



A Climate for Change in Building

A Global Campaign for Sustainable Buildings

CBCS – Simposio Brasileiro de Construcao Sustentavel

Sao Paulo, Brazil 3rd - 4th August 2008

Peter Graham, *Coordinator SBCI*
United Nations
Environment Programme, DTIE

Agenda

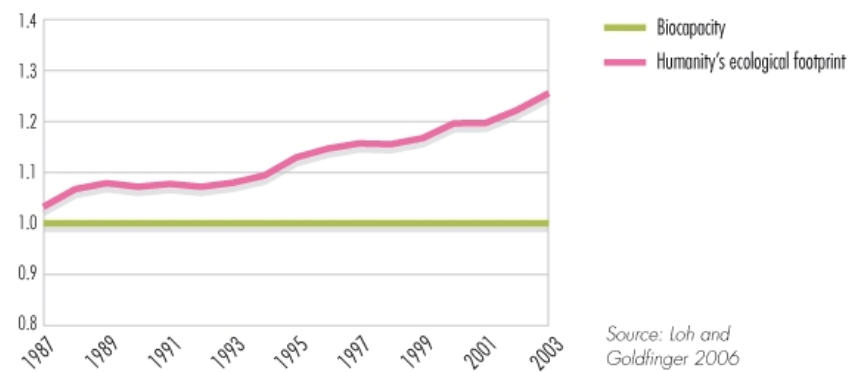
- Need for a global Campaign for SB;
 - Base-line performance requirements for sustainability;
 - Policy to reduce Greenhouse gas emissions and save money.

Our Consumption Continues to Increase ...



c) Humanity's ecological footprint

Number of Earths



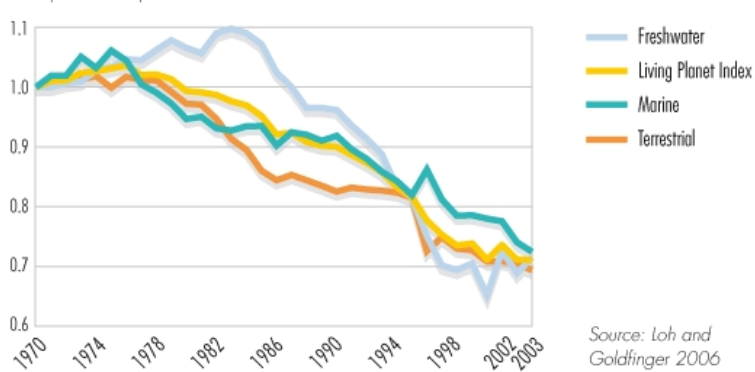
Source: Loh and Goldfinger 2006

While Earth's capacity to support us continues to decrease ...



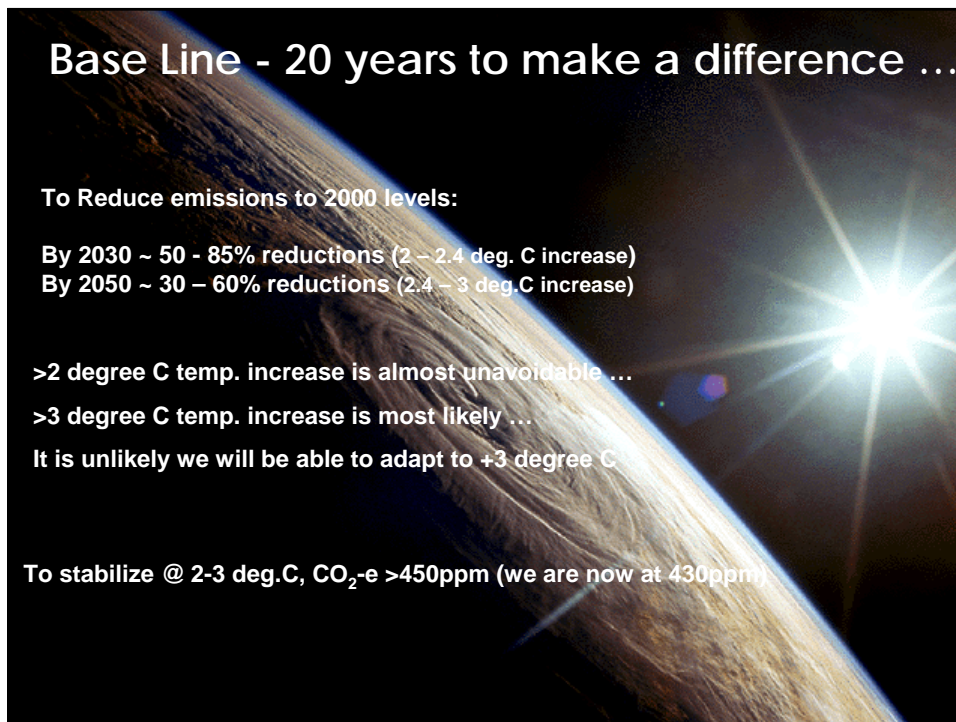
a) Living Planet Index

Index (1970=1.0)



