

# Low Carbon Growth Strategies

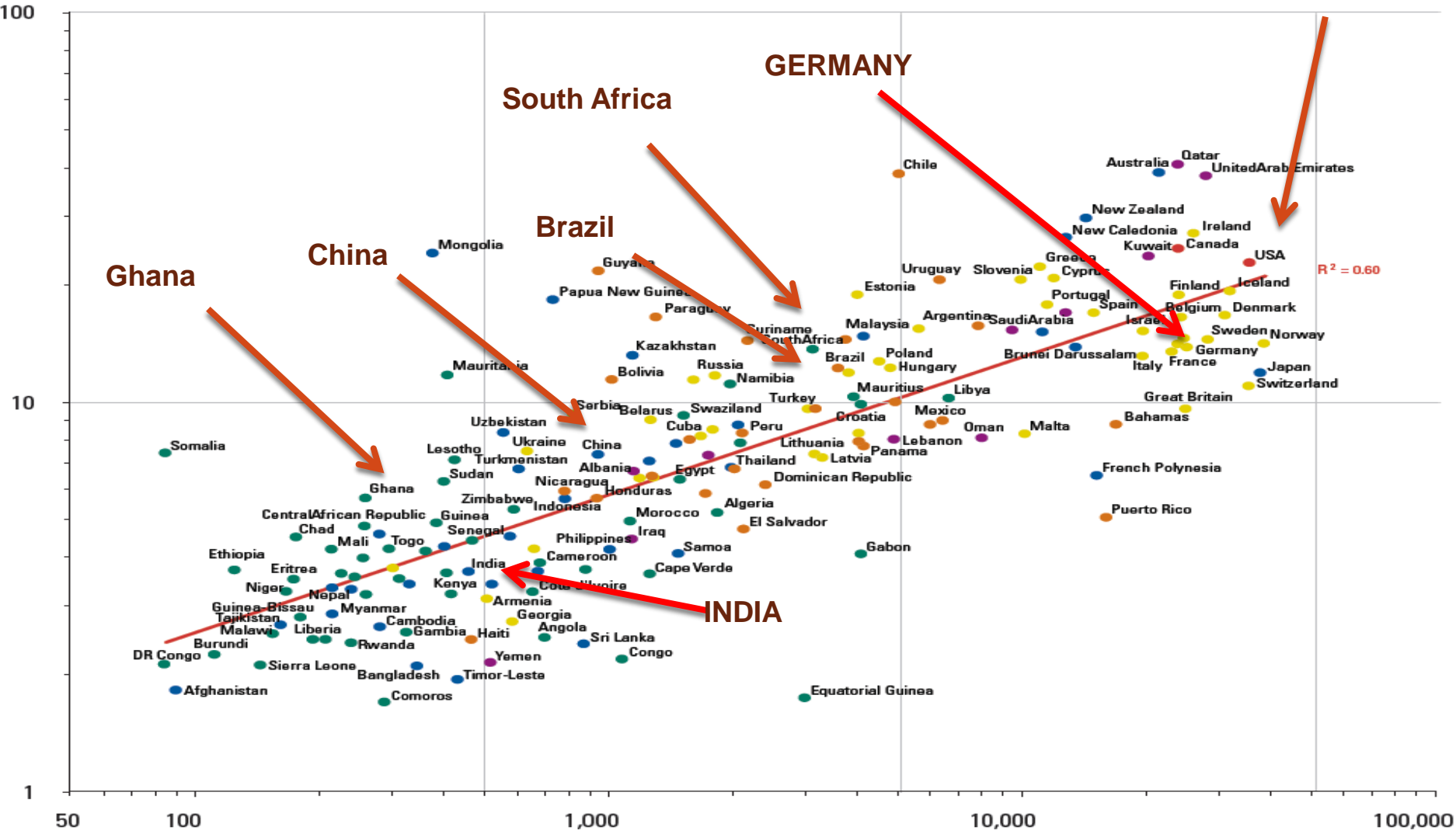
## **Construction & Building Sector**

Kriti Nagrath  
Development Alternatives

# Resource Metabolism Grows with Income

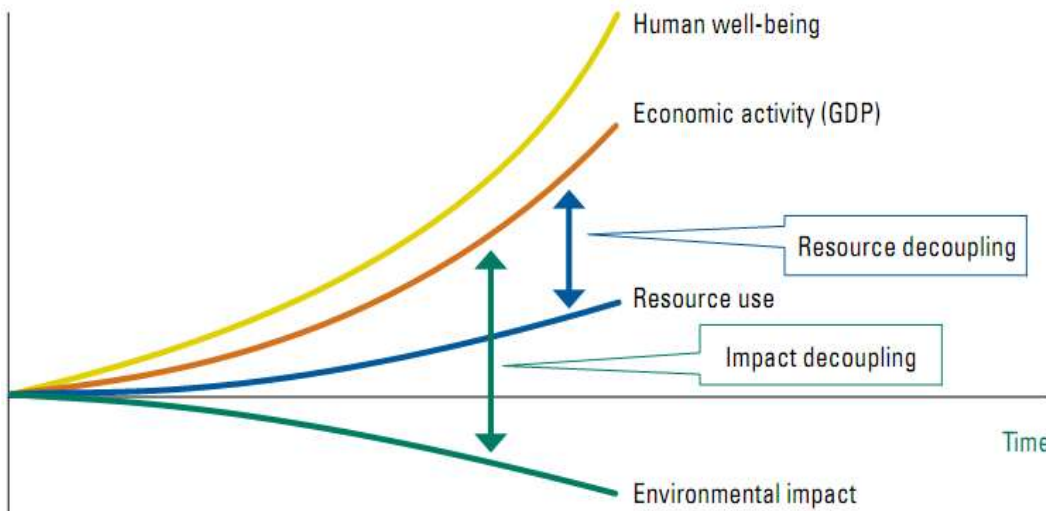
Metabolic rate  
t/cap/yr

USA

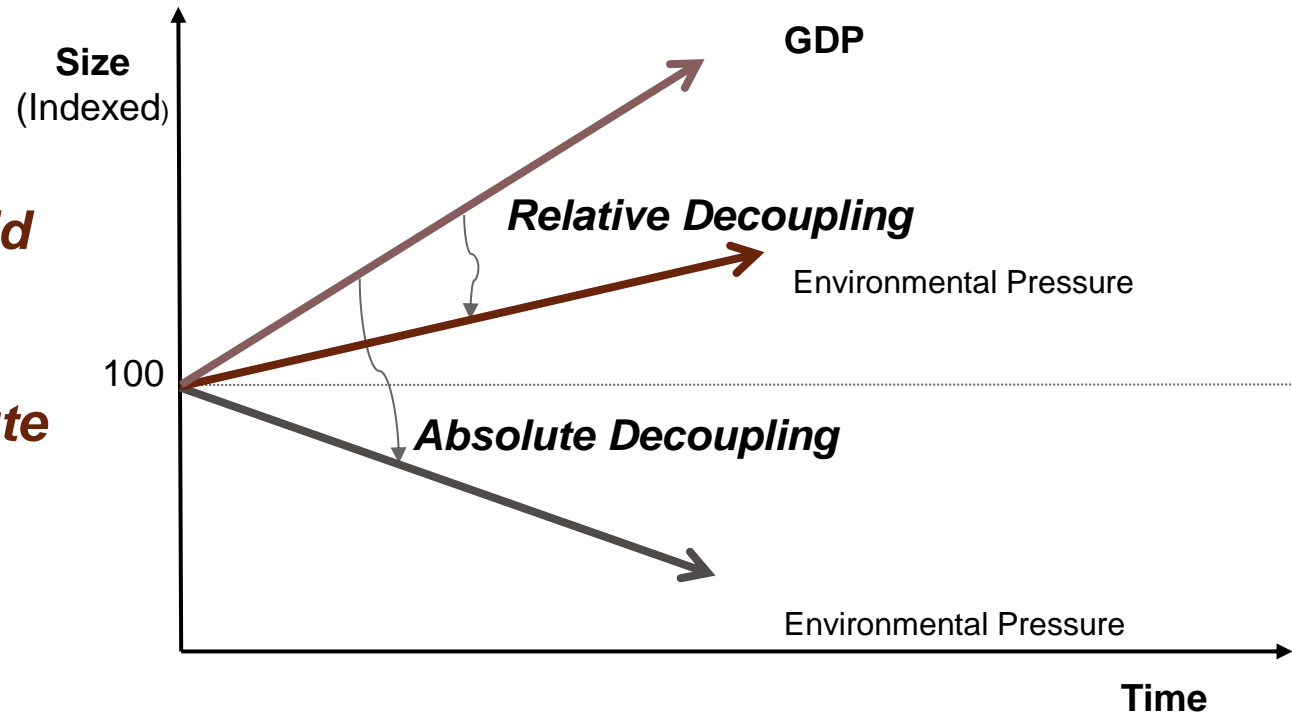


