



Greening the MSME sector

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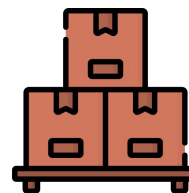
Role of Indian MSMEs

30%

Contribution to
India's GDP

45%

Export products



> 6000

Products

40%

Manufacturing
Output



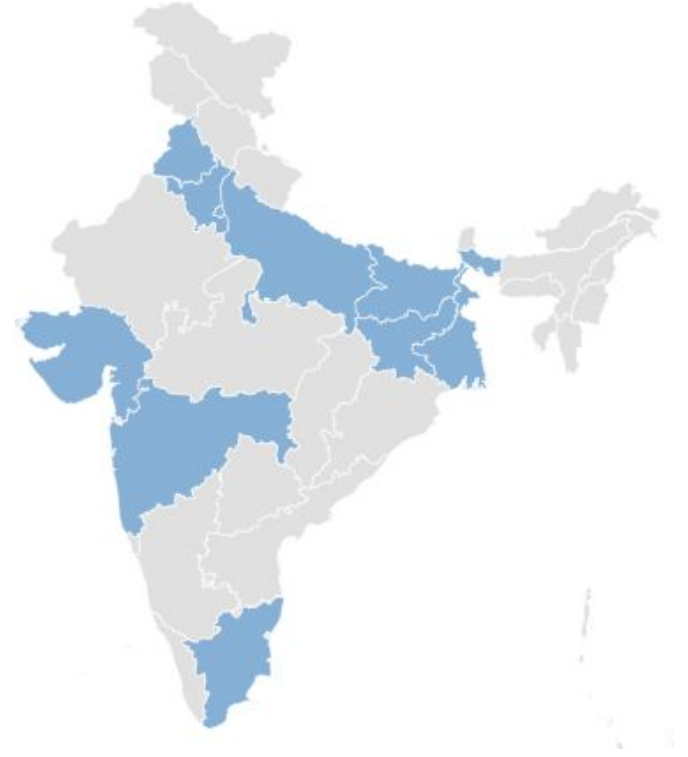
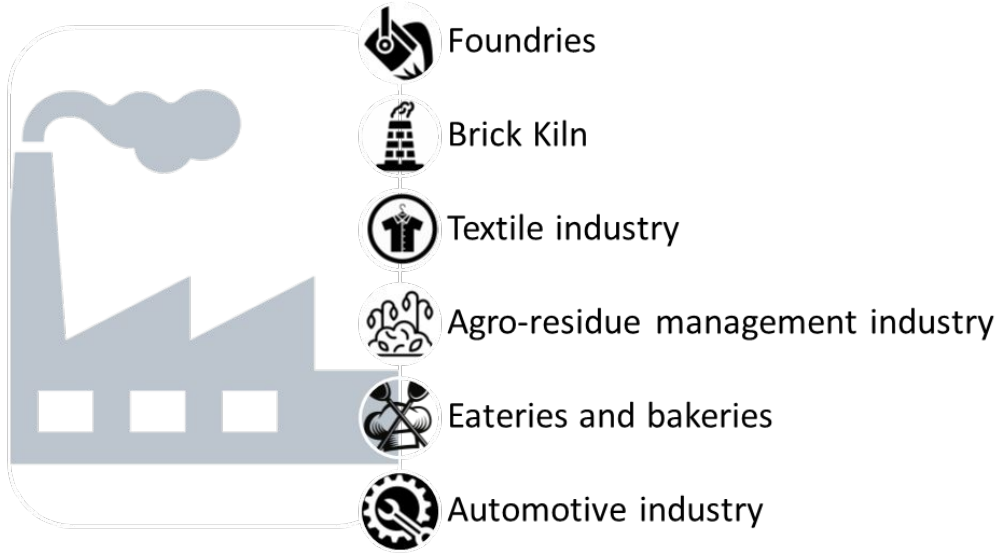
110 million
employees

30-35%

Total PM2.5
emissions

The Indian MSME sector will grow to one trillion USD by 2028.

Sectors discussed



Sector characteristics



Diverse composition

Includes micro, small and medium enterprises with over 90% in the micro segment



Workforce

Informal workforce dominant with lack of skilled workers



Presence

Located in clusters as well as isolated units



Air pollution

Energy related emissions
Process related emissions
Waste management related emission