Source: Loh and Goldfinger 2006

GEO 4 - www.unep.org



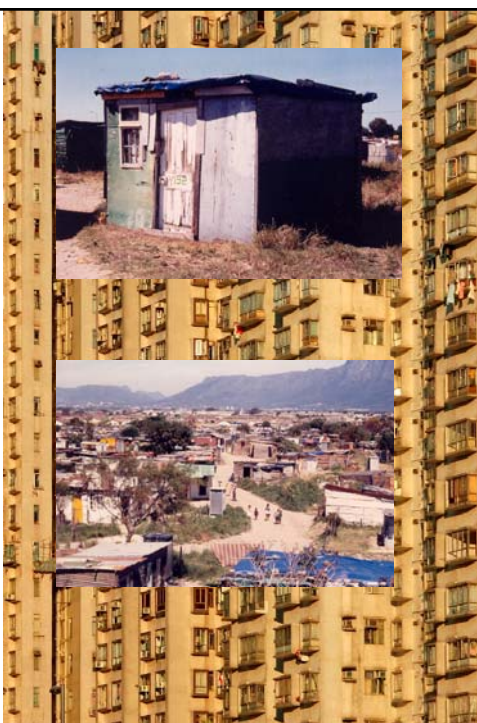
Base Line - 20 years to make a difference ...

To Reduce emissions to 2000 levels:

By 2030 ~ 50 - 85% reductions (2 - 2.4 deg. C increase)
By 2050 ~ 30 - 60% reductions (2.4 - 3 deg.C increase)

>2 degree C temp. increase is almost unavoidable ...
>3 degree C temp. increase is most likely ...
It is unlikely we will be able to adapt to +3 degree C

To stabilize @ 2-3 deg.C, CO₂-e >450ppm (we are now at 430ppm)



Need for Density & Affordable Housing

Many building projects in developing countries aim to provide housing for the poor.

Are Constructed Informally

The level of energy efficiency in such buildings will directly affect the ability of the poor to afford energy, as well as the total CO₂ emissions.

Water supply & security is paramount.

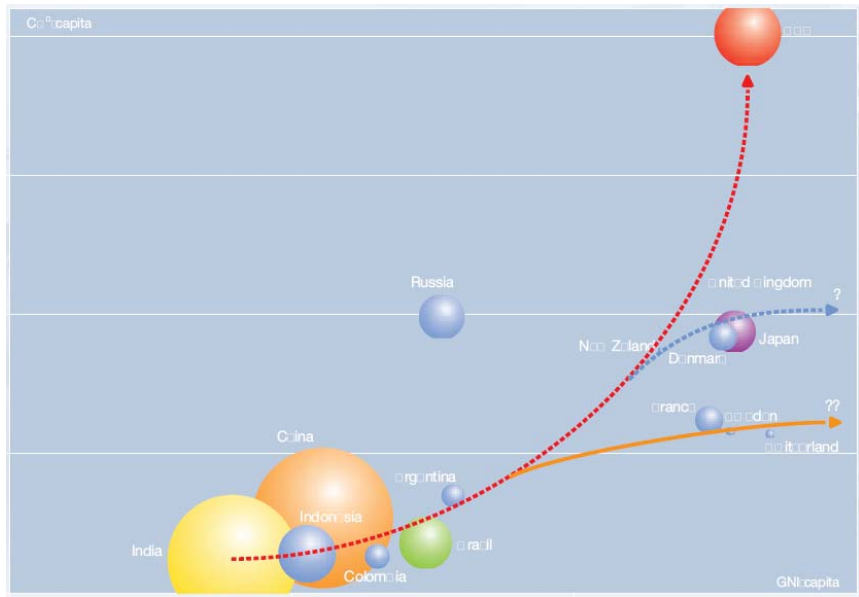


5-15 % of direct employment (111 million jobs)
Inconsistent and sometimes exploitative & dangerous working conditions
'Green Jobs' & Labour Standards (I.L.O.)

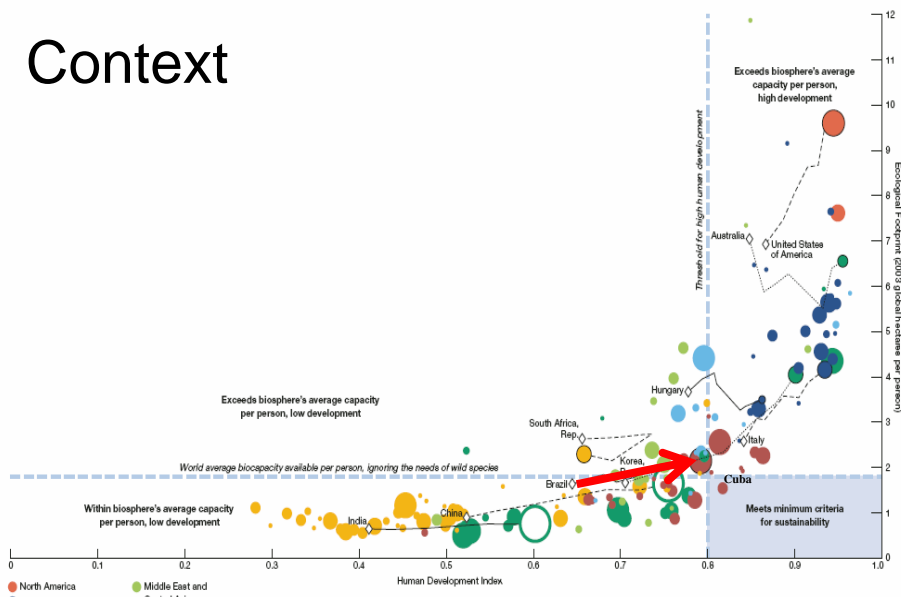
Need for Policy, Tools
and Incentives to
retrofit existing
buildings

