Material Resource Challenges for Housing Sector in the Context of UN SDG 11 and 12

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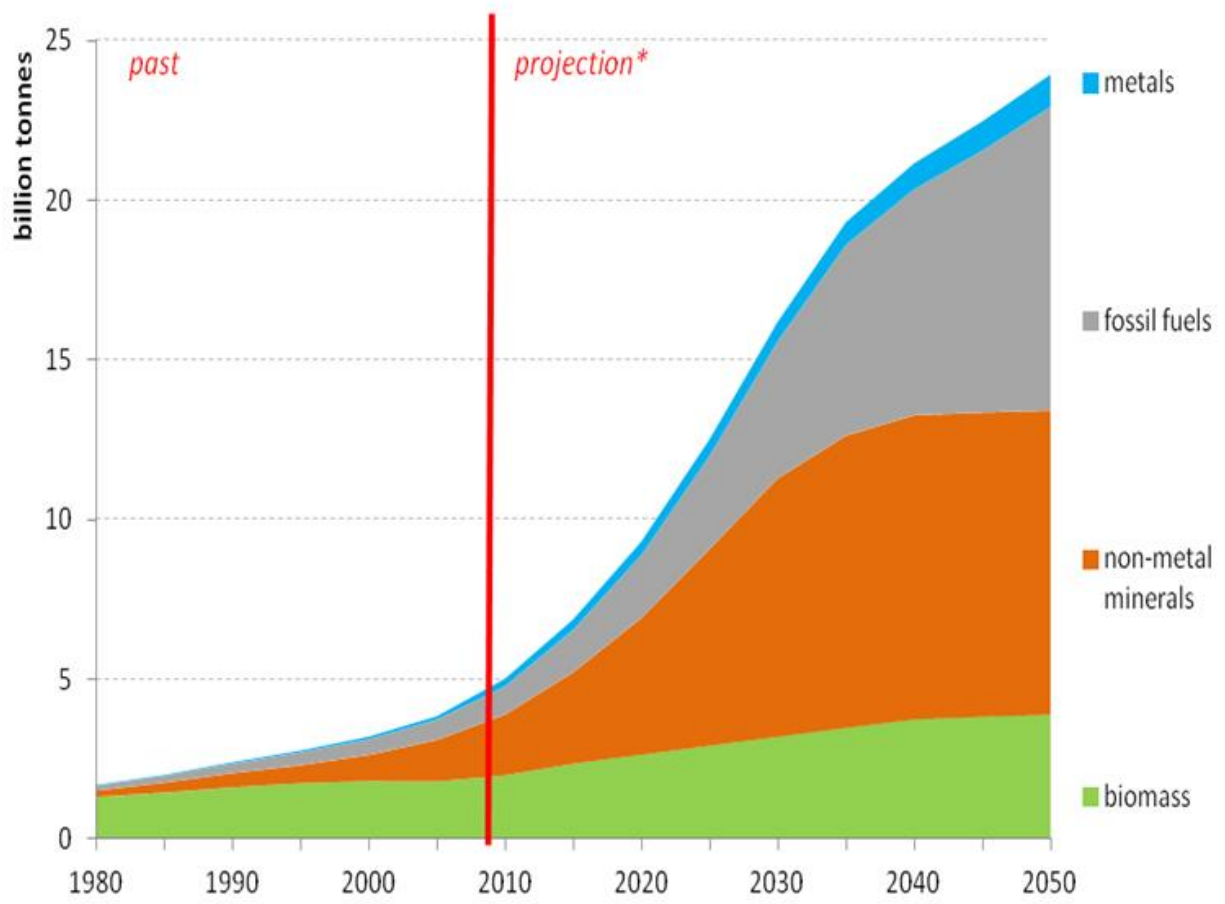
Construction sector material needs

- India 2nd largest material consumption in the world
- India highest material extraction/acre in the world
- Non-metal minerals will become largest category of extracted material
- More than 40 billion tonnes of aggregates are mined in the world each year (largest material group)

(Source: UNEP International Resource Panel, 2014; GIZ-India, 2015)

India material extraction by category



*Main assumptions: India follows typical material use pattern during development process; economic growth rates of about 8% p.a. until 2030, thereafter around 7% p.a. until 2035 and 6% p.a. until 2050. Data sources: Dittrich, 2012, SERI, 2011, TERI, 2012, UNData, 2012, Worldbank, 2012

