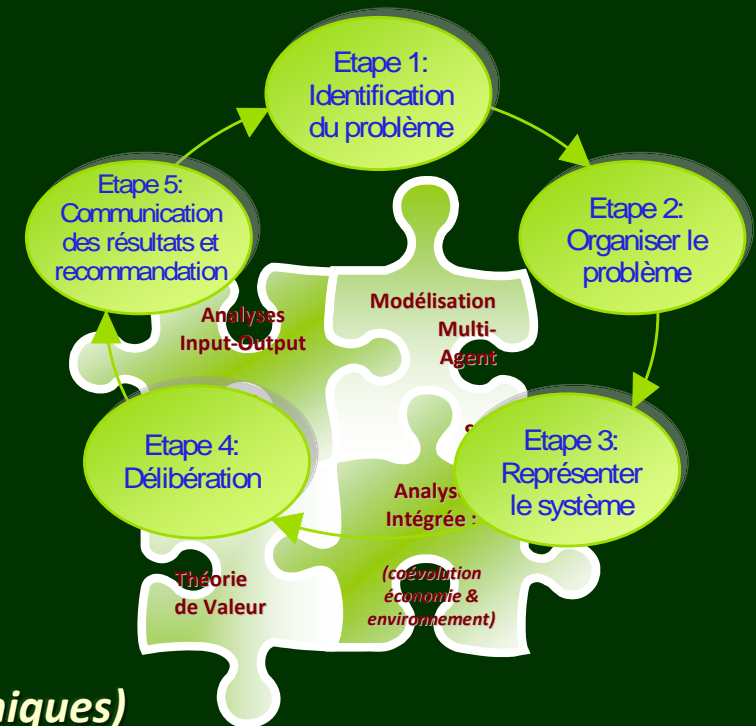


*International Centre for
Research in Ecological Economics, Eco-Innovation & Tool Development for Sustainability
Recherches en Economie Ecologique, Eco-Innovation & Ingénierie du Développement Soutenable*



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SUSTAINING WHAT, WHY, & FOR WHOM?

TOOLS FOR GRAPPLING WITH THE MULTIPLE BOTTOM LINES OF SELF-RESPECTING FUTURES"

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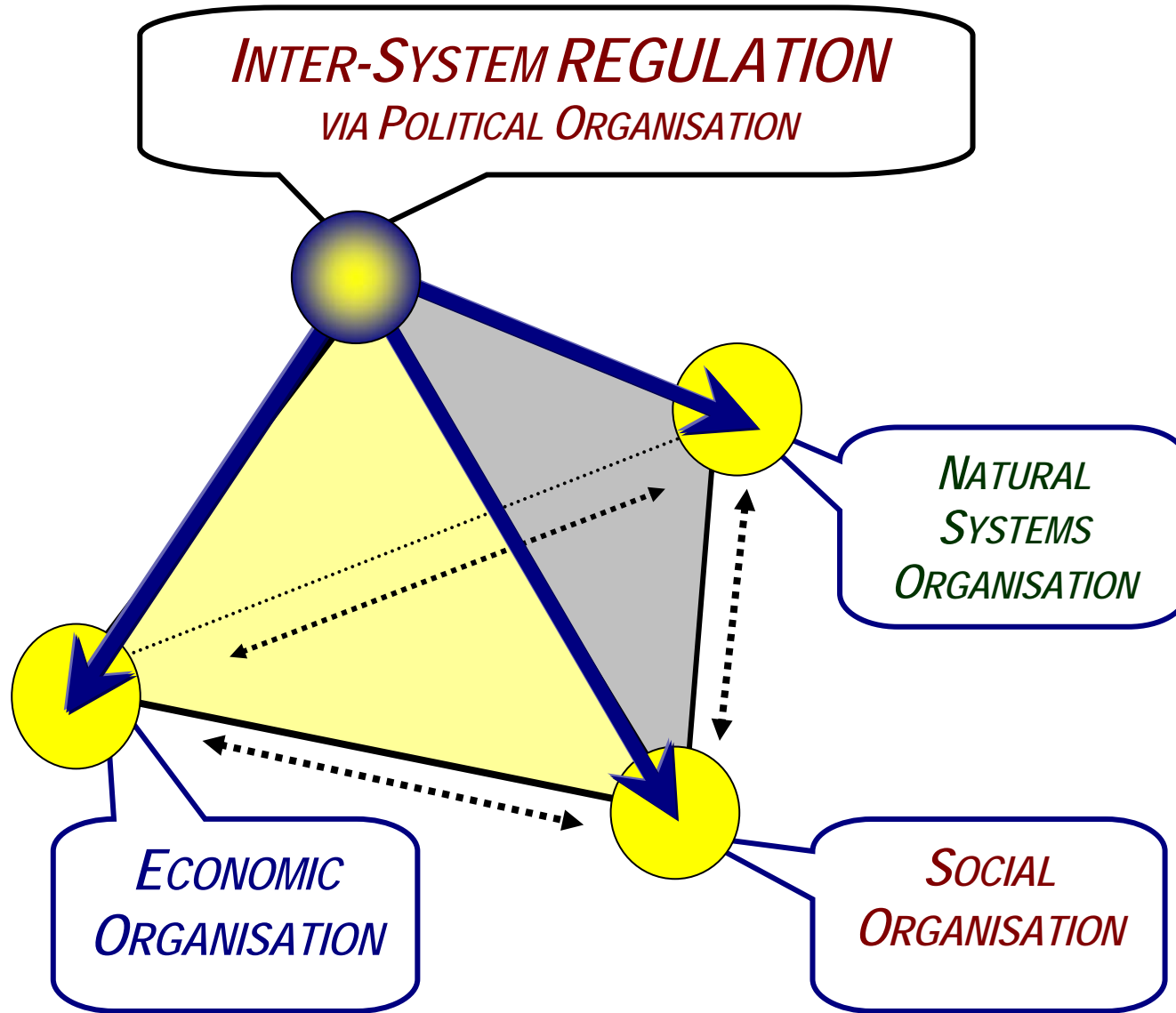
SUSTAINING WHAT, WHY, & FOR WHOM?

This talk will:

- ◆ Highlight sustainability at national, international and local scales, as a problem of coexistence, or the (impossible) reconciliation of multiple values.
- ◆ Revisit the New Zealand RMA to interpret it's intent as to provide the “stakeholders” in Aotearoa sustainability with a deliberative forum for articulating and governing within dilemmas of social choice.
- ◆ Present, with examples, some operational evaluation techniques to empower stakeholders in negotiation of 'common' futures that — through principled navigation within dilemmas — are respectful of multiple values and multiple bottom lines.

Part One

SUSTAINABILITY OF WHAT, WHY AND FOR WHOM ?



Achieving sustainability would mean a process of (*governed*) co-evolution respecting a “**TRIPLE BOTTOM LINE**”, that is, GOVERNANCE for *simultaneous respect for (or satisfaction of) quality/performance goals pertaining to each of the SOCIAL, ECONOMIC, BIOPHYSICAL “spheres” or dimensions of being.*

- ❑ **The corners of the “tetrahedron” evoke the four organisational forms.**
- ❑ **The edges signal dimensions of system inter-dependence, which can be characterised through investigation of the “claims” or “demands” made by each sphere relative to the others.**

GOVERNANCE FOR SUSTAINABILITY must identify QUALITY-PERFORMANCE CHALLENGES for each of the four spheres and thus, also, the quality concepts and criteria arising as “interferences” of two (or more) organisational forms.

A study carried out in 2002-2004 by the C3ED for the European Aluminium Association developed a consensus on a set of corporate social responsibility (CSR) indicator categories, with explicit reference to the “four dimensions of sustainability”.

