

42nd LCA Discussion Forum:
'Integrating Biodiversity in LCA'

Integrating Biodiversity Loss in LCA

***A Perspective from the UNEP/SETAC
Life Cycle Initiative's Secretariat***

Guido Sonnemann, Sonia Valdivia, Mireille Rack

United Nations Environment Programme
Division of Technology, Industry and Economics
Sustainable Consumption and Production Branch



Agenda

1) UNEP

- i. Introduction
- ii. Thematic Priorities

2) Life Cycle Initiative

- i. Introduction
- ii. Achievements
- iii. Incorporating Biodiversity

3) Feedback & Contact Information



United Nations Environment Programme

- **Established 1972**
- **Headquarters: Nairobi, Kenya**
 - ➔ **6 regional offices + various country offices**
- **Mission Statement:**

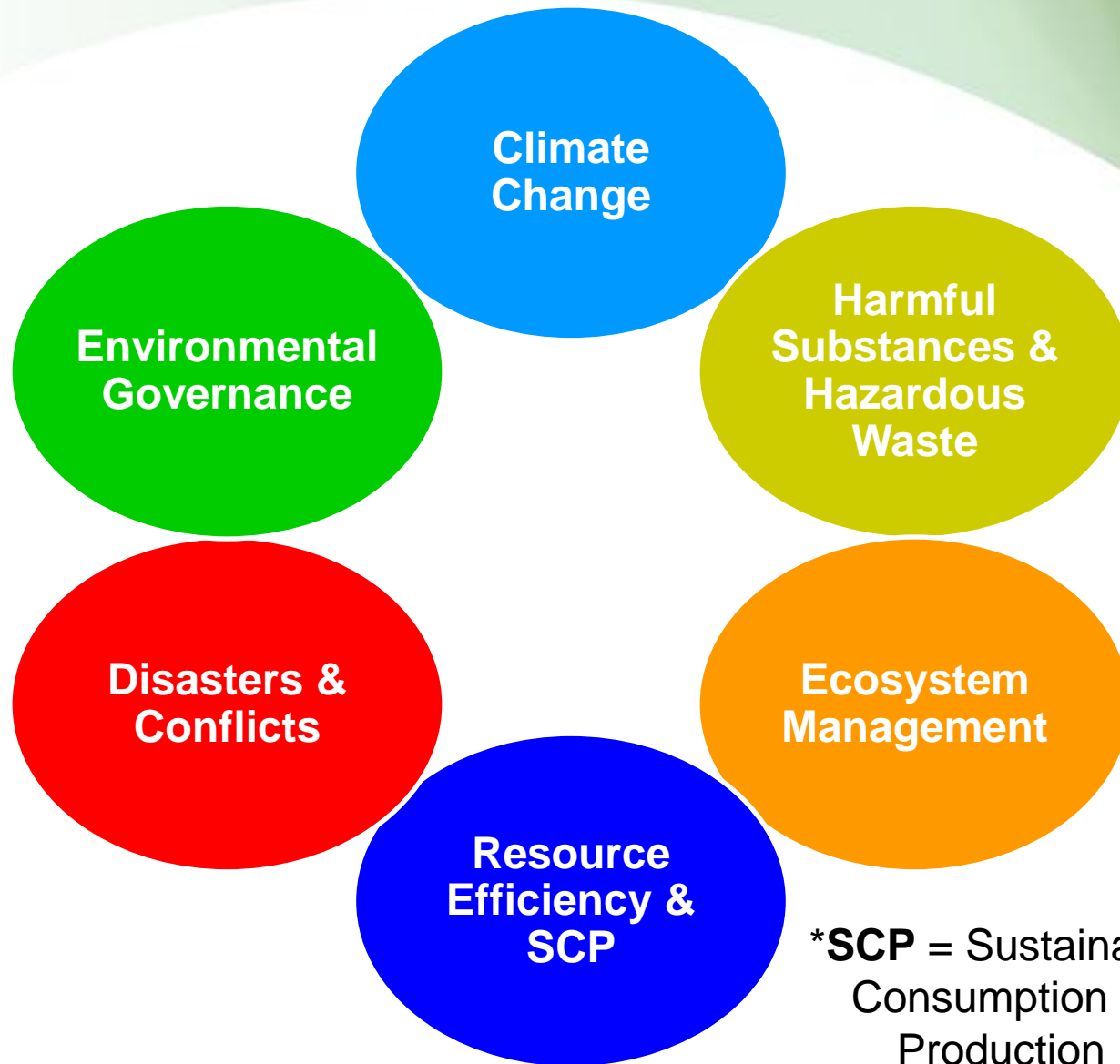
To provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations.



