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

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Construction sector material needs

• India 2\textsuperscript{nd} 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)
Are we running out of resources?

**Absolute scarcity**

(Insufficient quantities exist)

**Relative scarcity**

(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

<table>
<thead>
<tr>
<th>Approach</th>
<th>Measures</th>
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| 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         | - Urban planning and building code enforcement                                                                                           |
| 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

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

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