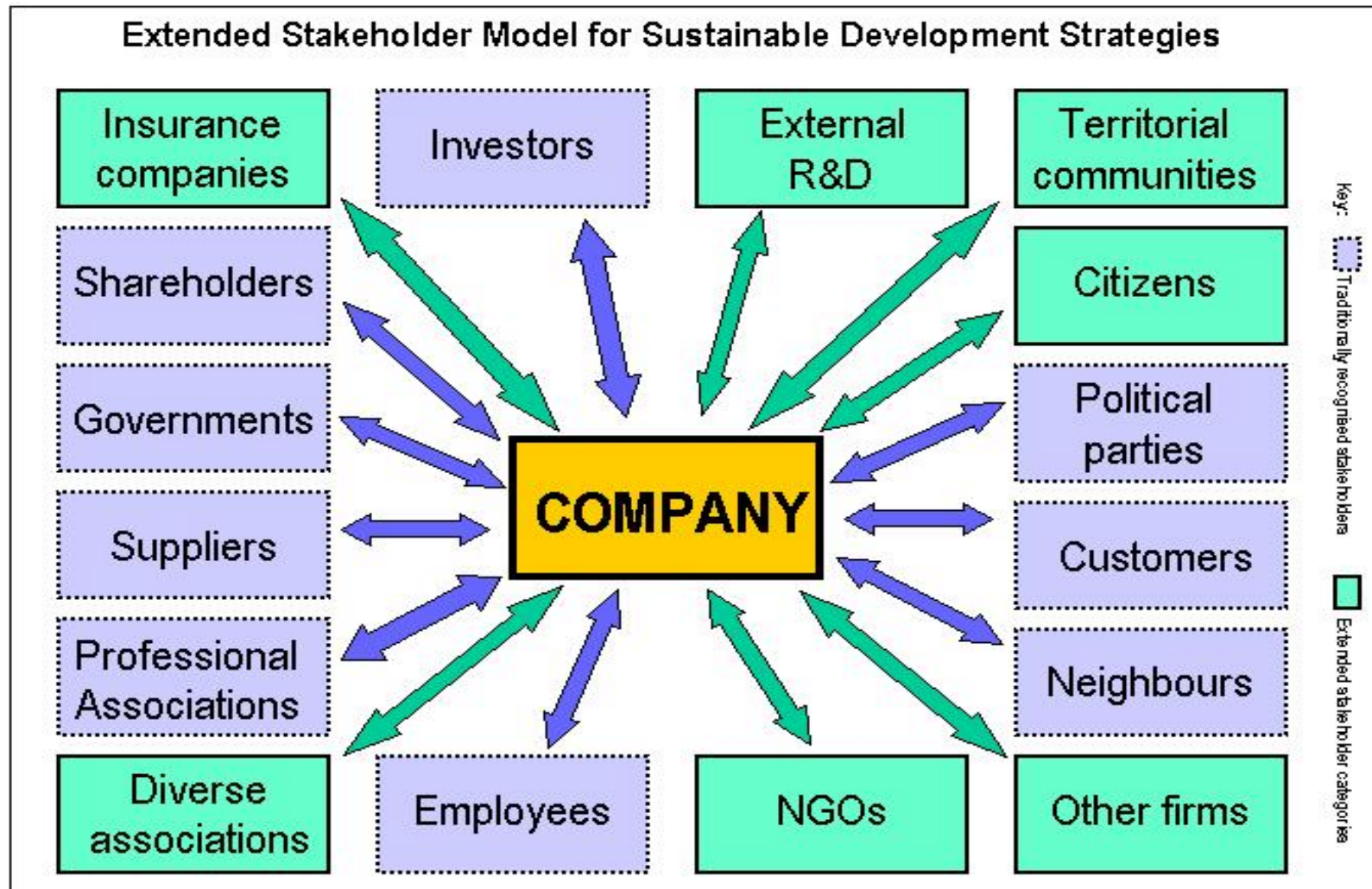
ECONOMIC	SOCIAL	ENVIRONMENTAL	INSTITUTIONAL
Competitiveness	Working Conditions / Health and Safety	Resource Use (National/European)	Environmental Management system
Pay & Benefits	Employee Opportunities and Relations	Resource Use – Global (Internat. exchange)	Company CSR Strategy/Policy
Revenues and Payments	Internal Communications	Emissions and Impacts	Supply Chain Relationships
Production (physical)	Community Relationships	Product Use (Life Cycle)	

**The CSR Standard Indicator Categories
(C3ED for the European Aluminium Association, 2004)**

Aluminium for Future Generations



Who are the Stakeholders in RSE ???



Classification Structure of Governance Issues for Biodiversity (European ALARM Project / Maxim & O'Connor, 2004)

	SOCIAL	ECONOMIC	POLITICAL / INSTITUTIONAL	ENVIRONMENTAL
SOCIAL	<i>Viability of different forms of Community & Local Identity</i>			
ECONOMIC	Social Cohesion: e.g., Employment Opportunities & Conditions; Social Equity	<i>Economic Performance: Growth, Production Costs & Competitiveness, etc.</i>		
POLITICAL / INSTITUTIONAL	Status of (People and) Nature in Law, Myth & other Discourses	Economic Governance e.g., Shaping of Europe & International Relations	<i>Power Structures & Political Models (Decision Processes)</i>	
ENVIRONMENTAL	Perceived Quality of Landscape / Nature	Supply, Site & Sink Functions, e.g., Pollinators; Water, Waste emissions	Environmental Governance (Institutional Coherence)	<i>Maintenance of Biological Richness (Robustness & Diversity)</i>

Who are the Stakeholders in Bio-diversity Loss?

Who are the Stakeholders in policies for the Maintenance of Bio-diversity??

How should be justify, motivate, finance and implement the “stewardship” of biodiversity as a wealth-in-common at every scale???

RADIOACTIVITY STEWARDSHIP ETHICAL BOTTOM LINES

- **PR.1** Have the responsibilities of existing parties been appropriately assigned?
- **PR.2** Have responsibilities 'towards other parties' in the short term been adequately addressed?
- **PR.3** Have responsibilities 'towards other parties' in the longer term been adequately addressed?
- **PR.4** Has available technical knowhow and systems science been mobilised?
- **PR.5** Is the solution economically viable?
- **PR.6** Does the solution enhance the prestige of the host communities and other stakeholder groups closely associated with the residual/waste site?

Sources: The initial 'Ethical Bottom Lines' checklist concept was developed in O'Connor (2003); the full 'checklist' was presented in a conference by Chamaret & O'Connor (2005).

RADIOACTIVITY STEWARDSHIP ETHICAL BOTTOM LINES

- **PR.1 Have the responsibilities of existing parties been appropriately assigned? For example:**
 - ◆ Application of a principle of national autonomy/responsibility ('take care of your own wastes' at national scale);
 - ◆ Application of the principle that 'the polluter pays';
 - ◆ Clear expression of, and respect for, local, national and international regulatory conditions.
- **PR.2 Have responsibilities 'towards other parties' in the short term been adequately addressed? For example:**
 - ◆ Health security to workers and the public on or close to the site;
 - ◆ Security against attack in the face of external or internal sources of aggression.
- **PR.3 Have responsibilities 'towards other parties' in the longer term been adequately addressed? For example:**
 - ◆ A 'sustainability' principle of inter-generational responsibility (don't pass on problems to others that you cannot cope with yourself);
 - ◆ A thorough characterisation of risks/uncertainties/future contingencies (with reference to: the dangerous substances, the engineering works, the living environment, and future societal evolutions);
 - ◆ An application of some version of the principle of precaution;
 - ◆ Is there likely long term stability of the necessary knowledge base (e.g., transmission of records, specialised know-how, local knowledge) for competent stewardship?
- **PR.4 Has available technical knowhow and systems science been mobilised? For example:**
 - ◆ Rigorous profiling (in technical, medical and sociological terms) of the exposure risks;
 - ◆ Standards of best practice (technical reliability, simplicity...);
 - ◆ Monitoring procedures attentive to the full spectrum of identified risks/uncertainties/future contingencies.
- **PR.5 Is the solution economically viable? For example:**
 - ◆ Are the immediate costs of stewardship affordable with the available resources?
 - ◆ Clear picture of the trade-offs and relationship between clean-up and stewardship
 - ◆ Are the solutions cost-effective for the identified risk reduction results?
 - ◆ Are there major financial costs shifted into the future?
 - ◆ Reasonable prospects of mobilising resources for the forecast stewardship costs in the longer term?
- **PR.6 Does the solution enhance the prestige of the host communities and other stakeholder groups closely associated with the residual/waste site?**
 - ◆ Viable partnership between local and national stakeholders (e.g., agreed distribution of responsibilities; legal mandate for stewardship activity; agreement on bases for financing of different cost components, etc.)
 - ◆ Site specificities clearly in evidence?
 - ◆ Local competencies clearly in evidence?
 - ◆ Well defined framework for ongoing involvement of stakeholders in stewardship oversight and review;
 - ◆ Links to educational and training activities at local and wider scales.