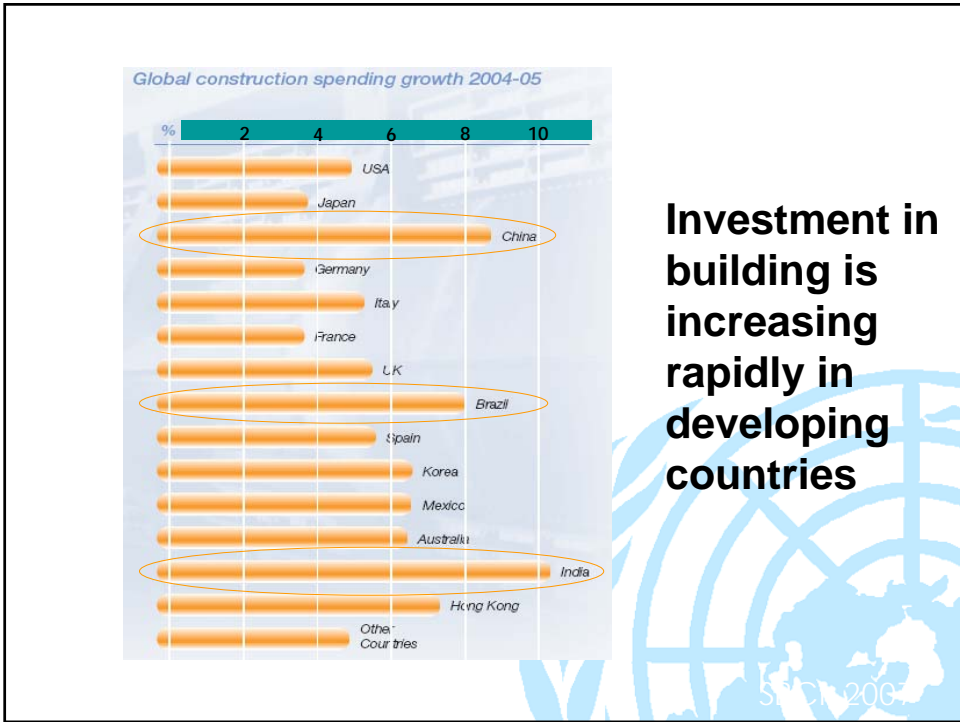
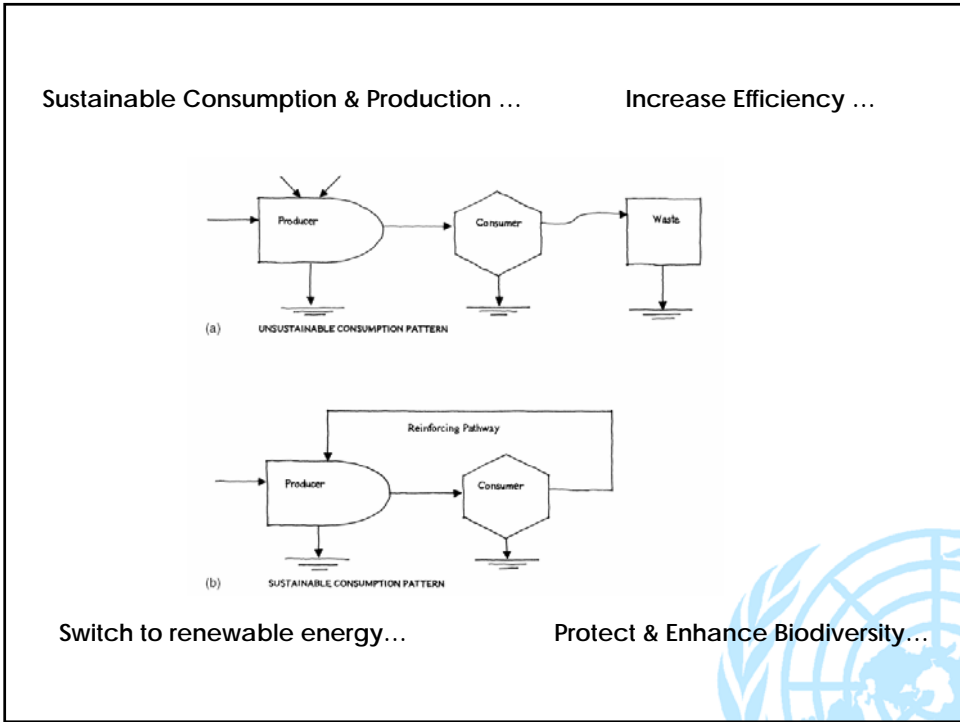