<http://www.unep.org/>



UNEP – Thematic Priorities



***SCP** = Sustainable
Consumption &
Production

Life Cycle
Initiative

UNEP – SCP

International Panel for Sustainable Resource Management

UNEP Secretariat

Direction, procedures, outreach

Resource Panel

Internationally recognized experts on sustainable resource management

Scientific assessments and advice, networks

Steering Committee

Governments and civil Society Organizations

Strategic guidance, political support, regional synergies

Cross-cutting topics

Decoupling

Impacts

Others

Sectoral entry points

Biofuels

Water

Metals

Land / Soil

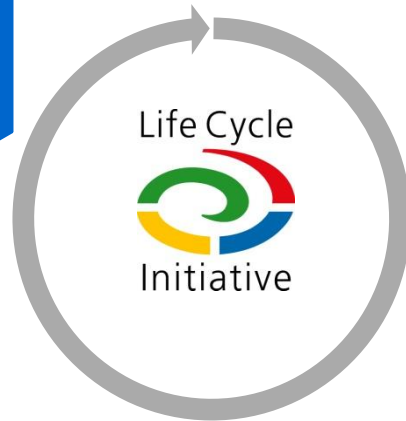


UNEP – SCP

UNEP/SETAC Life Cycle Initiative



10YP Marrakech Process
Identification of priority areas & articulation of programs based on the guiding principle of life cycle methodologies



Resource Panel
Authoritative assessments of env'l impact and resource stress using life cycle approach



International Panel
for Sustainable
Resource Management

<http://www.unep.fr/scp/sc/>



Life cycle indicators (carbon, water footprints etc.) to evaluate cost-benefit of investment and clean tech applications
Green Economy



Life Cycle
Initiative

UNEP/SETAC Life Cycle Initiative

Life Cycle

Introduction



Public Private Partnership

launched by UNEP & SETAC in 2002

Initiative

Mission: *To bring science-based life cycle approaches into practice worldwide*

Added Value: *Ability to mobilize an established and growing network of about 2000 global experts*

Objectives:

- 1) Refine & facilitate methodologies for LCA achieved by international consensus**
- 2) Facilitate the use of life cycle based approaches worldwide**
- 3) Expanding capability worldwide to apply life cycle approaches**