ZOOM — RADIOACTIVITY STEWARDSHIP ETHICAL BOTTOM LINES

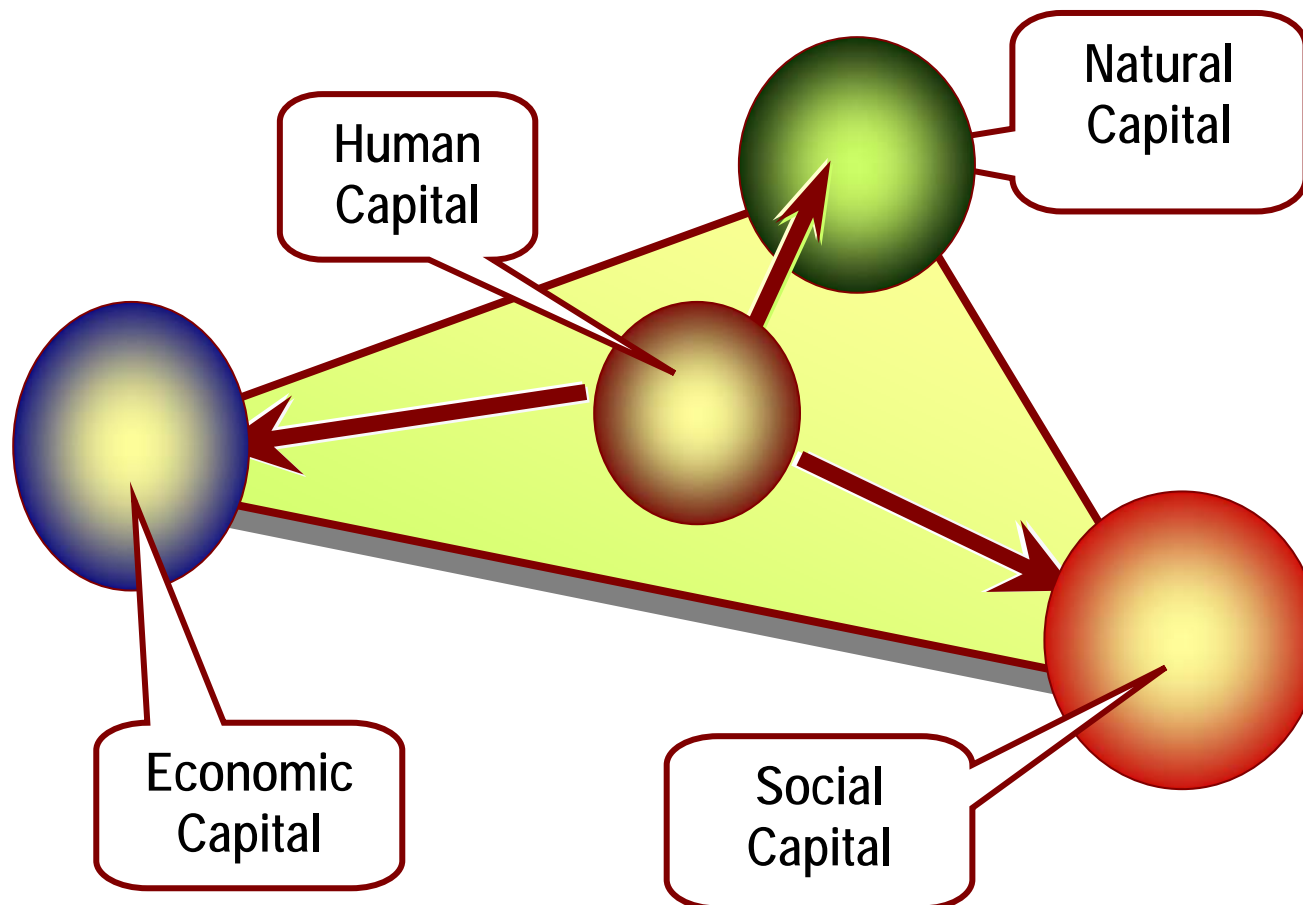
- **PR.3 Have responsibilities ‘towards other parties’ in the longer term been adequately addressed?**

- ◆ **A ‘sustainability’ principle of inter-generational responsibility (don’t pass on problems to others that you cannot cope with yourself)?**
- ◆ **Characterisation of risks/uncertainties/future contingencies (with reference to: the dangerous substances, the engineering works, the living environment, and future societal evolutions)?**

- **PR.4 Has available technical knowhow and systems science been mobilised?**

- ◆ **Has there been rigorous profiling (in technical, medical and sociological terms) of the exposure to risks?**
- ◆ **Have monitoring procedures been put in place attentive to the full spectrum of risks/uncertainties/future contingencies?**