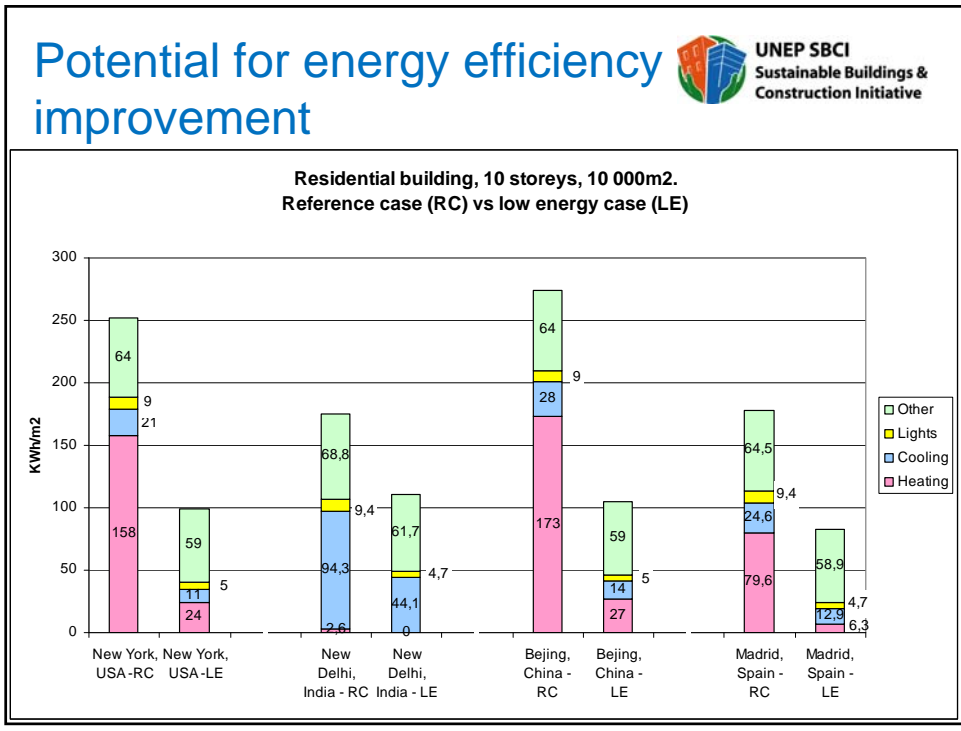
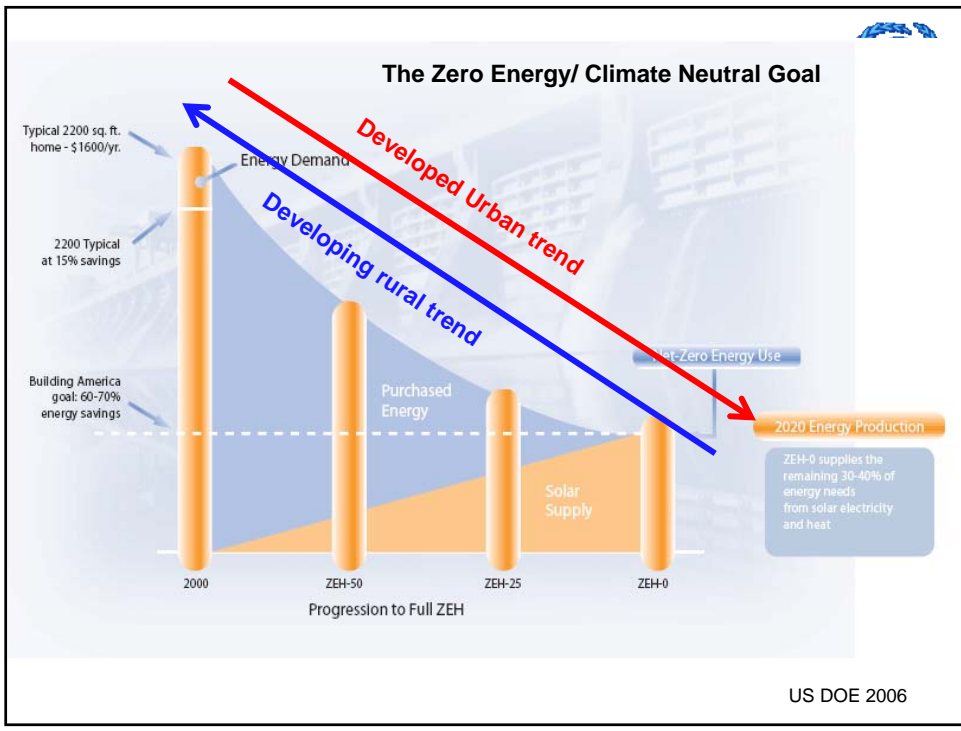
How will developing countries 'develop'?

