



Greening the Building Sector Supply Chain



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Greening the Building Sector Supply Chain

"The building sector can be called the industry of "thirds": over a third of all CO2 emissions come from building construction and operations, over a third of all energy and material resources is used to build and operate buildings, and over a third of total waste results from construction and demolition activities."

UNEP- "Green Economy Report", 2011

1900 to 2005:

"Total material extraction increased over that period by a factor of 8. The strongest increase can be observed for construction minerals, which grew by a factor 34..."

UNEP- "Decoupling Natural Resource Use and Environmental Impacts from Economic Growth, 2011





The Global Impact of Buildings

Environment

1/3 of global GHG emissions is from the building sector- the single largest contributor of emissions

40% of global energy use

25% of global water usage

40% of global resources

60% of world's electricity consumed in residential and commercial buildings

Energy used for heating, cooling, ventilation lighting, plug loads, water production, etc.

Growth regions: Africa, Asia, Middle East, and Latin America



The Global Impact of Buildings

Economic

- Building sector represents 10% of global GDP- higher in some rapidly developing countries
- Employs more than 111 million people
- More than \$7 trillion in annual expenditures in the sector- expected to increase to \$12 trillion by 2020
- Nearly \$100 trillion will be spent in construction sector over the next 10 years



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Sustainability in the Building Sector

Achievements

Greater Awareness of Energy Efficiency and SB practices

- **Industry Practices**
 - Design for EE; incorporation of technologies
 - Construction practices (e.g. recycling and waste reduction, site management)
 - Operations (EE practices, behaviours)
- **Green Building Councils**
 - Market transformation
 - Rating tools, benchmarking
 - Local engagement
- **Governments**
 - Regulatory instruments (labeling, EPDs, codes)
 - Buildings in national climate strategies



Sustainability in the Building Sector

Achievements

Best Practices in all regions

High Performance Buildings

Climate Benefits (Reductions in operational emissions)

Incorporation of Renewable Energies in buildings

Established Path to net-Zero Buildings

Focus on Carbon (embodied energy, LCA)



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Sustainability in the Building Sector

More Opportunities

- Push best practices from end product and construction through entire supply chain
- Focus on Resource Efficiency- not just carbon: Resource Consumption and Availability
- Sector impact on overall Waste, Water, Transport (carbon and resources)
- Benefits to local economies and sector enterprises (including SMEs)



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Greening the Building Sector Supply Chain

Key Actors

Who is involved?

- Owners/Developers
- Regulators
- Designers
- Contractors
- Product Providers
- Material Extractors
- Transporters
- Operators/Users
- GBCs
- Financial Institutions
- Schools/Universities

Barriers

What prevents progress?

- Policy Frameworks (info/awareness, knowledge about benefits)
- Undefined responsibilities (owner, designer, contractor, etc.)
- Procurement requirements
- Fragmentation (trade separation)
- Risk distribution
- Lack of incentives
- Costs, Margins, Time
- Resource availability
- Hard and soft barriers
- Different benefits and measures of success throughout chain



Greening the Building Sector Supply Chain

Some Key Questions:

- What are the shared and differentiated responsibilities for a project owner/developer, designer, contractor and product or materials provider?
- Where is there potential to initiate resource efficiency and assure vertical (up/down) impact?
- To what extent can improved resource efficiency in the supply chain be influenced or driven by local and national planning regulations, mandatory and voluntary codes and targets?
- Where in the supply chain are the incentives for greater resource efficiency? Who benefits financially?
- What is the impact on time/cost?
- What are the measurements of success? What tools and indicators are available or need to be developed?
- What is the potential impact (economic, social and environmental) of greening the building sector supply chain?
- Can greening the building sector have impact on other sectors?
- What sectors/industries within the construction industry should collaborate/ join forces in order to accelerate the process of greening supply chains.

