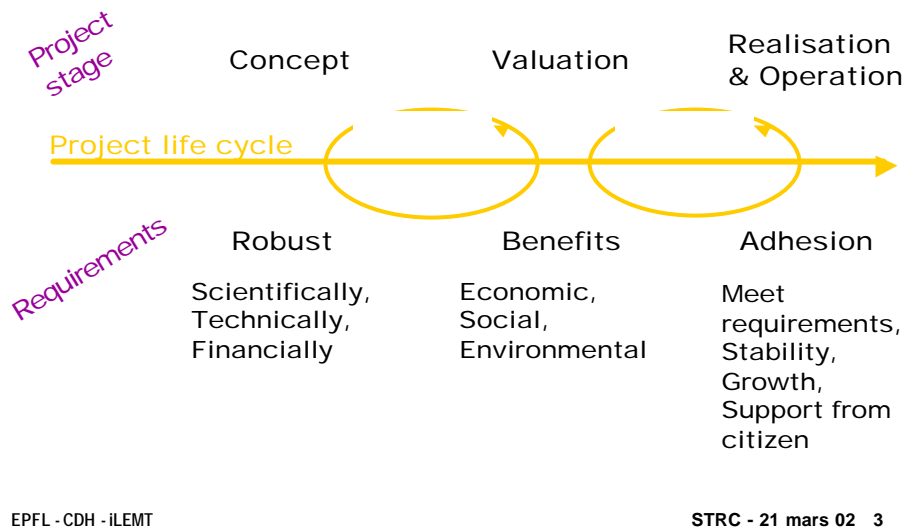
Acceptability issue: how much present generation is ready to accept (pay) for the welfare of future generations?

Need for progressive measures (kaizen/jump) + open/locked

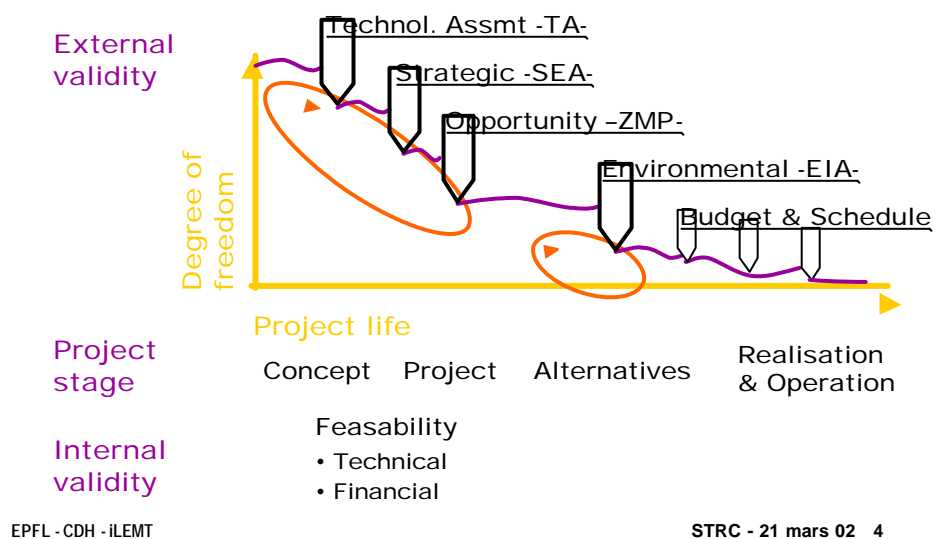
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Setting the Scene: 1) the way forward - dream



Setting the Scene: 2) Obstacles ahead - reality



Implicit requirements

2 correlated issues

- 1. Implicit sustainability requirements -> Objective**
Society has established barriers to projects that are likely to harm its development.
Stepwise process leading to sustainability requirement
- 2. Project acceptability -> Means**
Concertation process between project manager and users (non-users)

Explicitly tackling implicit requirements

In 2002

- there is no regulation for « Sustainability assessment » and
- concertation is widely open to project manager's goodwill.