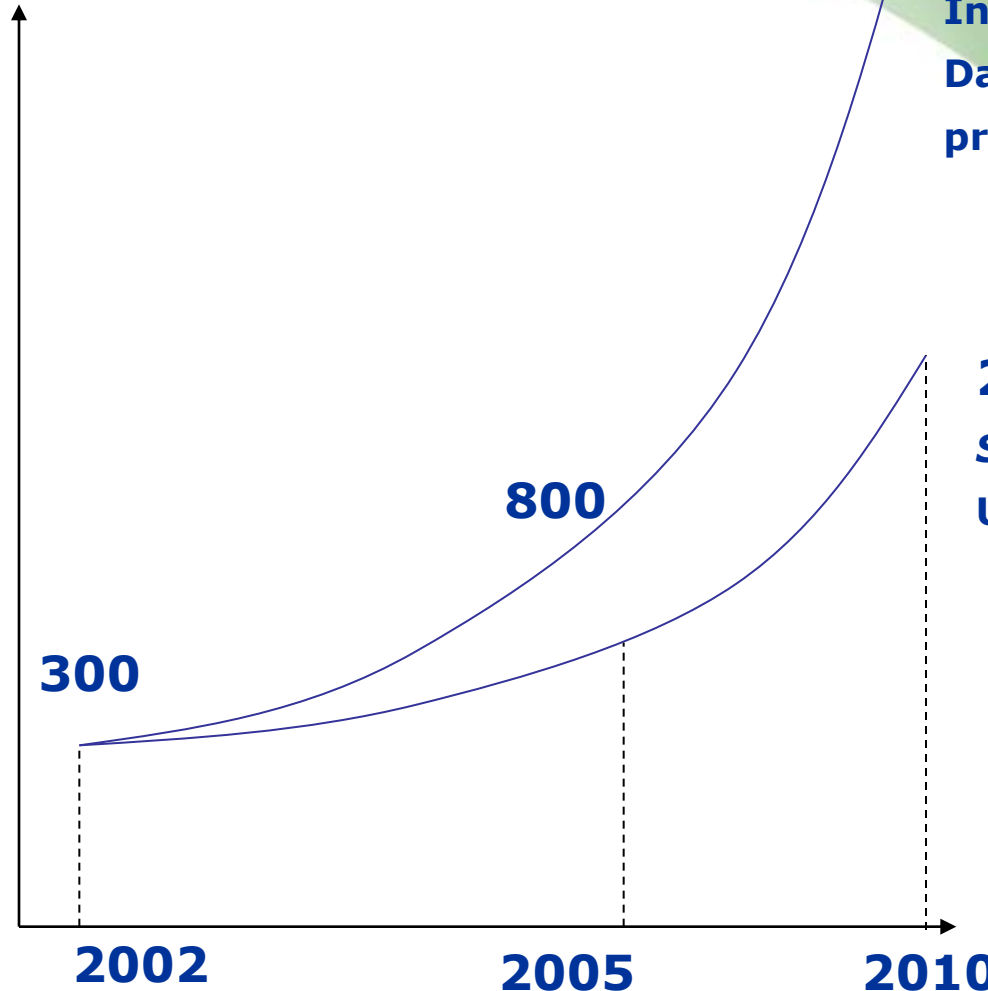
UNEP/SETAC Life Cycle Initiative

Bringing together LCA practitioners

6000
Source:
International
Database
providers

2000
Source:
UNEP

No. of practitioners identified



Founders

Life Cycle
UNEP/SETAC
Life Cycle Initiative
LC Net October 2010

Dear Friends of the UNEP/SETAC Life Cycle Initiative,

If you are planning on attending the LCAX Conference in Portland-Oregon, U.S.A., on 2nd - 4th November 2010, you are kindly invited to attend "Global Guidance for LCA Databases & UNEP Integrated Framework for LCIA" organized by the UNEP/SETAC Life Cycle Initiative.

Location: Room - Sellwood
Date: Thursday 4th November 2010
Time: 08:30 until 09:30

The event, chaired by Guido Sonnemann from UNEP, is an integrated session by the Life Cycle Initiative that will address two topics: 1) UNEP/SETAC's work on Global Guidance for LCA Databases and 2) UNEP's Integrated Framework for LCIA.

Global Guidance for LCA Databases

The United Nations Environment Programme (UNEP) and the Society of Environmental Toxicology and Chemistry (SETAC) are collaborating within the Life Cycle Initiative to address the need for global guidance on life cycle inventory (LCI) data collection and data processing into databases for widespread use. The process was launched at the first Stakeholder Engagement Meeting, "Towards Global Guidance for LCA Databases," in Boston on the 30th of September in 2009, where the high attendance confirmed the international interest in the UNEP/SETAC proposal. Many participants felt that the process is very timely and agreed with the vision. The vision is to provide global guidance on the establishment and maintenance of LCA databases, as the basis for future improved interchanges of databases worldwide.

The aims of the session in Portland are:

- To present the process and status of the activities;
- To receive feedback from the participants on emerging issues.

UNEP Integrated Framework for LCIA

LCIA is a tool for the systematic evaluation of the environmental aspects of a product or service system through all stages of its life cycle. The focus of the work on impact assessment within the UNEP/SETAC Life Cycle Initiative has been on refining the methodologies for evaluating the environmental impact of products since its launch. Topics addressed include in particular the assessment of toxicity and land use as well as carbon and water footprint.

UNEP has established resource efficiency as one of its six priority areas, together with climate change, biodiversity, hazardous substances, disasters & conflicts and environmental governance. The aim of resource efficiency is understood as doing more with less. That means using fewer resources and minimizing the environmental impact over the life cycle of a product to fulfil the same function and generating the same value. The aim of the proposed UNEP Framework is to facilitate a process to elaborate a framework with a set of resource efficiency, impacts and management indicators following guiding life cycle principles.

The aims of the session in Portland are:

- To present the UNEP framework;
- To consult with the participants on the framework;
- To identify potential partners, who would be interested in joining this work.