The 4 Capitals Model

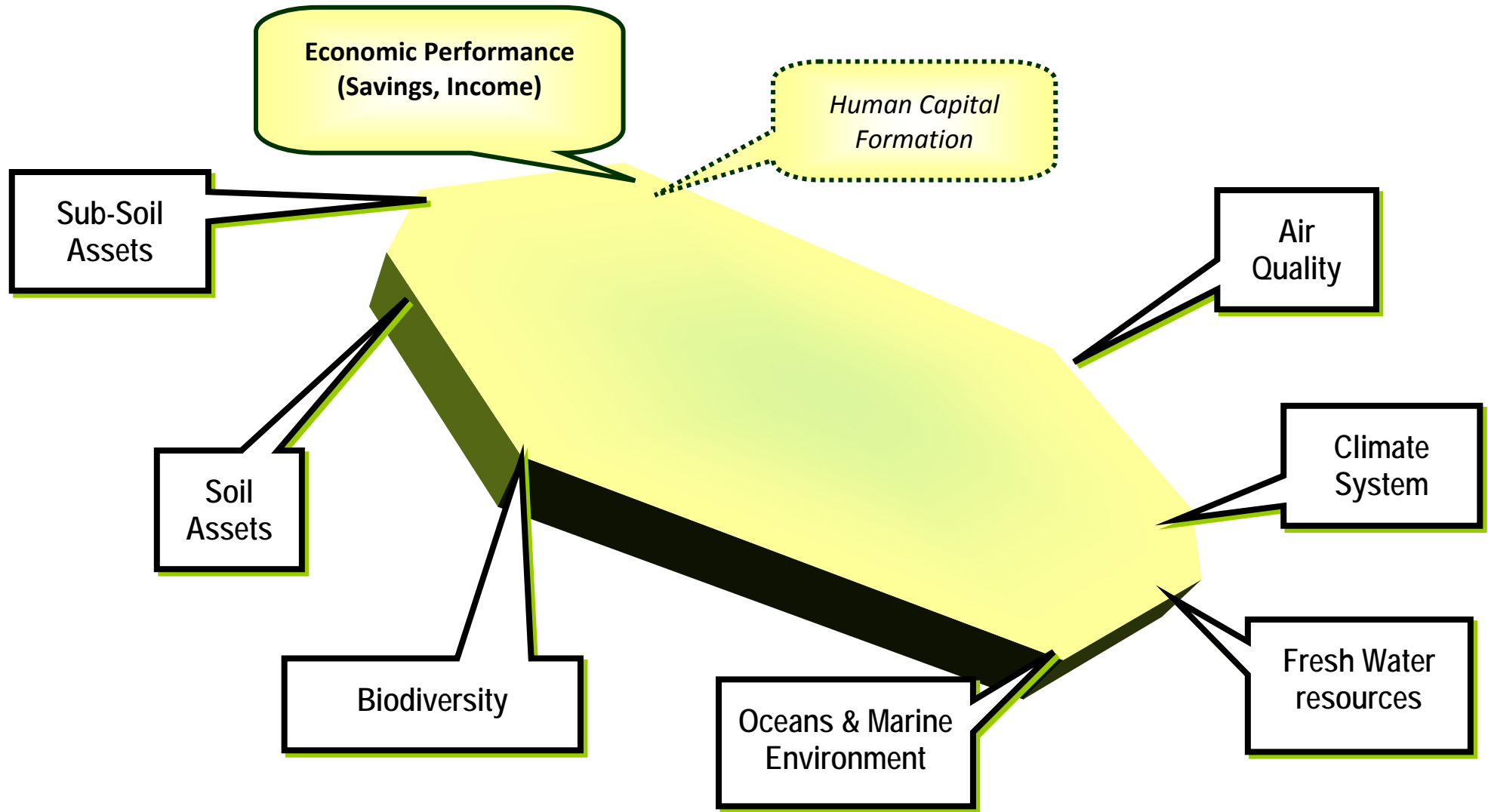


THE FOUR FACES OF HUMAN CAPITAL

The human organism is:

- (1) a biological entity (relating to the natural or biophysical sphere),
- (2) a factor of production (relating to the economic sphere),
- (3) a member of diverse communities (relating to the social sphere),
- (4) a political actor and citizen (relating to the political sphere).

Zoom on 'Natural Capital' (*sectors of the environment*)



J.S. Mill, on Environmental Governance

(writing in *Principles of Political Economy*, 1948/1871, p.797)

"It may be imagined, perhaps, that the law has only to declare and protect the right of every one to what he has himself produced, or acquired by the voluntary consent, fairly obtained, of those who produced it. But is there nothing recognized as property except what has been produced?"

Is there not the earth itself, its forests and waters, and all other natural riches, above and below the surface? These are the inheritance of the human race, and there must be regulations for the common enjoyment of it. What rights, and under what conditions, a person shall be allowed to exercise over any portion of this common inheritance cannot be left undecided.

No function of government is less optional than the regulation of these things, or more completely involved in the idea of civilized society."

Principles of Performance and Respect in the New Zealand RMA 1991

The Resource Management Act: An Act to restate and reform the law relating to the use of land, air, and water, 1991 No.69, 22 July 1991. Wellington, New Zealand House of Representatives.

Extracts from “Part 2: Purpose and principles”

§5. PURPOSE

§6. MATTERS OF NATIONAL IMPORTANCE

§7. OTHER MATTERS

§8. TREATY OF WAITANGI

The items contained within [...] are amendments subsequent to the original Act in 1991.

§5 PURPOSE

- (1) The purpose of this Act is to promote the sustainable management of natural and physical resources.**
- (2) In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while—**
 - (a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and**
 - (b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and**
 - (c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.**

§6 MATTERS OF NATIONAL IMPORTANCE

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:

- (a) The preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:**
- (b) The protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:**
- (c) The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:**
- (d) The maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:**
- (e) The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga.**
- [(f) the protection of historic heritage from inappropriate subdivision, use, and development.] — *added 2003***
- [(g) the protection of recognised customary activities.] — *added 2004***

§7 OTHER MATTERS

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to—

(a) Kaitiakitanga:

[(aa) The ethic of stewardship:]

(b) The efficient use and development of natural and physical resources:

[(ba) The efficiency of the end use of energy] — added 2004

(c) The maintenance and enhancement of amenity values:

(d) Intrinsic values of ecosystems:

(e) Repealed [supplanted in 2003 by §6 (f), and later also §6 (g) at a higher status].

(f) Maintenance and enhancement of the quality of the environment:

(g) Any finite characteristics of natural and physical resources:

(h) The protection of the habitat of trout and salmon:

[(i) the effects of climate change:] — added 2004

[(j) the benefits to be derived from the use and development of renewable energy.] — added 2004

§8 TREATY OF WAITANGI

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

SUSTAINING WHAT, WHY AND FOR WHOM?

§5. PURPOSE (*SUSTAINING, SAFEGUARDING, REMEDYING...*)

§6. MATTERS OF NATIONAL IMPORTANCE (*RECOGNISE & PROVIDE FOR...*)

§7. OTHER MATTERS (*HAVE PARTICULAR REGARD TO...*)

§8. TREATY OF WAITANGI (*TAKE INTO ACCOUNT...*)

J.S. Mill — “...No function of government is less optional than the regulation of these things, or more completely involved in the idea of civilized society.”

Sustainability is the challenge of seeking the coexistence of multiple values & forms of community that are far from naturally reconciled :

- ◆ Present-day comforts and future generations' opportunities?
- ◆ Indigenous biodiversity, cultural diversity, market competitiveness and election majority?

In a perspective of complexity, dilemmas of scarcity, diversity & hopes for coexistence, it is the process of multi-stakeholder deliberation:

- ◆ Facing up to the dilemmas of action;
- ◆ weighing up insights from different sources of knowledge,
.... that furnishes the basis for good societal decisions.

LINES OF FRACTURE: — CONFRONTATION AND CONCILIATION —

- Between 'growth' and the 'protection of the environment'
 - Between 'us' and the 'other' (e.g., NIMBY)
- Between present and future generations (Brundtland's sustainability)
 - Between self-interest and interest in the lives of others
(problems of altruism, duty, responsibility)
- Between the human and the non-human world (and "intrinsic value")
 - Between 'our' culture and other cultures
(racial, ethnic, religious intolerances & incomprehension)
- Between what is 'internalised' in the marketplace and the 'externalities'
 - Between any given region or territory and its "Rest of the world"

Etc., etc., etc.

SUSTAINABILITY

IS THE PREOCCUPATION

— SCIENTIFIC, ECONOMIC, MORAL & POLITICAL —

FOR RECONCILIATION & COEXISTENCE
OF INTERESTS AND FORMS OF LIFE

THAT ARE

IN CONFLICT WITH EACH OTHER

AND AT RISK

(1) THE CHALLENGES FOR SA / IEA

- ❑ Scientific knowledge (including social & economic sciences) advising of irreducible uncertainties and/or irreversibilities associated with courses of action;
- ❑ Plurality of value systems, political and moral convictions, and justification criteria within society;
 - ❑ High decision stakes including economic interests and strategic security concerns for nations or entire communities (e.g., long-term high levels of unemployment and poverty), and also consequences of environmental change for public health, organism integrity and future economic possibilities.

(cf. Funtowicz & Ravetz "POST NORMAL SCIENCE")

(2) SUSTAINABILITY POLICY & DIALOGUE

"... the policy process will enter the realm of the hermeneutic where there is no prior agreement on the key questions, appropriate framework or essential facts. With an expansion of worldviews and a broader conception of knowledge, we will find little consensus on questions, methodologies and data for determining optima. Good policymakers will be those who can lead enlightening conversations between scientists with different disciplinary backgrounds and between people of different cultures and knowledges."

– Richard Norgaard (1988), "Sustainable Development: A Co-evolutionary View", in Futures, 20, pp.606-620.



(3) DOMINATION OR RECIPROCITY ???

"... It is by no means sure that each party can play the game of reciprocity, that is, concretely renounce his/her 'barbarism' so as to obtain from the Other that s/he renounce his/her own, permitting the two to find pleasure and profit in their reciprocal exchanges..."

Yet, as there is no hope of founding anything durable on the short-change of a pseudo-universality imposed by violence and perpetuated by the negation of the other party, the venture is warranted that there is indeed a common space of fraternal coexistence yet to discover and construct."