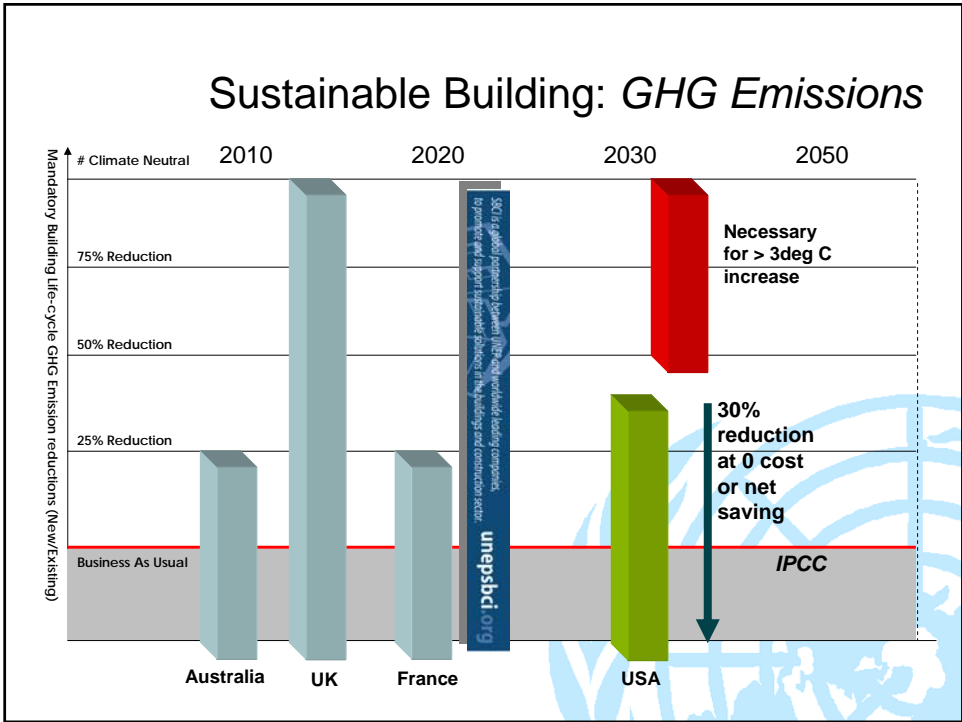
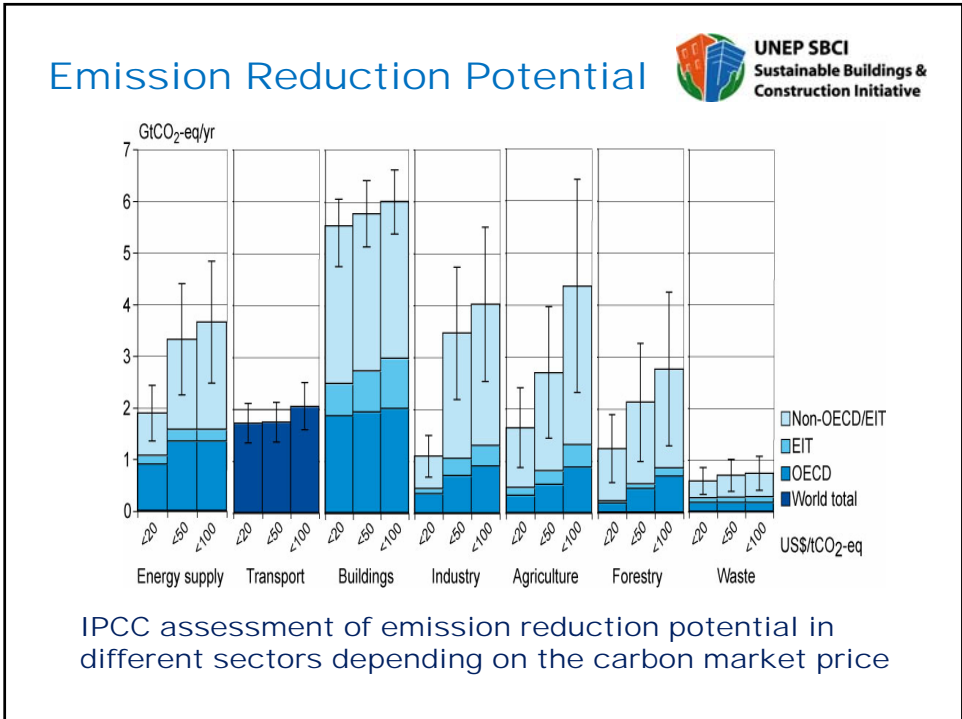