Kind Regards,
Secretariat of the UNEP/SETAC Life Cycle Initiative
For more information, please visit our website: <http://lcnitiative.unep.fr/>

LC Net Newsletter



UNEP/SETAC Life Cycle Initiative

Achievements – PUBLICATIONS

TOTAL ~ 10

Examples:

Guidelines for Social Life Cycle Assessment of Products

Life Cycle Management (LCM)

- ▶ A business guide to sustainability
- ▶ How business uses it to decrease footprint, create opportunities & make value chains more sustainable

* *Communication of Life Cycle Information in the Building and Energy Sectors*



(for the full list of publications and access to the documents please visit the Life Cycle Initiative's website: <http://lccinitiative.unep.fr/>)



UNEP/SETAC Life Cycle Initiative

Achievements – USEtox

Task Force on Toxic Impacts

Definition

Environmental model for characterization of human and ecotoxic impacts in LCIA and for comparative assessment and ranking of chemicals according to their inherent hazard characteristics

Effects:

- Break through in efforts aiming at global consensus
- Improvement of Toxicity Impact Assessment in LCA *important element of UNEP/ SETAC co-operation*

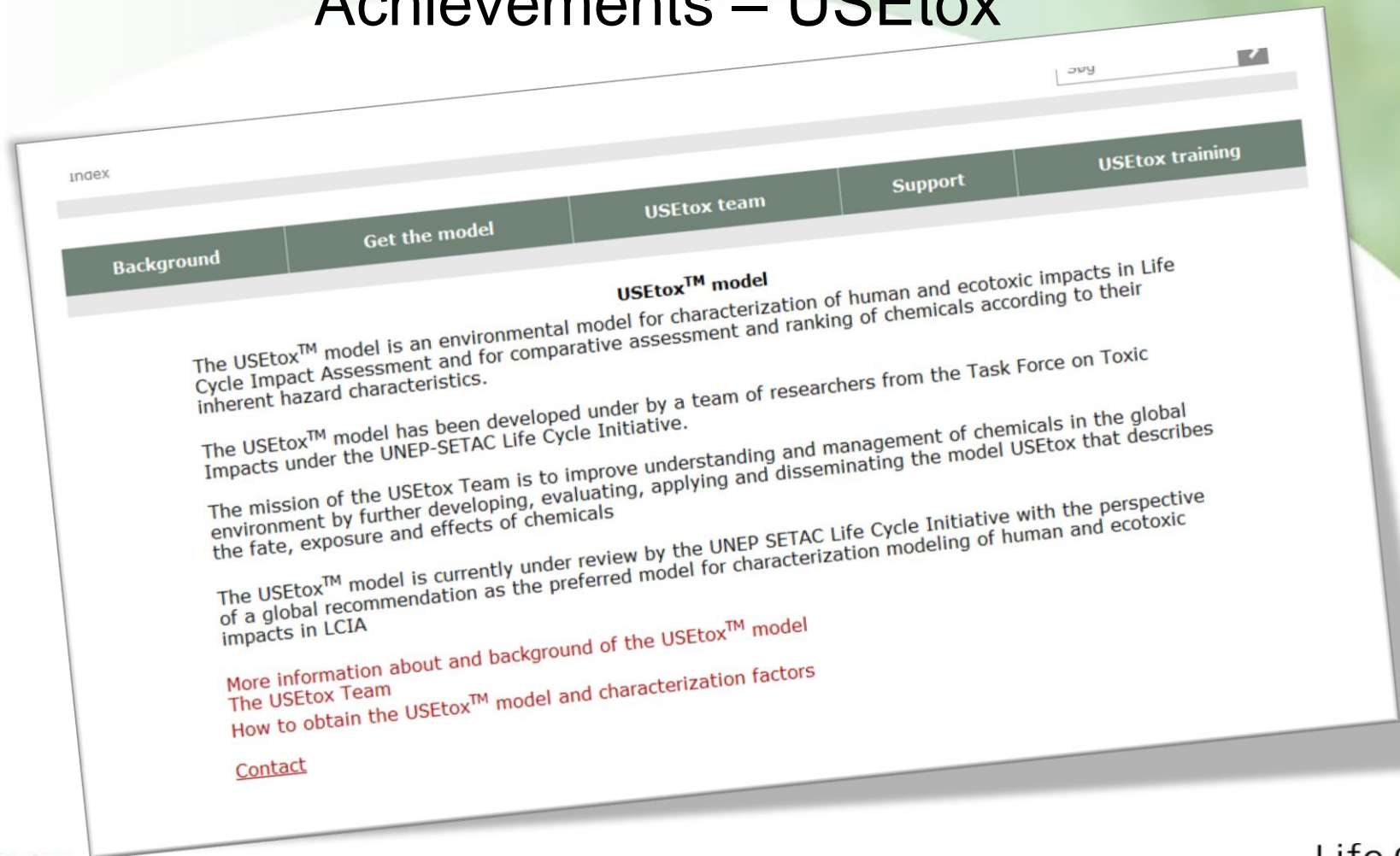
News:

- Included module on indoor pollution
- Software tools are incorporating the USEtox
- Upcoming special edition issue in International Journal of LCA



UNEP/SETAC Life Cycle Initiative

Achievements – USEtox



For further information please visit: <http://www.usetox.org/>



UNEP/SETAC Life Cycle Initiative

Achievements – Group Projects



2008 – 2011

Assessment of Water Use & Consumption within LCA

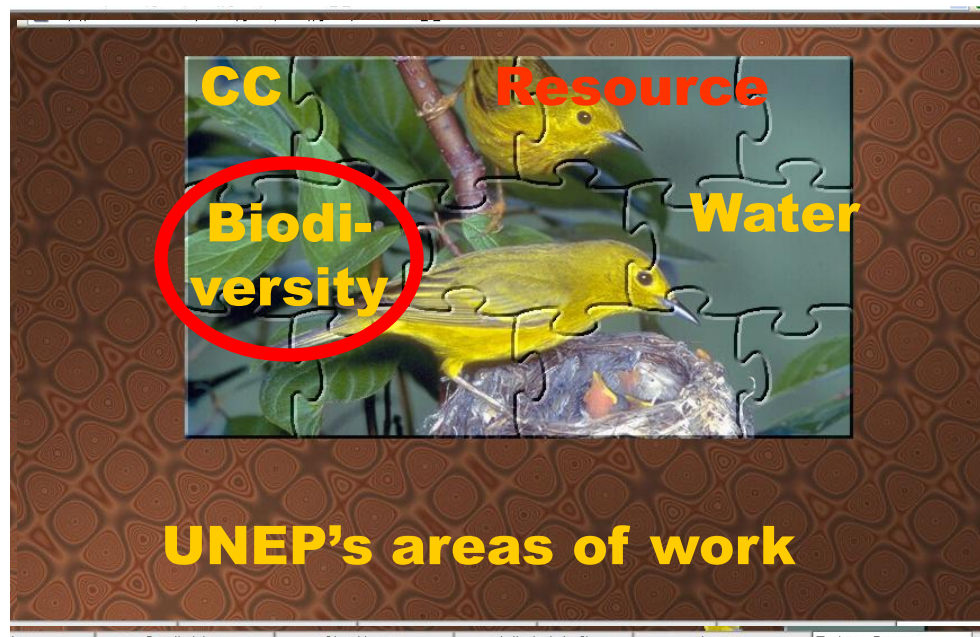
- Papers published
 - ❖ **Leaders:** Annette Köhler, Emmanuelle Aoustin

Operational Characterization Factors for Land use Impacts on Biodiversity and Ecosystem Services

- Contributing to various chapters/publications
 - ❖ **Leaders:** Thomas Köllner



The need for assessment of resource use and scarcity has been identified as a gap by the international community



2010 – Year of Biodiversity

Convention on Biological Diversity

Goals:

1. Conservation of biodiversity
2. Sustainable use of its components
3. Fair & equitable sharing of benefits arising from genetic resources



Recent Development:

Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization



2010 Nagoya, Japan COP10



Footprint Indicators

Environmental Product Declarations



Resource Use Intensity & Impact Assessment Indicators and Methods

	UNEP Midterm Strategy Priorities		
<i>Indicators</i> ↓	Resource Efficiency	Other Environmental Priorities	<i>Indicators</i> ↓
<i>Energy Demand (IEA)</i>	Energy	Climate Change (CC)	<i>Carbon Footprint (WRI/ WBCSD, ISO)</i>
<i>Water Footprint (WWF/ WFN)</i>	Water	Hazardous Substances (HS)	<i>USEtox (SETAC)</i>
<i>Material Intensity (WI)</i>	Materials	Ecosystems Management (EM)/ Biodiversity	<i>Biodiversity Damage (IUCN)</i>