*— Serge Latouche
The Westernisation of the World
(1989, p.139)*

Part Two

HOW TO DO IT?

SCIENCE-BASED SUSTAINABILITY POLICY ?

Decision Support for Sustainability
is not only the acquisition, scientific validation and
organisation of information...,

...but also – and above all –

... it is procedures for orienting and organising the effective
exploitation of this knowledge/information by the
“stakeholders” in sustainability:

- Collective Intelligence / Collaborative Learning
 - Knowledge Partnerships for Sustainability
 - Stewardship (maintaining wealth-in-common)



The key task for socio-economic research
in integrated (& participatory)
environmental resources management is not
the modelling of socio-ecol-economic systems,
it is the MOBILISATION of
HUMAN AGENCY in relation to
sustainability's challenges and purposes:

Coexistence, Stewardship, Wealth-in-common

FROM INFORMATION TO “ DELIBERATION ”

The mobilisation of knowledge, of human agency,
and of collective capacity requires DELIBERATION

Deliberation about sustainability challenges
and policy options and purposes
must be structured...,

... and this presumes ACTION-RESEARCH with

TOOLS, METHODS & PROCESS DESIGN

DST = "Deliberation Support Tools"

TIDDD = Tools for Informing Discussions, Debates & Deliberation

TIDDDs or DSTs may combine multi-scale spatial representations, scenario simulation, indicators, multiple criteria evaluation and a variety of navigation opportunities within interactive user-friendly computer interfaces.

- The "GOUVERNe" project (2000–2003) demonstrated feasibility of new ICT for user-friendly interactive stakeholder-based decision support with reference to river and aquifer water resources;
- The VIRTUALIS Project (2001-2004) demonstrated multi-function interactive "virtual realities" with the objective of "Social learning on enVIRonmental issues with inT_eractive information and commUnicAtion technoL_ogLeS";

Several subsequent EC projects have carried forward these prototypes and design concepts for Sustainability Assessment (e.g., SRDTOOLS) and Integrated Environmental Analysis, e.g., ALARM (biodiversity), SPICOSA (ICZM).

PROGRESSIVE DISCOVERY & COLLECTIVE COMPETENCE

WITH THE ON-LINE DELIBERATION SUPPORT TOOLS

- ❑ The kerDST Deliberation Matrix and the Indicator Kiosk (KIK) are features of the suite of on-line documentation, evaluation and communication interfaces designed & developed by the KerBabel™ group of the IACA team at the C3ED, France.
- ❑ Design of the DSTs is based on the principle of offering, to on-line users, a variety of “LEARNING PATHWAYS” that allow a “progressive discovery of information”.
- ❑ The idea is to start with information and ‘tasks’ that are very accessible (from “*where the user is*”), and then progressively offer opportunities for the users’ interactions to become “deeper”, for the types of knowledge and interpretation challenges to become more complex, for collective insights & outcomes to emerge.

La délibération est ouverte

Deliberation Matrix (DM)

Matrice : Séance plénière du 12 septembre - IMPORTANT Débutée le 09/09/2002

Catégorie d'acteur

ID_Indicateur	Signification	Poids	Definition
▶ Consommation d'eau	Bon	50	La consommation d'eau par pe R
Nombre de captages industriels	Mauvais	10	Au sens restreint, un captage c R
Débit des captages AEP	Indifférent	20	Volume d'eau qui traverse une R
Nombre de captages irrigants	Indifférent	20	
*			

Enr: 14 sur 4

Total Poids : 40

Scénario : Enjeu :

Scénarios

40	2000	100	1	1	0
100	100	1	1	1	0
1	1	1	1	1	0
20	100	1	1	1	0
1000	1000	1000	1000	1000	1000

Enjeux Global

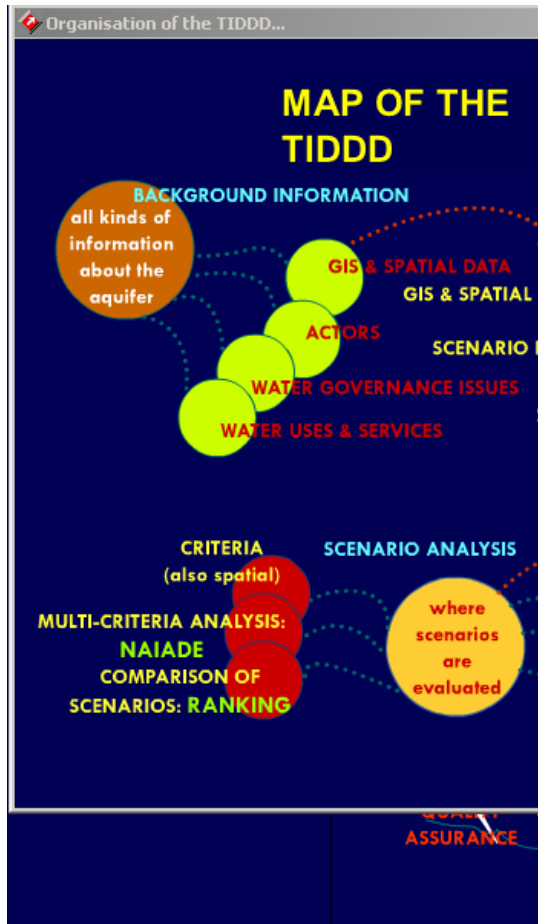
Catégories d'acteurs

40	100	1	1000	1000	0
100	100	-100	1000	1000	0
1	100	1000	1000	1000	0
20	100	1	1000	1000	0
20	100	1	1000	1000	0

Enjeux Glob.

Actualise les Matrices

Retour Accueil



Key Principles for “Mediation” Tool & Method Design

Attention to Context as well as Content...

- ◆ “Learning from where the Learner Is”
(multiple pathways of discovery)
- ◆ Formulating Problems of Action
(situations of meaningful “social choice”)

A generic design principle enunciated right from the beginning of VIRTUALIS is the principle of 'PROGRESSIVE DISCOVERY'.

In each of the prototypes, users are offered, on screen, navigation "pathways" that start from concepts and images that are the very accessible or 'intuitive', and then move on (through clicks of the mouse, choices in a menu, etc.) towards forms of information, representation and analysis that are less readily accessible.

THE VIRTUALIS PERSONAL BAROMETERS

VGAS offers a cognitive bridge between knowledge and action domains of everyday life (home, travel, recreation, and so on) and climate change at a planetary scale. It allows individual citizens to gauge their 'contribution' to greenhouse gas emissions and also to gauge their possibilities for contributing to reduction of these emissions.

The FISHUALIS system offers bridges between individual consumption actions (buying and eating fish) and scientific analyses of the exploitation of fisheries at national and international scales.

A "Water Shadow" calculator within VWATER allows users to estimate the volume of water used annually in an individual lifestyle, and relating this to the number of m² (or km²) needed to "capture" this amount of water through rainfall at the prevailing precipitation levels for the region.

The "Phyt'Amibe" in VIVIANE allows a user to adopt the role of a farmer and to construct a multi-criteria profile of his or her activity centred on the use of chemical inputs (fertilisers and pesticides) posing pollution risks for health and the environment.