To shape projects that meet the needs of present & future generations, we suggest 2 methods, to be coupled

- 1. Sustainability assessment -> sustainable design**
- 2. Iterative management -> foster acceptance**

-> Core of **SUMO** « **S**Uustainable **M**Obility »

1) Sustainable design to anticipate requirements

Objective

“ ...meeting the needs of the present without compromising the ability of future generations to meet their own needs. “

Bruntland Commission, 1987

Measure

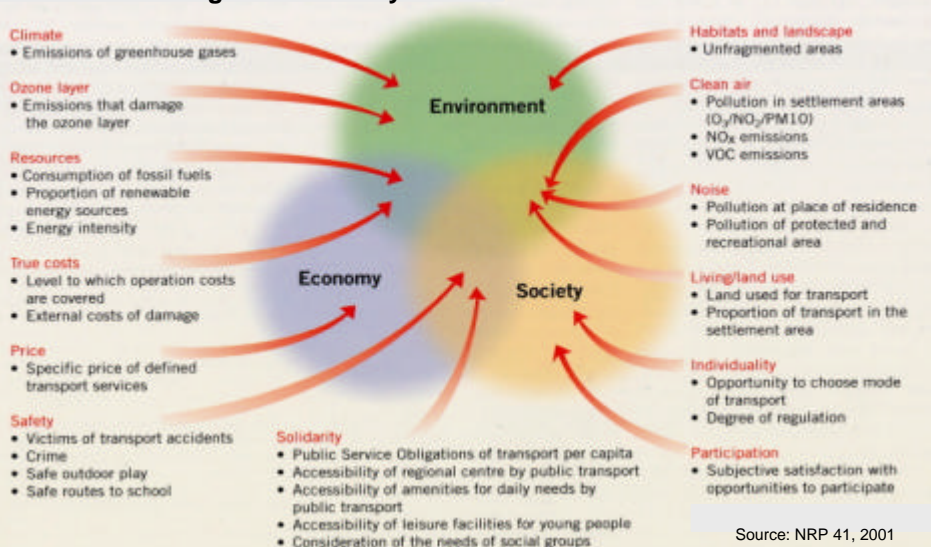
Indicators for Sustainable development

- UNO, 1997: 130 indicators (society), some still vague.
- OFS, 1999: 33 indicators (society)
- NRP 41, 2001: 22/28 indicators for transport. Most are measurable.

-> SNAPSHOT... « sustainability profile »

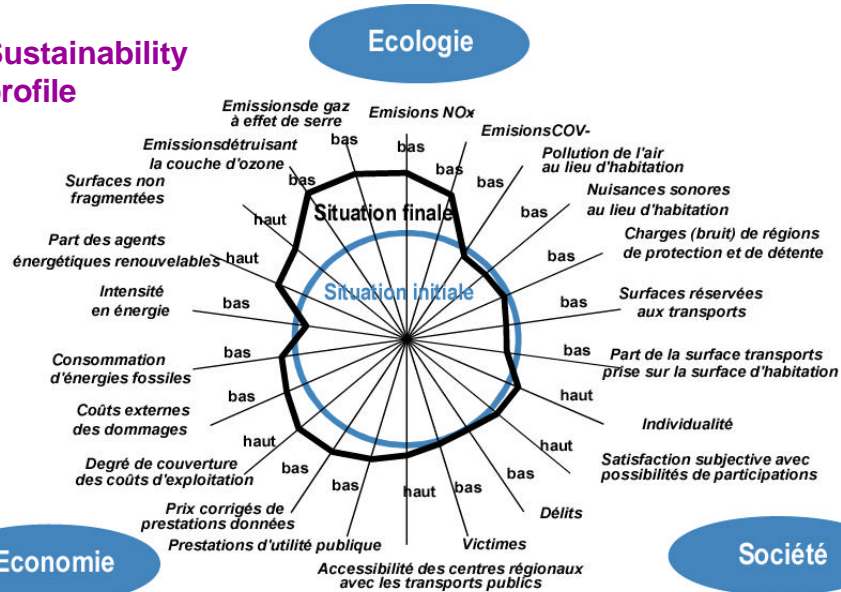
1) Sustainable design to anticipate requirements

Measuring sustainability



1) Sustainable design to anticipate requirements

Sustainability profile



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1-> 2) The way to sustainability: iterations required

Large-scale projects and transport strategies are based upon a series of elements, or measures.