Context



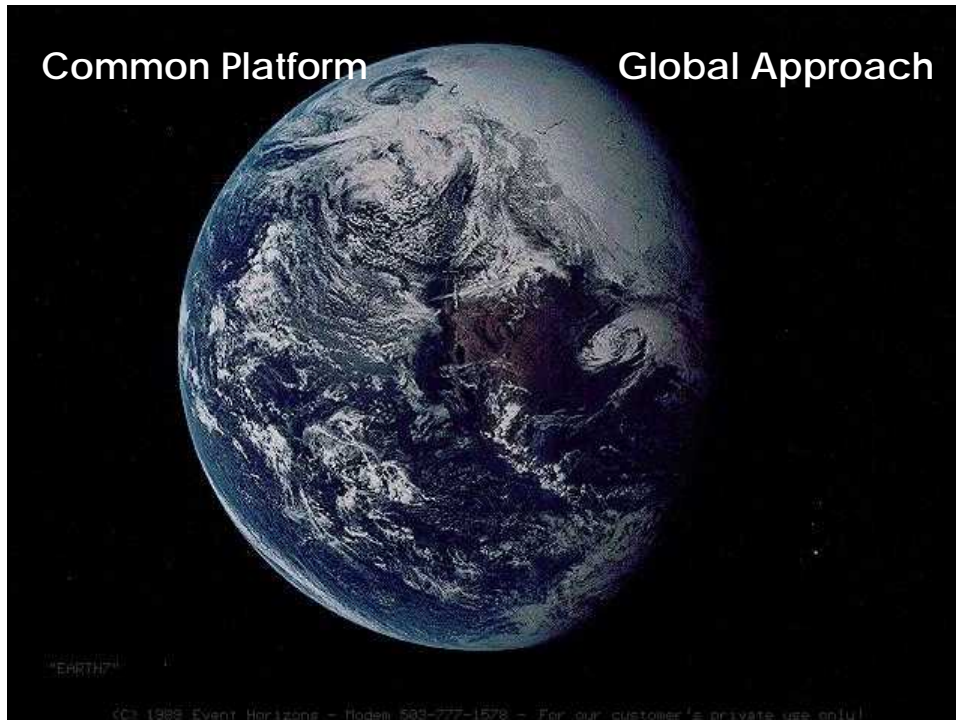







Barriers to Sustainable Building

- **Fragmentation**
- **The 'informal' sector**
- **Split Incentives**
- **Lack of common definitions, standards and quantification of benefits.**
- **Lack of political capacity and leadership;**
- **Lack of methodologies for carbon-trading.**






UNEP SBCI
Sustainable Buildings & Construction Initiative

Partnership between the Building Sector and the United Nations (UNEP).

Seeks to address common global challenges to sustainability in the B&C sector.

A UN Initiative



Current main thrust of SBCI

- Global policy making – Kyoto & global benchmarking
- Instruments for property investors & procurers - LCA
- Supporting developing countries to adopt SBC approaches
- Global Reporting of SBC



Monplaisir Group	Gravel Leclerc
Hydro	Plastedil
Schneider Electric	Broad Air conditioning
Sinotech Building	ArcelorMittal
Resilience	FIDIC
City of Madrid	IISI
Lend Lease Ltd.	ITACA
ONEP	Lafarge
WGBC	USGBC
AF&PA	Skanska AB
BNP Parisbas	ADEME
CSTB	SIKA
Government of St. Lucia	Blue
SOMFY	BRE
	The Property Council of Australia

Partners

Marrakech Task Force on Sustainable Buildings and Construction



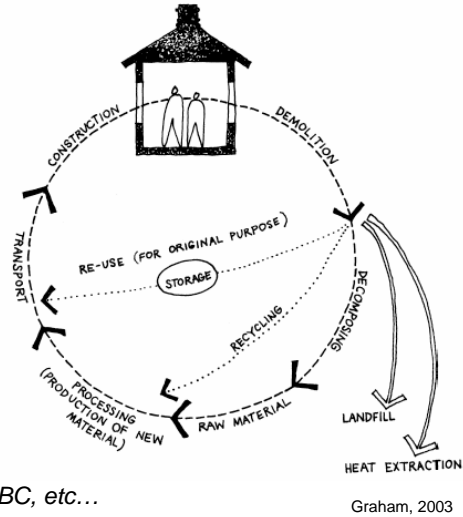
UNESCO Chair for Sustainable Construction

SBCI objectives



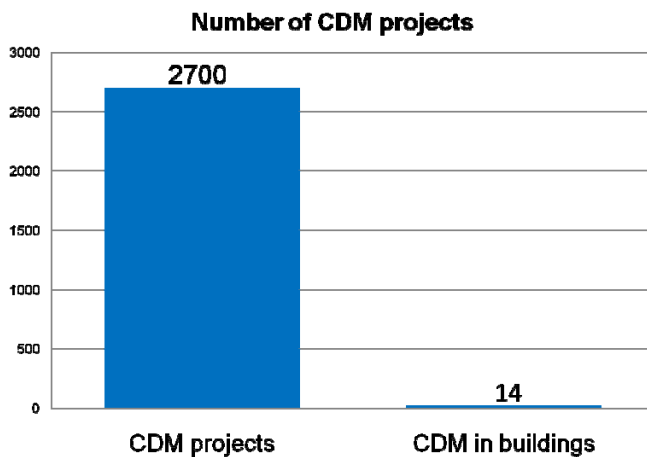
Benchmarking Progress – Sustainable Building & Construction Index ...

- Climate Neutral;
- Non-Toxic;
- Regenerative;
- Adaptable;
- Affordable;
- Pedagogical.



UNEP, ISO, LENSE, CRISP, iiSBE, USGBC, etc...