Biodiversity Indicators



SEBI 2010
Streamlining European 2010 Biodiversity Indicators



FAO

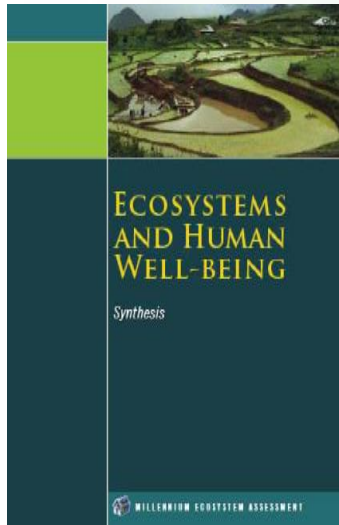
WRI

BINU
Biodiversity Indicators for National Use

Universities



Main Direct Drivers of Change in Biodiversity

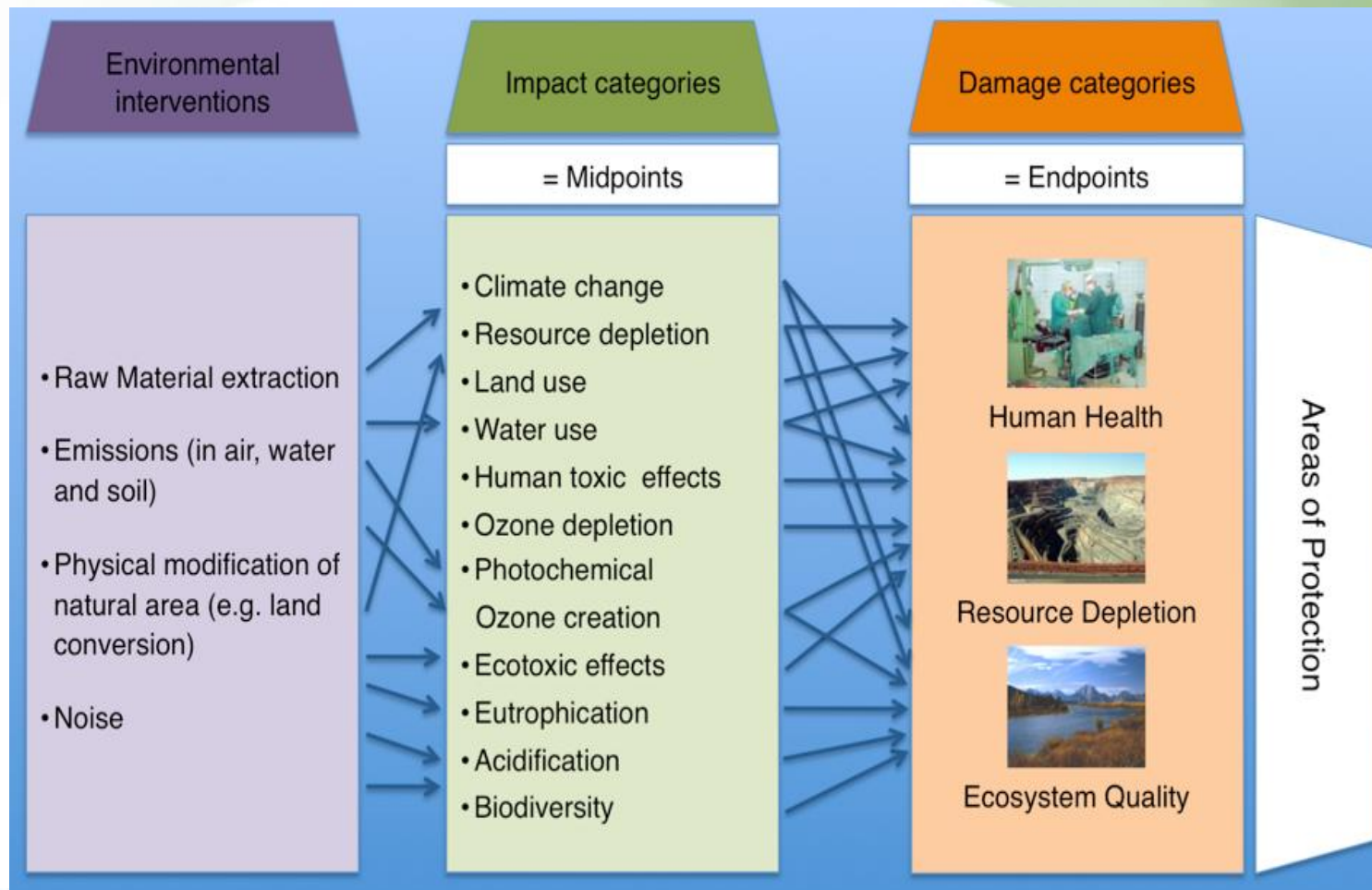


MILLENNIUM ECOSYSTEM ASSESSMENT ₁ (MA)		Habitat Change	Climate Change	Invasive Species	Over-exploitation	Pollution (Nitrogen, Phosphorus)
Forest	Boreal	↗	↑	↗	→	↑
	Temperate	↘	↑	↑	→	↑
	Tropical	↑	↑	↑	↗	↑
Dryland	Temperate grassland	↗	↑	→	→	↑
	Mediterranean	↗	↑	↑	→	↑
	Tropical grassland	↗	↑	↑	→	↑
	Desert	→	↑	→	→	↑
Inland water	↑	↑	↑	→	↑	

Life Cycle Initiative



LCIA Midpoint-Damage Framework of the UNEP/SETAC Life Cycle Initiative



Project Idea: Biodiversity Footprint

Overall Objective

- ▶ The ultimate goal is to increase the visibility of impacts on ecosystem and biodiversity due to goods and services for decision makers, in particular from industry and business.

Specific Objectives

- ▶ Better communication on the relevance of the measured impacts in LCA for ecosystem change
- ▶ Improvement of the indicators used, taking into consideration the learnings of the MA.
- ▶ Bringing together different stakeholders that contribute to and benefit from the better integration

Outputs

- ▶ Awareness increased of impacts on biodiversity due to products
- ▶ Global Roadmap for using MA Learning in the LCA established models bridging the gaps in impacts on ecosystems developed

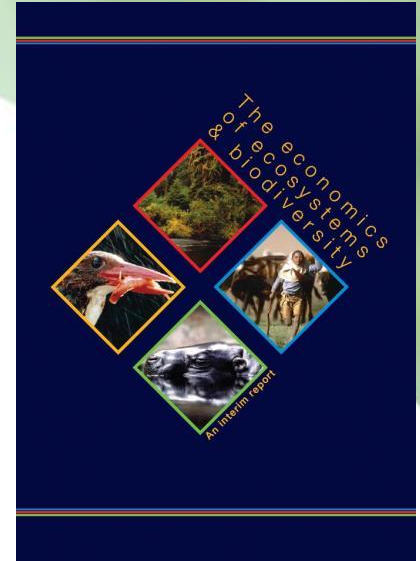