The succession is at least as important as the objective, since all steps have to be accepted for the objective to be reached.

=> Not only sustainable objective, but **acceptable steps** forward.

=> **Concertation** = iterations & risk of reversion

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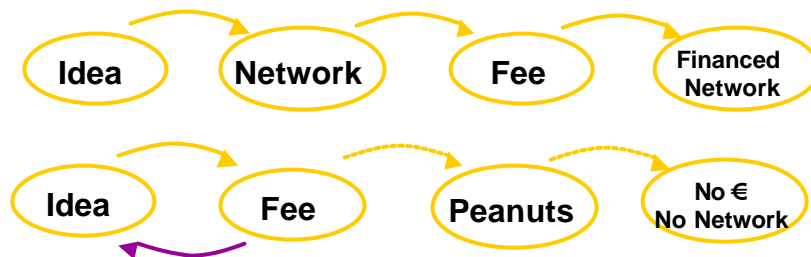
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2) Iteration to shape acceptable projects

What is the most likely way to build a highway network?

a) Start network, then start charging users

b) Ask money first, then use it for building the network

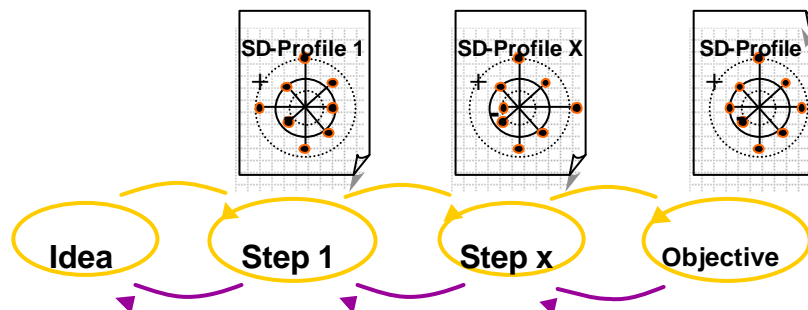


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2) Iteration to shape acceptable projects

- Each step is given a sustainability profile
- On this base + experience, actors & experts estimate the chance of proceeding or reverting



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Back to Earth: Air transport

Geneva International Airport (AIG)

Case study: AIG Employees (Sevestre, 2002 + ongoing reserach)

Starting point

80% employees rely upon private motoring

Target

2020 Strategy for Passengers & employees: 45% ecological access

Condition: more than 80% happy

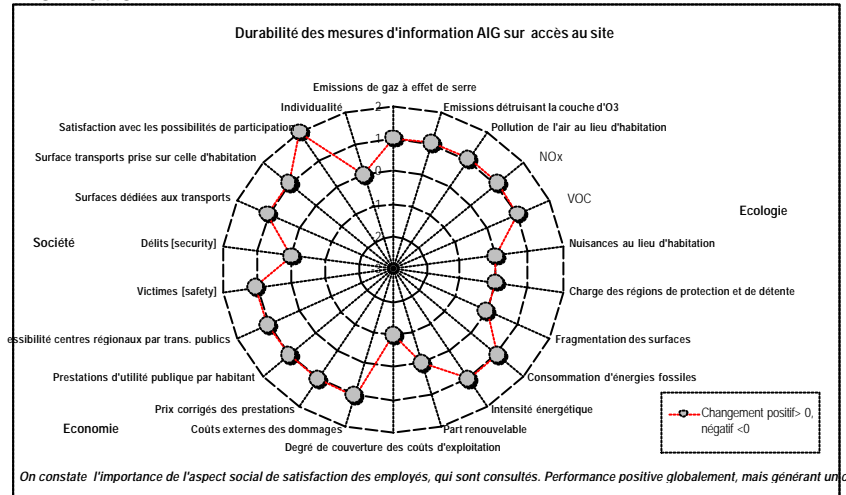
Access to AIG

4 Measures identified

- 1. Information**
- 2. Parking restrictions**
- 3. better transport supply**
- 4. PT/ ecological mobility subsidy**