GDP per capita  
Constant year 2000 US\$

## ***Double Decoupling Resource & Impact***



***Global South should aim at Relative Decoupling & the North at Absolute Decoupling***





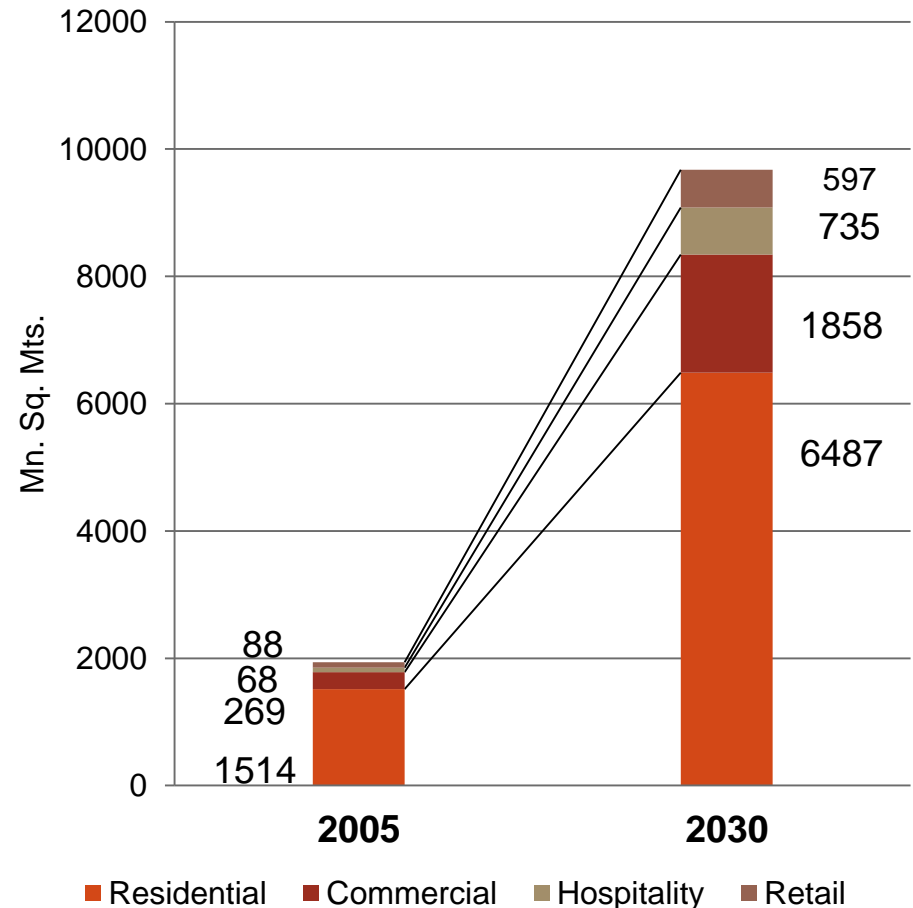
# **INDIA – 3<sup>rd</sup> Largest Construction Sector by 2018**

# Construction in India

## Resource Intensity

- 23.6% National GHG emissions
- 30% electricity consumption growing @8% per annum
- 4x floor area growth with 700% final thermal energy increase
- 5th lowest energy efficiency
- Water, Materials – Steel, Cement, Brick, Wood