The KerALARM Virtual Garden — Visit by Category of Ecosystem

Wetlands

- VIRTUAL GARDEN OF BIODIVERSITY
- INLAND WATERS
- WETLANDS
- FORESTS
- GRASSLANDS
- AGROECOSYSTEMS
- MOUNTAINS
- POLAR
- URBAN

Invertebrates' role

Source of

Water purification

Flood and storm p

Invertebrates' role

'Invertebrates can be seen as the glue which holds the biosphere together' . (35, ch.9)

The majority of Europe's reptiles and amphibians are dependent upon ***invertebrates*** for food, and 90 percent of Europe's fish and bird species and many mammals rely on invertebrates for their food supply. One of the more

POLLUTED H₂O

CLEAN H₂O

MICROORGANISMS

CLICK HERE TO SEE AN ANIMATION SHOWING AN EFFECT OF CLIMATE CHANGE ON WETLANDS

ALARM PRESSURES

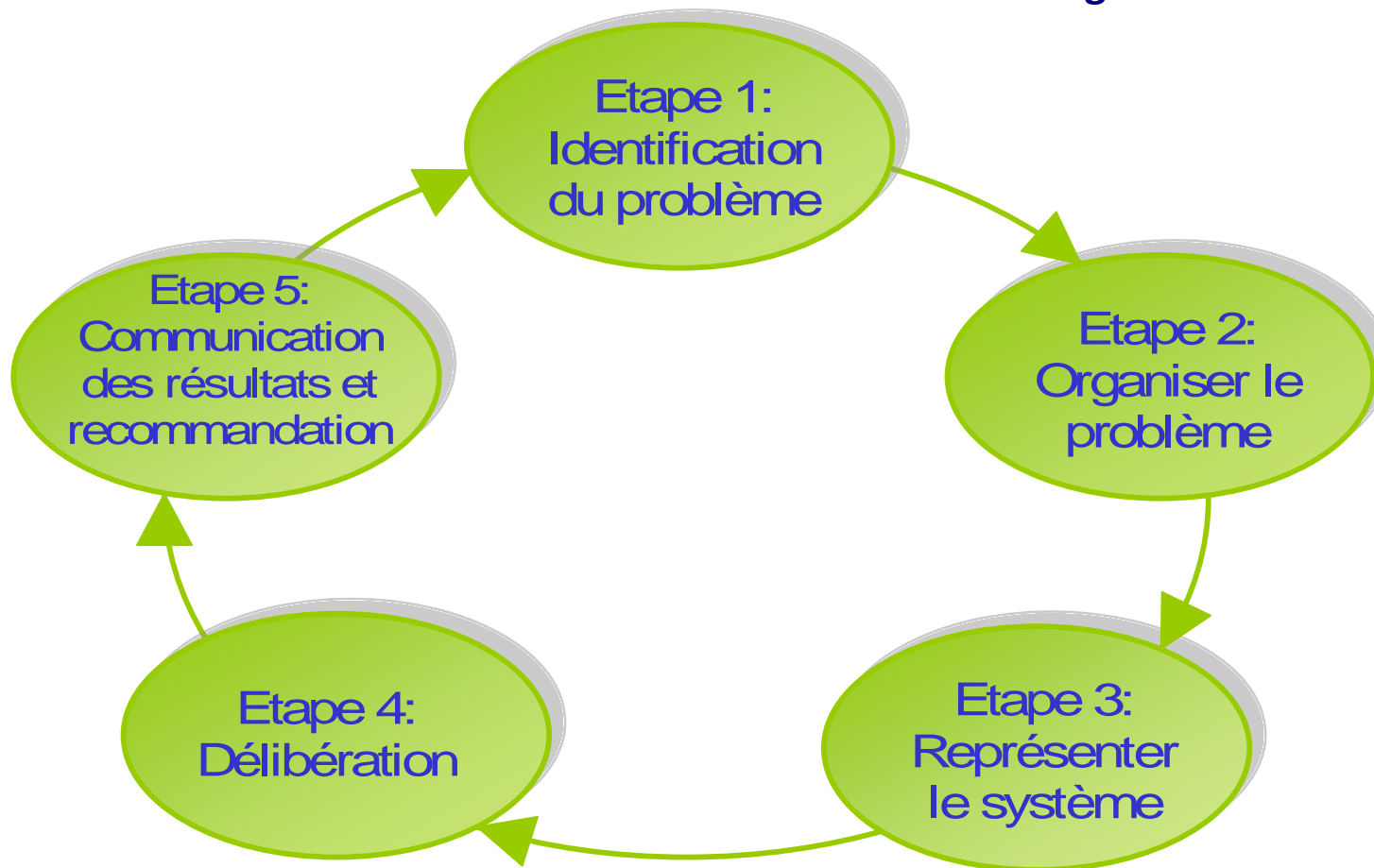
PANORAMA... MOVE MOUSE TO SCROLL THE IMAGE

STEPS OF AN INTEGRATED SUSTAINABILITY ANALYSIS

- ❑ **STEP ONE — Identify « OUR COMMON PROBLEM »**
(on what terrain(s), at what scale(s), for whom, with whom ?)
- ❑ **STEP TWO — ORGANISE THE PROBLÈM**
(in terms of ACTORS, OPTIONS and ISSUES (the SQPMBLs))
- ❑ **STEP THREE — Identify and Mobilise TOOLS for REPRÉSENTATION**
(e.g., maps, models of processes and systems)
- ❑ **STEP FOUR — Mobilise Actors for TASKS of DÉLIBÉRATION ABOUT ACTIONS to undertake... Multi-Actor Multi-Criteria Evaluation**
Mobilise « indicators » to describe & assess the situation and scenarios of action; Construct a « deliberative forum » facilitating collective learning & action; Decide Communication Challenges and Reporting Strategies (on what, why, by whom, for whom?)
- ❑ **STEP FIVE — Actions of PREPARATION, DISCUSSION/VALIDATION & COMMUNICATION of RESULTS & RECOMMENDATIONS**
- ❑ **STEP SIX — ... Return to STEP ONE...**

La méthode **INTEGRAAL** (FONDaTERRA & REEDS)

mise au point par l'Equipe IACA du C3ED et FONDaTERRA pour répondre aux besoins d'expertise et de concertation d'acteurs autour des problèmes de stratégie industrielle et d'aménagement territorial.



Le résultat visé des analyses et des procédures d'accompagnement est alors une plus grande pertinence et adéquation des informations et décisions en termes, d'une part, de performance sur les plans économique et environnemental et, d'autre part, de légitimité et d'acceptabilité aux yeux des parties-prenantes du territoire et de la société au large.

TERRAINS TOOLS TASKS:

ORGANISING THE “THEATRE OF KNOWLEDGE”

- **Task Type A:** Build a Collective Learning Process:
Determine key Decision, Evaluation & Communication challenges, and construct a multi-event “Deliberative Forum” facilitating learning & action.
- **Task Type B:** Undertake Assessments or Evaluations:
Assess current performance or options at appropriate scales (from farm to region to nation...) in a multi-stakeholder multi-criteria perspective (e.g., using the kerDST « Deliberation Matrix »).
- **Task Type C:** Motivate and Prepare the Use of « Indicators »:
Define the roles of indicators to describe & assess performance and quality for any existing situation and for scenarios of policy or investment actions;
Build up banks of indicators pertinent to monitoring/assessment needs.
- **Task Type D:** Produce Benchmark & Strategic Reports:
Communication around Assessment processes and outcomes (e.g., selection of indicators, determination of Reference values [by whom, for whom?])

CONDUCTING SUSTAINABILITY ASSESSMENTS

THE CONTEXTS ARE EXTREMELY DIVERSE:

- ◆ The relevant scales are very different (from cell to household to planet);
- ◆ Wide variability from place to place (sites, regions, countries...);
- ◆ The Targets, Goals & SQPMBLs are articulated in varied ways;
- ◆ The categories of Stakeholders are context-dependent;
- ◆ The Scenario framing (of futures & options) is situation-specific;
 - ◆ ... and also ... the availability/quality of data varies greatly...