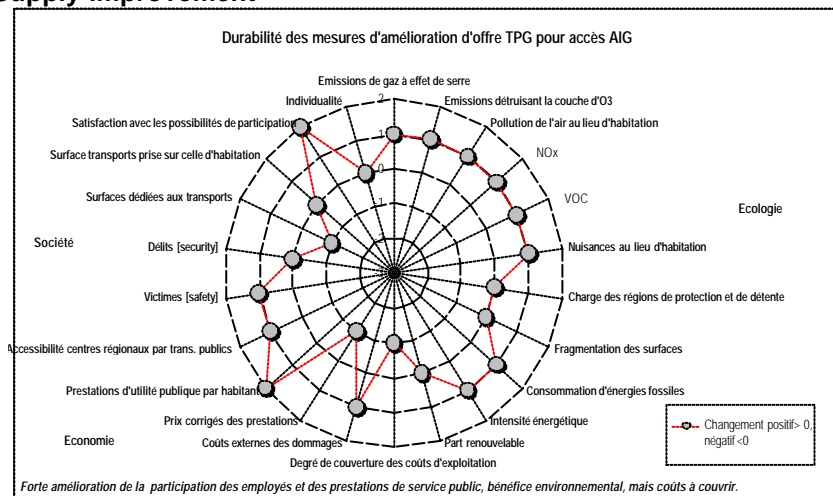
Access to AIG: Sustainability profiles

Information



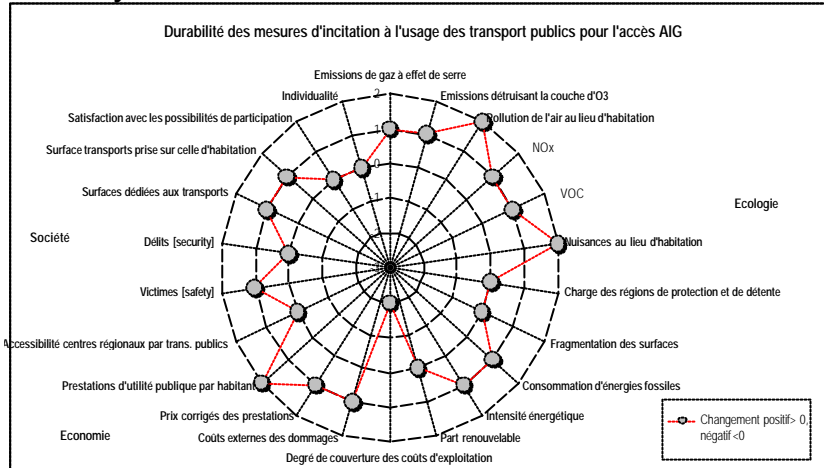
Access to AIG: Sustainability profiles

Supply improvement



Access to AIG: Sustainability profiles

PT Subsidy

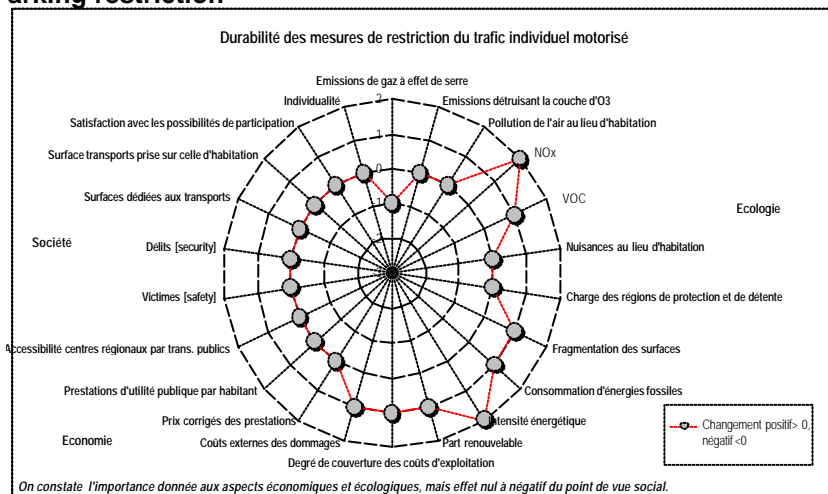


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Access to AIG: Sustainability profiles