## Construction Trends



## Construction demand- India by 2020 (in MT)

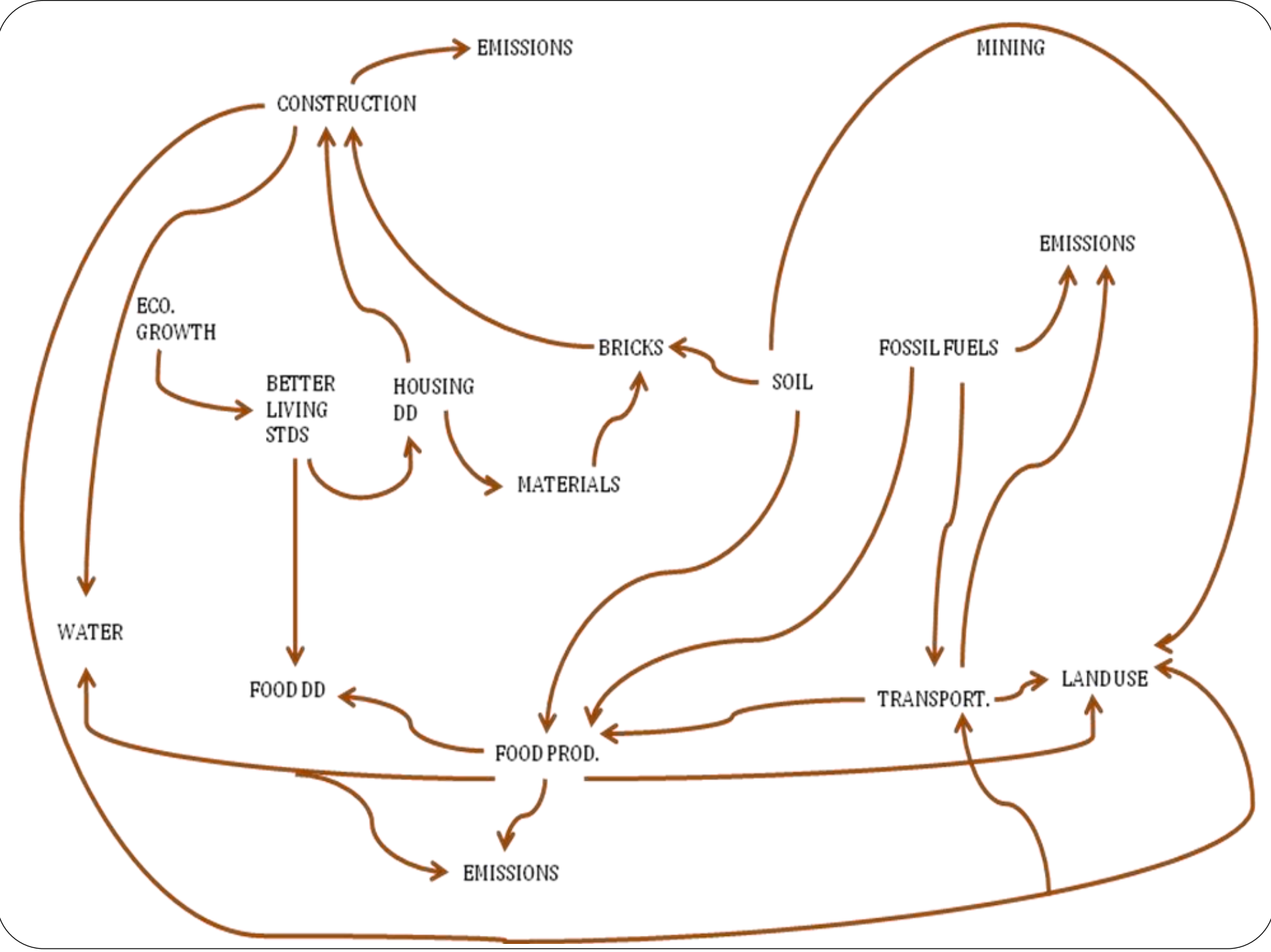
ITEM	2000	2005	2010	2015	2020
<b>Construction aggregates demand</b>	1010	1415	2210	3330	5075
<b>By Type</b>					
<b>Sand</b>	300	400	630	950	1430
<b>Crushed Stone</b>	400	560	880	1310	2050
<b>Gravel</b>	300	405	630	950	1450
<b>Other</b>	10	50	70	120	145
<b>By Market</b>					
<b>Non building Construction</b>	670	965	1510	2300	3520
<b>Nonresidential Building Construction</b>	190	270	430	640	970
<b>Residential Building Construction</b>	150	180	270	390	585

Source: <http://www.aggbusiness.com/sections/market-reports/features/booming-indian-aggregates-market>