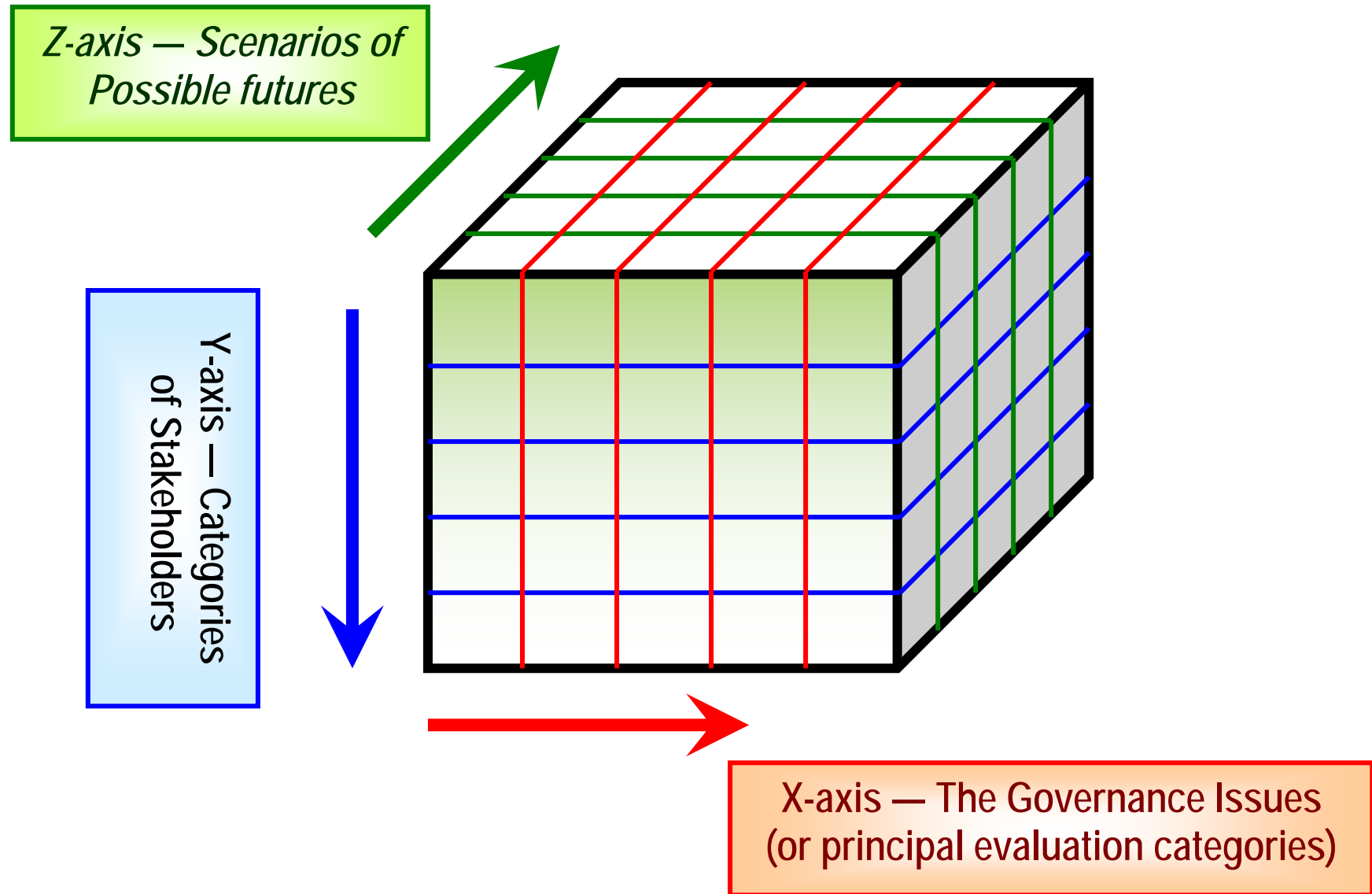
... YET, ACROSS THIS VARIETY, THERE IS STRUCTURAL SIMILARITY
WHICH IS IMPORTANT IN METHODOLOGICAL TERMS...

INTRODUCING INDICATOR-BASED EVALUATIONS WITH THE KERBABEL™ DELIBERATION MATRIX

KERDST = AN ON-LINE DELIBERATION SUPPORT TOOL
FOR MULTI-STAKEHOLDER MULTI-CRITERIA EVALUATION

- ❑ **The Evaluation/Governance Issues:**
A small number of distinct Quality/Performance concerns
- ❑ **The Major Types of Actors or Stakeholders**
A pragmatic demarcation of “interests” and collective identities
- ❑ **The Policy Options or Possible Futures:**
A small number of Options for Action and/or Decision Scenarios [*]
*If the task is to evaluate a specific activity or to compare several situations, then the user specifies a **SITE** or **SITES** rather than **SCENARIOS**.*

THE STRUCTURE OF THE KERDST 'DELIBERATION MATRIX'



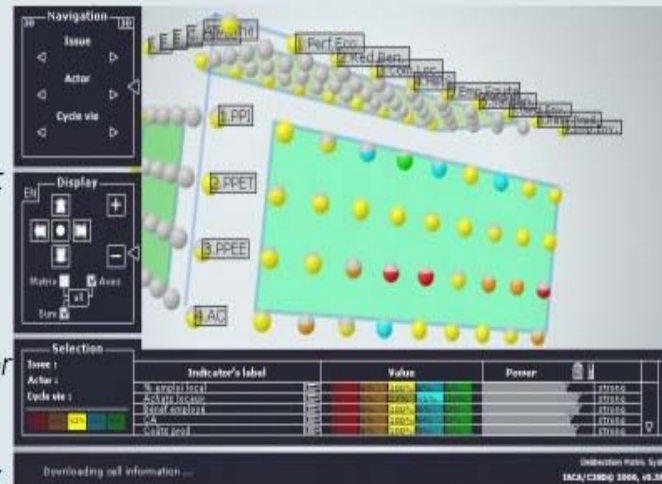
Home

Welcome to the new version of KERDST : V3

Submitted by Franck on Tue, 2005-10-04 07:03.

2007 : The new V3

The **KerDST** (Deliberation Support Tool) including the KerBabel™ Deliberation Matrix (DM) and the KerBabel™ Indicator Kiosk (KIK) is an on-line tool offering users a multi-stakeholder multi-criteria deliberation framework that can be applied to any desired situation of choice or discussion. With the third generation of **KerDST**, the tool adds to the existing deliberation structure (organising actors, issues and scenarios of a debate) the possibility to create and choose indicators within each vote that one actor gives about one scenario regarding one issue.



La "Matrice de Délibération" est un outil en ligne offrant aux utilisateurs un cadre de délibération multi-critères et multi-stakeholders applicable à n'importe quelle situation de choix ou de discussion.

How to do it / Mode d'emplois :

Debates v0.2

- La gestion des ressources en eau souterraines dans la Vallée du Souf (Sahara Algérien)
- La gestion de l'eau dans une commune
- OGM en France
- Développement du parc nucléaire français: le cas de la Bretagne
- Prolongement de la francilienne A104