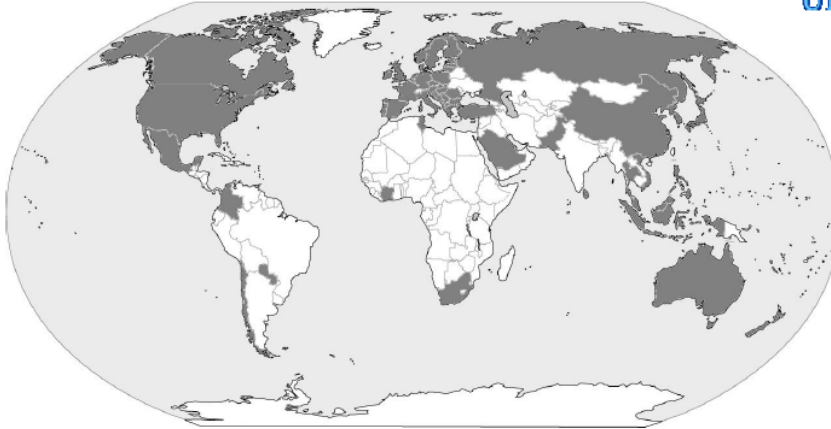
Climate Change Advocacy – Supporting emission reductions in the building sector post Kyoto 2012 ...



Study conducted by the UNEP Risö centre.

Full report to be published in 2008.

Policy Development & Implementation:

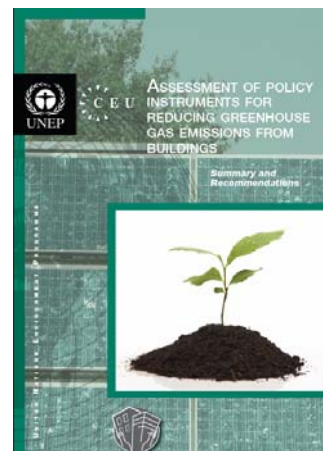


Building Codes Implemented in 2005 (Deringer, 2005)

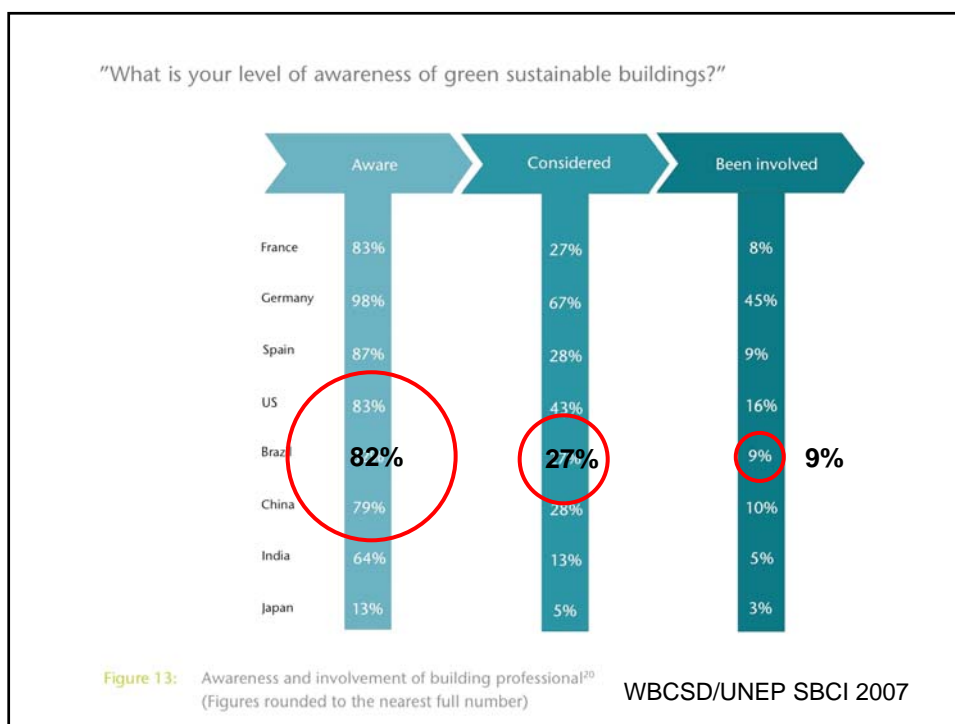


The building sector is not able to address the climate change challenge and move toward sustainable buildings and construction ...

Without government intervention




UNEP SBCI (2007) WBCSD (2007), G8 Gleneagles process (2007); Marrakech Task Force on SBC (2007); IPCC (2007); Finance Initiatives (2007); WGBC (2006)



SBCI-CEU policy study

20 policy tools in 4 groups

- 1. Control & regulatory**
 - Standards, procurement, EE obligations, Certification...
- 2. Economic and market-based**
 - Energy performance contracting, EE certificate schemes, CDM...
- 3. Fiscal instruments**
 - Taxation, tax cuts, subsidies, loans...
- 4. Information and voluntary**
 - Voluntary agreements, education campaigns, detailed billing...



UNEP SBCI
Sustainable Buildings &
Construction Initiative

Three Questions:

- 1. Emission reduction efficiency**
- 2. Cost effectiveness**
- 3. Conditions for success**

Findings



- **Costs/Benefits**
 - ~ US\$ +66 and a cost saving of US\$ 216 per ton of CO₂ avoided
- **Most Effective**
 - ~ Regulatory tools are fundamental due to the fact that the building sector is very fragmented.
- **Best Results**
 - ~ achieved if several tools are applied in combination with each other (sticks, carrots and tambourines)
- **Leadership**
 - ~ The public sector has a strong potential to show leadership by applying sustainable building guidelines to own buildings.