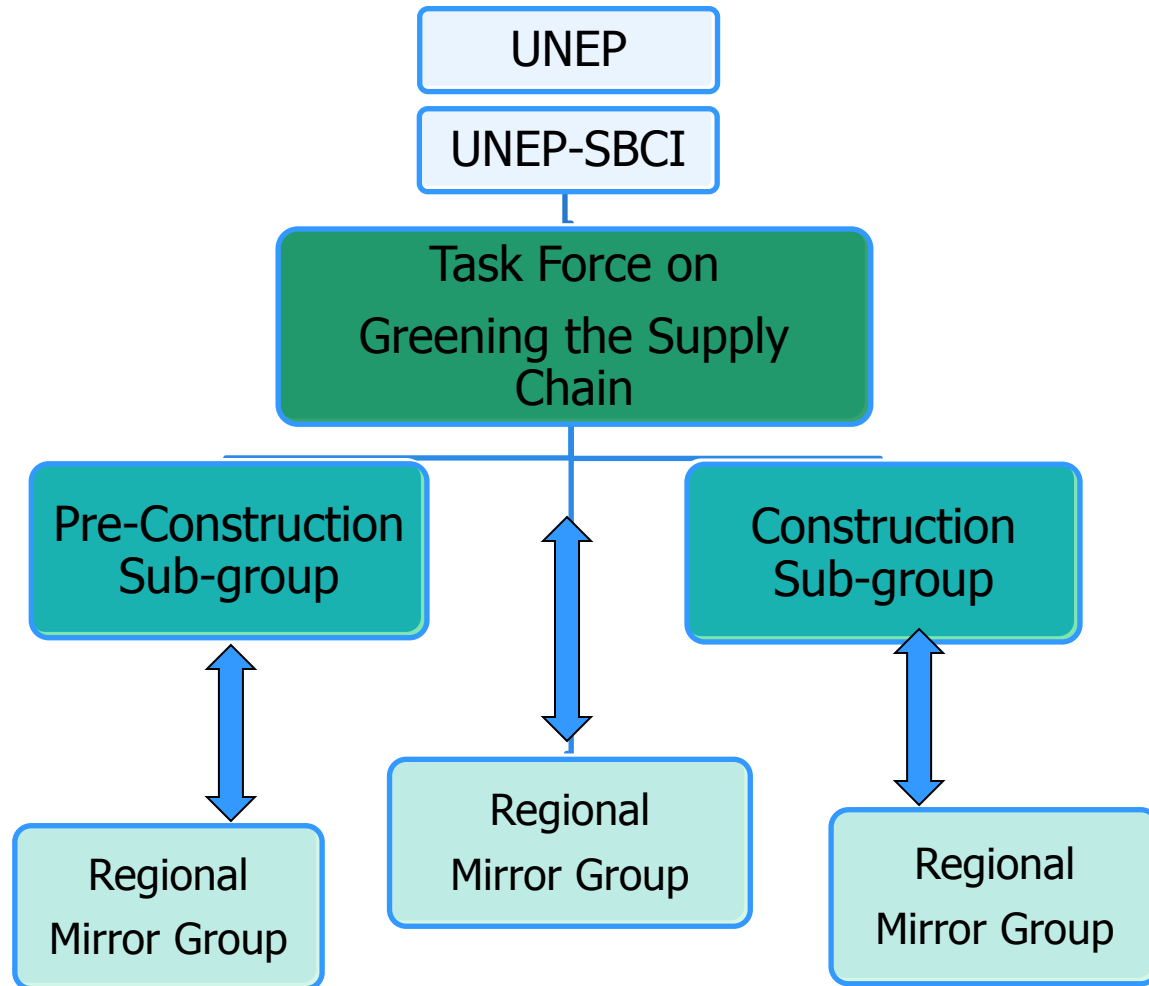




UNEP-SBCI Task Force on Greening the Building Sector Supply Chain

Expected Results:

- Identify institutional barriers and opportunities
- Identify and share best practices using comparative international case studies
- Identify reduction potential in resource consumption and broad goals for materials and waste, energy and carbon, water, transport
- Identify co-benefits of greening the supply chain
- Engage with sub-sectors to identify unique opportunities in supply chain links
- Identify areas for further study/research





Thank you

www.unep.org/sbci

<http://www.skanska.com/en/Sustainability>



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