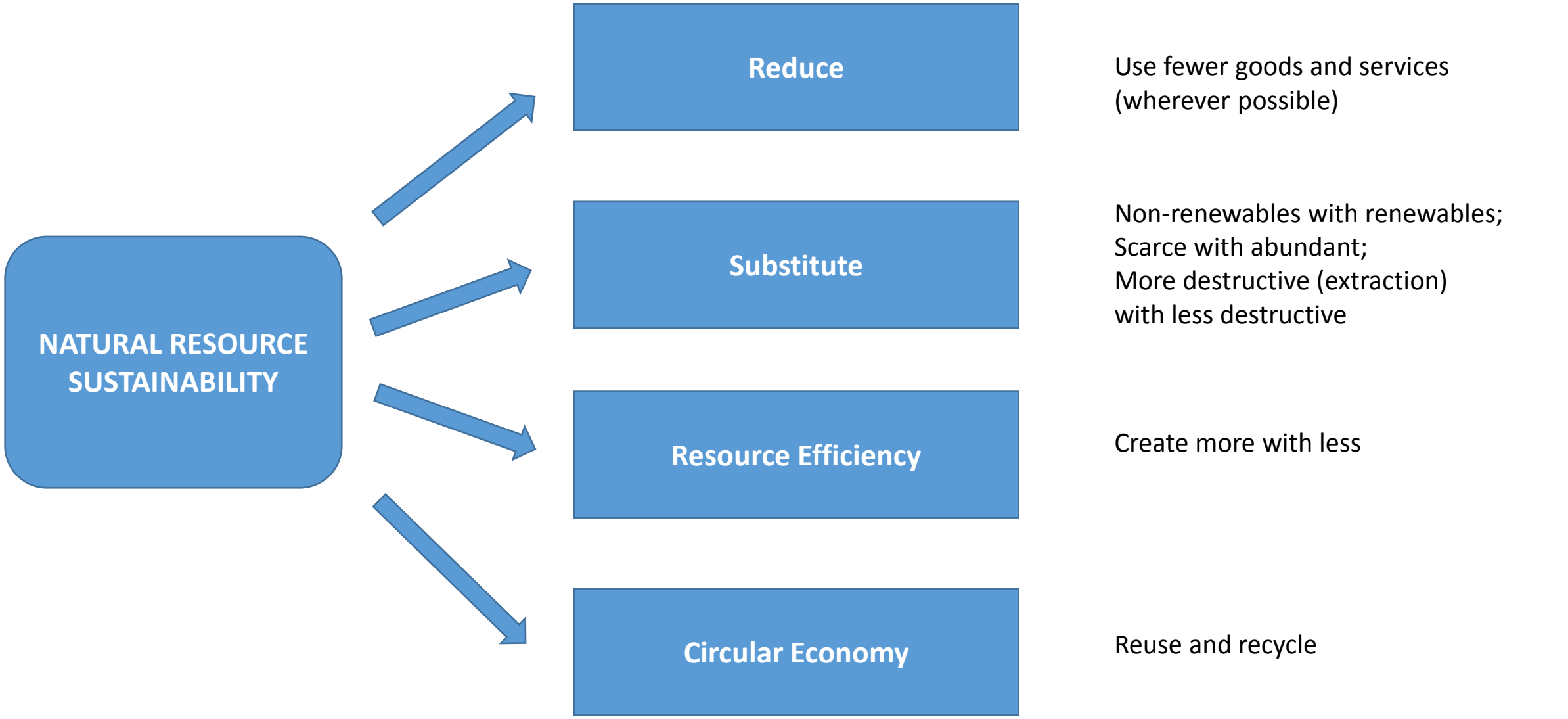
Are we running out of resources?

Absolute scarcity	vs.	Relative scarcity
(Insufficient quantities exist)		(Shortages due to problems in supply or disruption)

Lesson 1: We are running out of environmental/ecological space[1] faster than we are running out of resources!

Lesson 2: Each unit of current and future resource extraction creates larger environmental impact than in the past because higher quality/easily accessible resources have been depleted

[1] Refers to natural pollution sinks (including carbon sink) filling up as well as biodiversity/ecological productivity loss


NATURAL RESOURCE SUSTAINABILITY
Reduce
Use fewer goods and services (wherever possible)
Substitute
Non-renewables with renewables;
Scarce with abundant;
More destructive (extraction) with less destructive
Resource Efficiency
Create more with less
Circular Economy
Reuse and recycle

SDGs and Construction sector

SDG 11: Sustainable Cities and Communities

- 11.1 Access to housing
- 11.2 Access to public transport
- 11.3 Land use efficiency
- 11.6 Waste management/recycling

SDG 12: Responsible Consumption and Production

- 12.1 National Action Plan on SCP
- 12.2 Material Footprint/Domestic Material Consumption
- 12.5 National Recycling Rate
- 12.7 Public Procurement Policies

Priorities for the Construction sector

Approach	Measures
Reduce	- Integrated city planning with mixed-use and public transport based infrastructure - Repurpose/retrofitting of existing building stock
Better information	- Data collection patchy for “minor minerals” - Better statistical database and analysis on DMC for UN reporting
Better regulation and enforcement	- Urban planning and building code enforcement - Illegal mining and waste dumping enforcement
Resource efficiency	- Hollow bricks/blocks - Insulated panels
Alternative materials	- Fly ash, marble sludge, slag, etc. - Construction and demolition waste
Innovative policy	- Strategic National Resource Policy - Standards, Eco-labelling and Certification - Public Procurement

Overcoming the cost barrier

Challenges	Solutions
➢ Consumers do not care about resource efficiency ➢ Producers can be risk averse ➢ Newer technologies/approaches are typically more expensive at first	➢ R&D ➢ Standards, Eco-labelling and Public Procurement ➢ Market development through IEC and Capacity Building ➢ Tax and fiscal incentives ➢ Tax negative externalities

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Development Alternatives

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