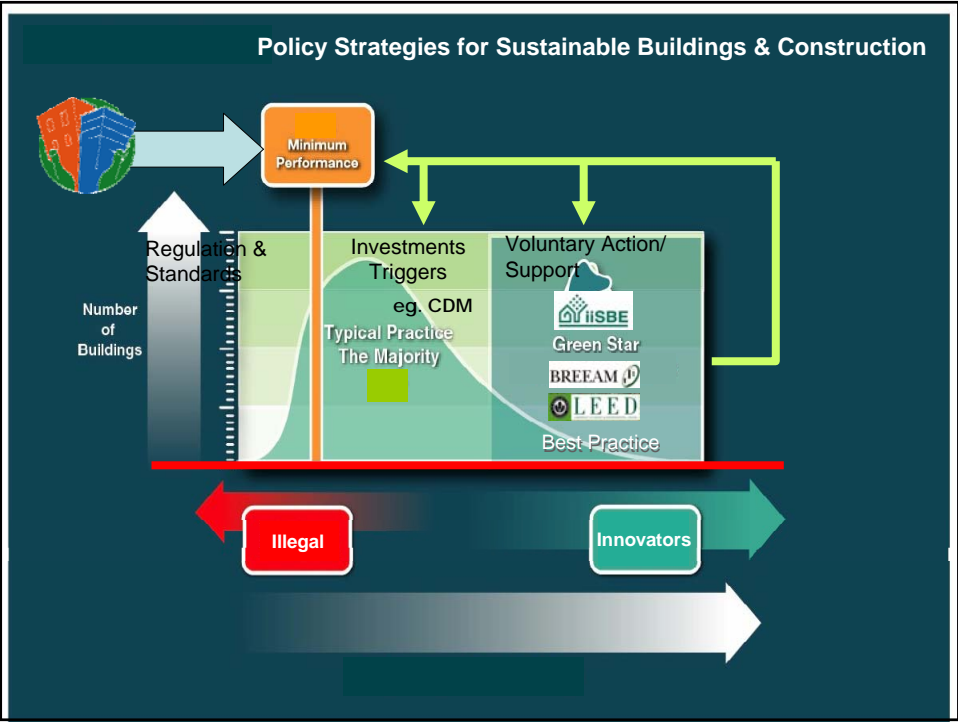
...Finding the right Policy package



Barrier category	Instrument category	Policy instruments as Remedies
Economic barriers	Regulatory-normative/ regulatory-informative	Appliance standards, building codes, energy efficiency obligations, mandatory labelling, procurement regulations, DSM programs
	Economic instruments	EPC/ESCOs, cooperative procurement, energy efficiency certificates
	Fiscal instruments	Taxation, public benefit charges, tax exemptions, subsidies/rebates/grants
Hidden costs/benefits	Regulatory-normative	Appliance standards, building codes
	Economic instruments	EPC/ ESCOs
	Support action	Public leadership programs
Market failures	Regulatory-normative/ regulatory/informative	Appliance standards, building codes, energy efficiency obligations, mandatory labelling, procurement regulations, DSM programs
	Economic instruments	EPC/ESCOs, cooperative procurement, energy efficiency certificates, Kyoto Flexibility mechanisms
	Fiscal instruments	Taxation, public benefit charges, tax exemptions, subsidies/rebates/grants
	Support, information, voluntary action	Voluntary labelling, voluntary agreement, public leadership programs, awareness raising, detailed billing
Cultural/ behavioral barriers	Support, information, voluntary action	Voluntary labelling, voluntary agreement, public leadership programs, awareness raising, detailed billing
Information barriers	Support, information, voluntary action	Voluntary labelling, voluntary agreement, public leadership programs, awareness raising, detailed billing
	Regulatory/informative	mandatory labelling, procurement regulations, DSM programs, mandatory audits
Structural/ political		Public leadership programs

Sources: Adapted from IPCC 2007, Carbon Trust 2005, Urge-Vorsatz *et al.* 2007b

SBCI, 2007 p54





- Training and awareness
- Sustainable Materials to local suppliers
- Support Centers
- Financial Incentives

2008-2009



1. Regional Base-Line Reporting (Mexico, India, Africa... Brazil?)
2. Policy Selection Software
3. Core Benchmarking Framework
4. Representation at UNFCCC Post-Kyoto Process
5. Implementation through Pilot Projects
6. SB Network OECD/IEA

Conclusions

1. Sustainable Buildings are 'here' but they are not 'there yet' – all building will need to meet the base-line performance set by climate change & sustainable development.
2. The building sector/market is not able to shift towards more energy efficient buildings on its own. Governments are beginning to support this shift!
3. UNEP SBCI offers the opportunity to take part of the global process in developing a new policy framework for sustainability in the buildings sector.

Base Line - 20 years to make a difference ...

THANK YOU

For more information:
www.unepsbci.org
www.unep.fr
pgraham@unep.fr