Input Provided to TEEB

The Economics of Ecosystems & Biodiversity

TEEB Initiative:

- ▶ Draws attention to global economic benefits of biodiversity,
- ▶ Highlights growing costs of biodiversity loss
- ▶ Guidance reports for policymakers, administrators, consumers, etc.



TEEB for Business Report

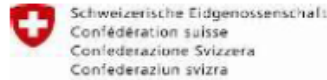
- Coordinators: IUCN, UNEP, GRI, etc.
- ❖ Practical guidance on issues & opportunities created by the inclusion of ecosystem- & biodiversity-related considerations in mainstream business practices

Third Business & the 2010 Biodiversity Challenge Conference

- **Session on Biodiversity Impact Assessment and Life Cycle Analysis,** facilitated by UNEP/SETAC Life Cycle Initiative, under heading NEW MANAGEMENT TOOLS – linking biodiversity with core business
→ 1 Dec. 2009, Jakarta, Indonesia

Thank you to our sponsoring partners:

Platinum sponsors



Swiss Confederation

Federal Office for the Environment FOEN



Federal Ministry of Education and Research



Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

International Plastics Associations as one platinum sponsor



13 companies and CIRAIG as one platinum sponsor



Gold sponsor



Silver Sponsor



Contact Information

For more information and resources please see:

<http://lcinitiative.unep.fr>

Contact us

Secretariat, Life Cycle Initiative

IRMU, SCP Branch

Division of Technology, Industry & Economics

United Nations Environment Programme

Paris, France

guido.sonnemann@unep.org

sonia.validivia@unep.org

mireille.rack@unep.org