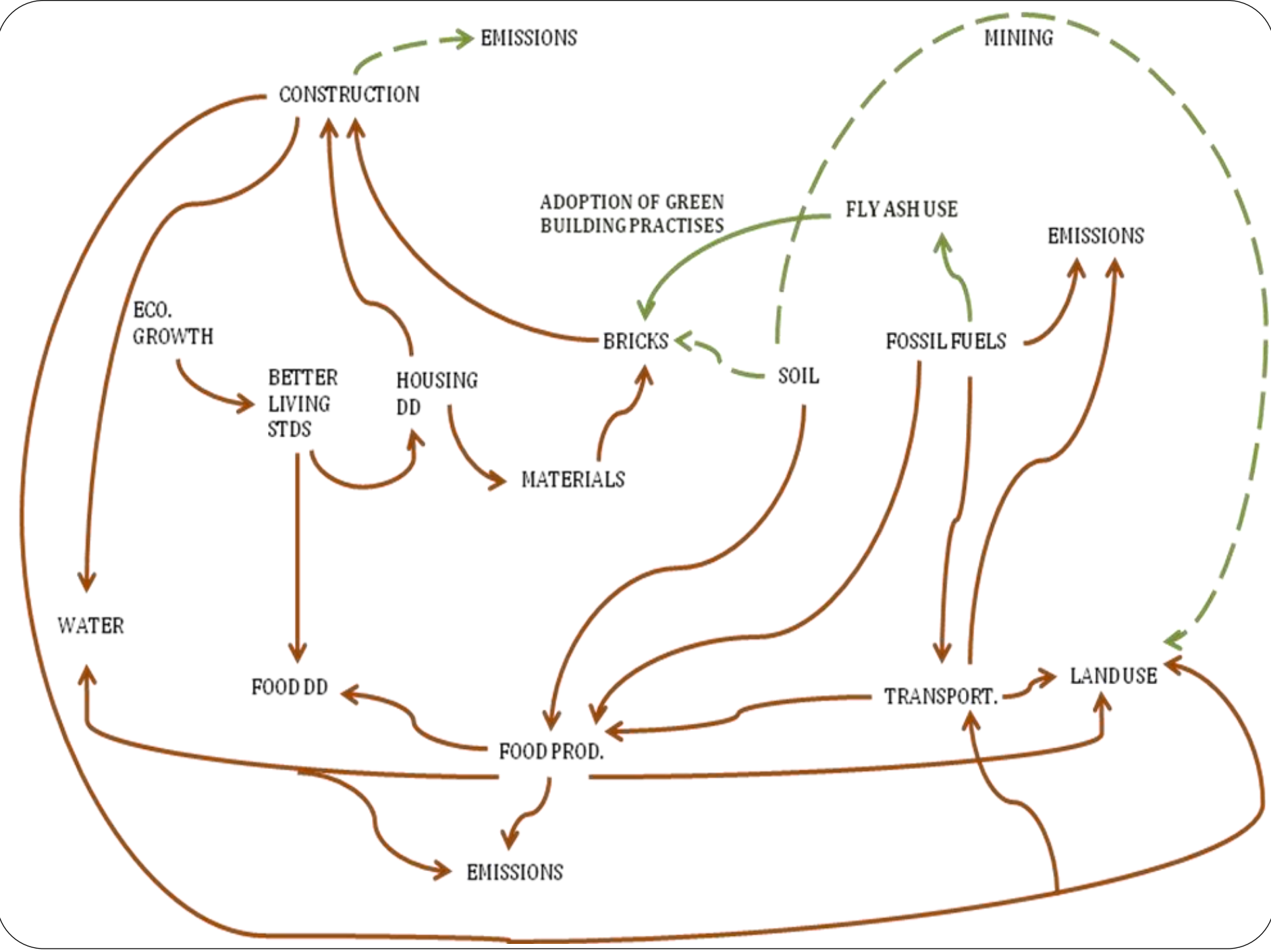
# Just the Brick Sector



“The Indian brick sector can reduce CO<sub>2</sub> emissions by more than **100 million tonnes** by 2020, by achieving **50%** savings in fuel consumption through energy efficient technologies.”







# Next Steps

- Understanding current and forecasted trends for building and construction materials and embodied energy in India
- Building decoupling scenarios to infer the impact on the resource footprint
- Identifying key resource management strategies in the building and construction sector – role of technology and institutions like markets and governments

# Thanks

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