Parking restriction



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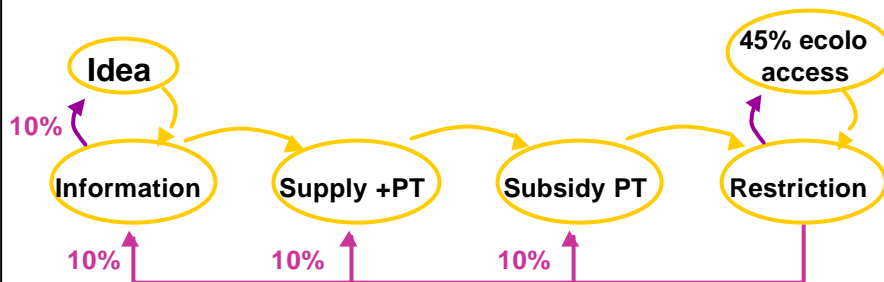
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Access to AIG: Acceptability

Measures succession

The succession most likely to be accepted is:

(No real figures: case under study)



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Access to AIG: Measures succession & effect

Measures Implementation & expected impact

1. Information -> + 5% eco T
2. better transport supply -> + 5% eco T
3. PT/ ecological mobility subsidy -> + 5% eco T
4. Parking restrictions -> + 10% eco T

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Access to AIG: Realization steps

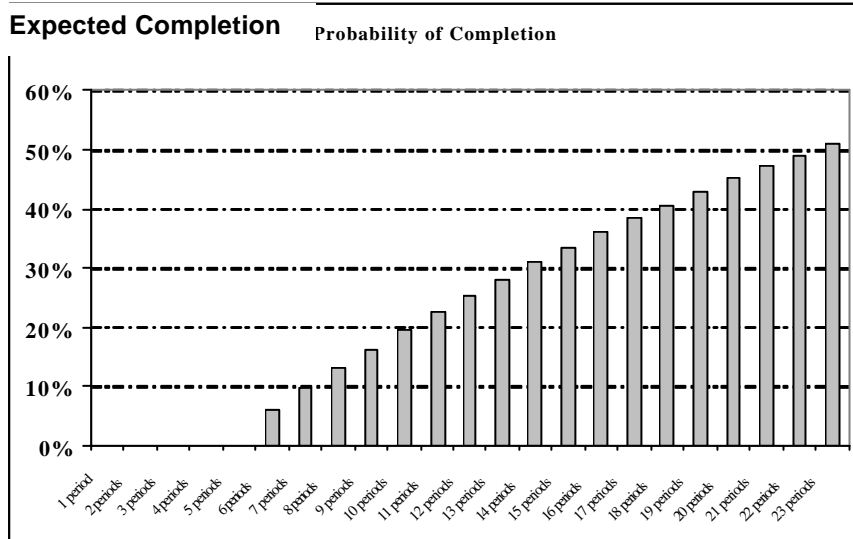
Stochastic formulation

Initialisation	to:	1	2	3	4	5	6
From:		Decision	Information	Supply + PT	Subsidy PT	Restrict P	Implemen
1	Decision	-	1.0	-	-	-	-
2	Information	-	0.1	0.9	-	-	-
3	Supply + PT	-	0.1	0.1	0.8	-	-
4	Subsidy PT	-	0.1	0.1	0.1	0.7	-
5	Restrict P	-	0.1	0.1	0.1	0.1	0.6
6	Implementation	-	-	-	-	-	1.0

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Access to AIG: Effect of realization steps



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Conclusions

Operational

Transport sustainability criteria are well accepted and understood in private companies

Complete

Wide range of indicators allows a full scanning of most likely impacts

Standard

Transport strategy easily matched with global Corporate environmental statement

Strategy shaping

Stochastic modelling helps finding the most appropriate (acceptability & efficiency) succession of measures

Expected difficulties

Probability of implementation indicates the likely time delay

+ more... after case completion.

1 Key Issue

Thank you for your attention