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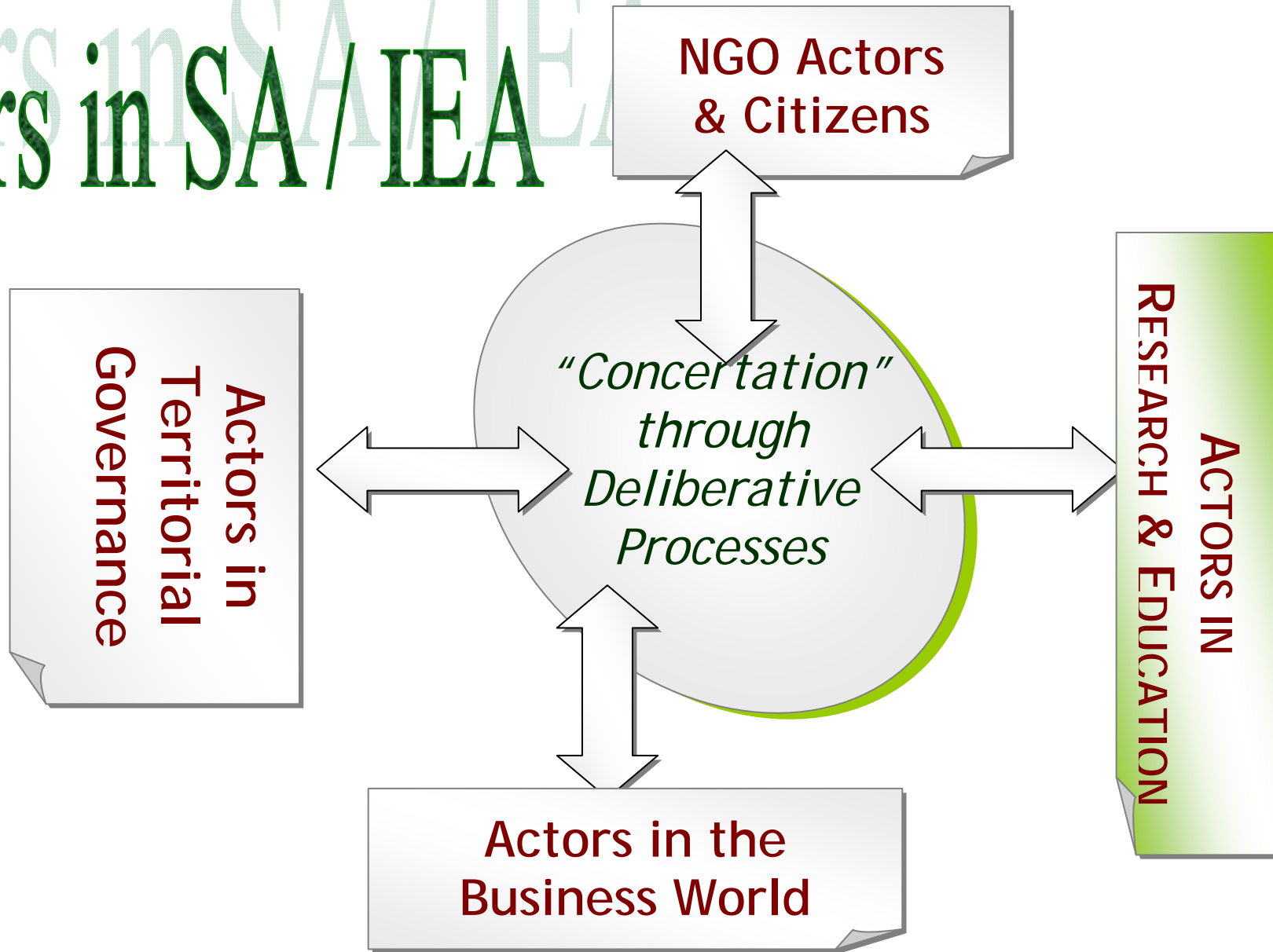
Who's online

There are currently 1 user and 5 guests online.

Online users:

- jean-marc

Actors in SA / IEA



DELIBERATION SUPPORTED BY INDICATORS

In the Variations “with indicators” of the on-line kerDST,

the judgement of a user for each Cell of the Matrix is informed by a “Basket of Indicators” .

- ❑ *It is permitted to choose **UP TO 5 DISTINCT INDICATORS** for each “basket” corresponding to an individual Cell of the DM*
- ❑ *For each indicator placed in a basket, the user must specify the **JUDGEMENT** [by choice of colour code] and the relative **WEIGHT** compared with other indicators*
- ❑ *The Colour displayed on the Cell within the DM array, then is determined as a “composite” of the judgements and relative weightings attributed to each indicator in the ‘basket’.*

In the current on-line KERDST, the convention is to display the colour corresponding to the single most prevalent judgement, but only for the proportion of that colour’s presence.

SCREEN COPY OF AN INDICATOR "BASKET" FOR A CELL OF THE DM

The screenshot displays a software interface with two main sections: a 3D visualization and a data table.

3D Visualization: Shows a blue wireframe cube containing several grey spheres. Yellow spheres with question marks are positioned around the cube. Labels include "Scenario 1" and "Scenario 2" pointing to specific yellow spheres. A "KIK" label is also visible above the table.

Display Panel (Top Left): Contains various icons for navigation and display control, including a plus sign (+), minus sign (-), and a "Display" label.

Selection Panel (Bottom Left): Includes fields for "Actor", "Scenario", and "Issue", along with a "Sum" button and a "I vote" checkbox.

Data Table: A table with three columns: "Indicator's label", "Value", and "Power". The "Value" column contains a horizontal bar chart with segments in red, yellow, green, and purple. The "Power" column shows a vertical bar chart with a "medium" label.

Indicator's label	Value	Power
lic 2	[Bar chart with red, yellow, green, purple segments]	[Bar chart with "medium" label]

QUALITATIVE & QUANTITATIVE FACETS OF SUSTAINABILITY ASSESSMENTS

In order to permit an assessment that is transparent and robust across the full spectrum of issues and stakeholders, SA needs to be organised in a multi-layered way.

- ❑ BUILDING THE PROBLEM requires a *“TOP-DOWN AND BOTTOM UP” DIALOGUE* between generic sustainability concepts and situation-specific concerns, to obtain a discursively derived set of SQPMBLs (*SUSTAINABILITY QUALITY-PERFORMANCE MULTIPLE BOTTOM LINES*).

- ❑ MAKING THE ASSESSMENT requires the mobilisation of a *REPRESENTATIVE DIVERSITY OF INDICATORS* whose role is to signal the preoccupations of the full spectrum of stakeholders across the spectrum of performance issues

SA LEVEL	ENVISAGED OUTCOME
CHARACTERISING "SUSTAINABILITY"	Adherence to a common vision of "Sustainable Development" or "Governance for Sustainability" as the pursuit or achievement of a coevolution of interdependent systems respecting simultaneously multiple "bottom lines"
ARTICULATING THE QUALITIES TO BE UPHELD: <i>"SUSTAINING OF WHAT, WHY AND FOR WHOM?"</i>	Agreement by Stakeholders on the set of Performance/Quality considerations that are affirmed as "Bottom Lines" for the SPECIFIC policy situation or class of challenges being addressed.
PROPOSING AND MOBILISING INDICATORS FOR EACH PERFORMANCE CATEGORY / SUB-CATEGORY	Consensus about baskets of appropriate INDICATORS to be mobilized, as a function of issues, stakeholder diversity and the range of sites, scales and options under discussion.

SUSTAINABILITY INDICATORS

The kerDST framework of multi-criteria multi-stakeholder evaluation, defines roles for indicators, which are mobilised:

- (1) to describe situations (or scenarios for future situations), and
- (2) to compose judgements about performance and quality.

This implies the need to build up banks of indicators adapted to monitoring/assessment needs.

We need TOOLS AND METHODS to declare, classify and mobilise indicators as a function of their (perceived) pertinence to a specific assessment context.

THE KIK – META-INFORMATION CATEGORIES

The KerBabel Indicator Kiosk (KIK), is a meta-information system that, for any specific assessment context, proposes fields that permit users to declare views on the PERTINENCE of an indicator relative to:

- each of the “PERFORMANCE ISSUES” identified for the multi-criteria evaluation
- each of the Actor/STAKEHOLDER CATEGORIES of deliberation perspectives
- the organisational SCALE(S) at which the indicator is applicable
- each of the SITES or activities or situations where SA is made or envisaged.

The KIK can also provide a declaration & documentation format for:

- specification of indicator values or ranges for SCENARIOS.
- KQA PROFILING, including uncertainties of current data and indeterminacies associated with indicators & models in scenario exercises.
- Specification of normative REFERENCE VALUES (or ranges) for assessing past, current or scenario outcomes against scientific & societal benchmarks.

SUMMING UP

- ❑ This 'generic' Sustainability Assessment (SA) method is socially robust, in that it can be applied meaningfully...
 - ... with very incomplete information sets;*
 - ... with a great diversity of 'candidate indicators';*
 - ... in a dynamic way (both contributing to and benefiting from improvements in the supporting information sets).*
- ❑ It can also be applied meaningfully
 - ... with modest technical expertise;*
 - ... and to build dialogues between constituencies holding very disparate knowledges and expertise.*

