Alternate Building Materials
- Fly ash bricks

Anil Agarwal Dialogue 2015
12 March 2015
Brick sector status

- Annual Production: ~ 200 billion bricks
- No. of units (estimated): ~ 1,20,000
- Coal consumption: ~ 44 million tonnes
- Soil usage: ~ 600 million tonnes
- Turnover: ~ Rs. 1000 billion
- Employment: ~ 12 million
Brick sector status

Large-Scale Production

Courtesy: Sameer Maithel
Brick sector status

No Bricks

BTK

Clamps

Courtesy: Sameer Maithel
## Brick sector status

<table>
<thead>
<tr>
<th>Category</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO₂ emissions</td>
<td>~ 140 million tonnes</td>
</tr>
<tr>
<td>Black carbon</td>
<td>~ ----</td>
</tr>
<tr>
<td>Land usage</td>
<td>~ 550 sq. km</td>
</tr>
<tr>
<td>Food grain production</td>
<td>~ 1,75,000 tonnes</td>
</tr>
<tr>
<td>Income to Govt.</td>
<td>~ Not determined</td>
</tr>
<tr>
<td>Employment</td>
<td>~ Seasonal</td>
</tr>
</tbody>
</table>
Brick sector status - Resource Use

Agricultural land

Riverbed soil

Development Alternatives
Brick sector status - Resource Use

Agriculture land

River bed soil

Pie chart showing resource use.
Brick sector status - Resource Use

Development Alternatives
Brick sector status - Resource Use
Brick sector status - Resource Use
Brick sector scenario
Alternatives

Brick size and shape

• Use of standard brick size
  • 25% savings in soil

• Use of hollow bricks
  • 25-40% savings in soil

• Use of industrial wastes
  • 5-10% savings in soil
Alternatives

Use of industrial wastes
Alternatives

Use of alternate technologies
FLY ASH
Alternatives

Use of alternate technologies

Development Alternatives
Fly ash status

- Fly ash generation (FY 2013): ~ 163 million tonnes
- Total utilization: ~ 61%
- Utilization in bricks:
  - ~ 4.60 million T (2011)
  - ~ 5.83 million T (2012)
  - ~ 9.98 million T (2013)
- Bricks produced:
  - ~ 3 billion (2011)
  - ~ 4 billion (2012)
  - ~ 6.5 billion (2013)
- Market share: ~ 3.25% (at present)

The Economic Times, 8 March 2014
## Fly ash brick potentials

- **Fly ash generation**: ~163 million tonnes
- **Brick production**: ~110 billion
  ~ 55% of total production
- **Soil saved**: ~300 million tonnes
- **Coal saved**: ~22 million tonnes
- **CO₂ saved**: ~70 million tonnes
- **Enterprises**: ~55,000 (2 million bricks/year)
- **Jobs created**: ~5,50,000 (atleast 300 days)
Fly ash brick equipments

More than 50 equipment manufacturers
  • Across India, Coimbatore, Ahmedabad, New Delhi
  • Imported units of very high capacity
  • Various capacities

• 10 lakhs* ~ Rs. 10 lakhs**
• 20 lakhs ~ Rs. 15 lakhs
• 35 lakhs ~ Rs. 25 lakhs

* Production capacity considering 300 days of production
** Total investment excluding land
Fly ash brick equipments
Fly ash brick equipments
Fly ash brick equipments
Fly ash brick equipments
Alternatives
Thanks