Outdated technology

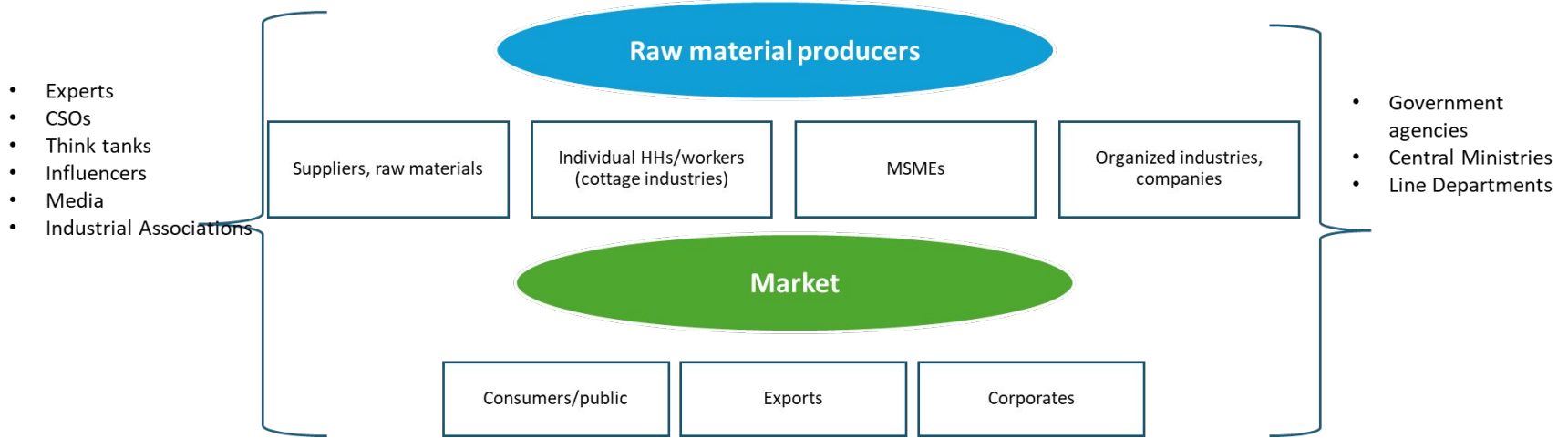
Use of inferior/outdated/less-efficient technologies
Lack of pollution control devices



Emission quantification

Large uncertainty in numbers (activity rate)
Lack of industry specific emission factors

Stakeholder mapping



- Large number of stakeholders
- Understanding interrelationships is important
- Effective collaboration and coordination are crucial

Technical solutions

Improvement in processes

- Improving combustion efficiency
- Improved machinery (including retrofitting)
- Incorporating pollution control devices
- Raw material replacement

Transition to cleaner fuels

- Adoption of cleaner fuels like LPG to reduce emissions and operational costs

Alternative products

- Transition to less polluting products e.g. [e.g. Hollow clay bricks for brickkilns (50% less emission, more insulation, 30-50% reduction in air pollution)]

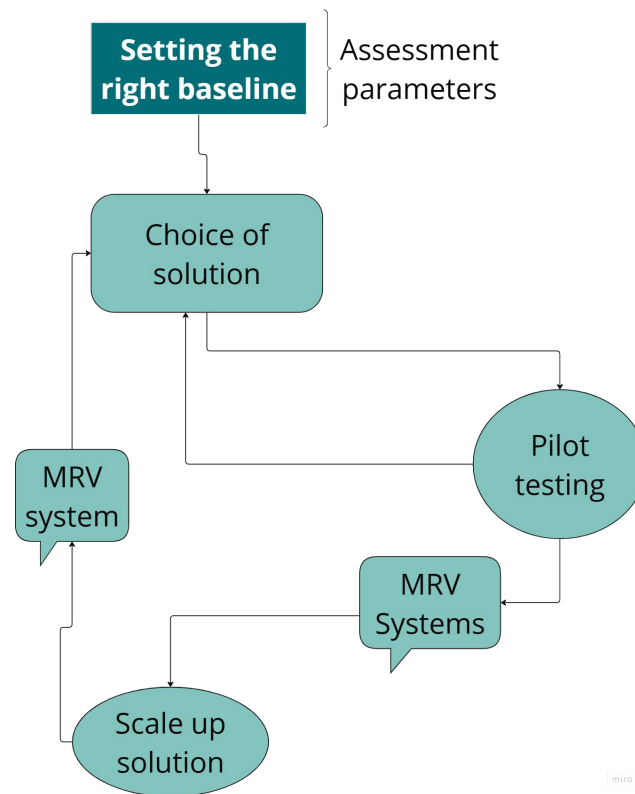
Intervention approach



- Establishing existing conditions by setting right assessment parameters like energy use, cost and emissions metrics

- Piloting clean technologies and processes
- Setting right MRV systems

- Adopting successful intervention at a large scale
- Setting MRV systems for sector-wide impact



Policies to enable cleaner solutions

Design of incentives

Formalisation of informal workforce

Adoption of cleaner technologies

Holistic transformation
(circularity, decarbonisation and air pollution reduction)

Greening the supply chain

Adoption of green procurement

Role of corporate to provide technical and financial support

Capacity building

Training programmes to enhance skills and awareness among MSMEs

Collaborative efforts

Building stakeholder engagement platforms for engaging local, national and global players

Technology transfer,

Sharing of best practices and

Augmenting investment

Conclusion

- Better baseline information from different studies to understand the MSME's ground reality, threats, and opportunities.
- Pilot interventions and scale-up through innovative designs and plans with carefully designed parameters for assessment.
- A robust monitoring and evaluation plan should be developed to ensure monitoring, reporting, and verification of the data and information.
- Supportive policies to provide an enabling environment that is inclusive and takes care of the environment, economic growth, livelihood, and social growth of the sector.



Thank you

Automobile - Subham

Automobile (Cityam) Ancillary

- Location: Jamshedpur (Adityapur)
- Nut & bolts, ball-bearing, 1000's in number
- Furnace - ~~Radiating~~
- House - pollution exposure
- Owners

- Unorganised
- Issues - GST
- Unregistered
- Use of old machinery
- Suicidal

Textile - Pinkam Priyanka

- Spinning, Dying, Bar Knitting, Recyclers, designing
- Air Pollution Process related - Dying & Energy - Boilers - Coal, wood - $PM_{2.5}$ - Textile waste - Burning - $PM_{2.5}$
- Owners - 70% (unregistered) non-organized - 30% (Registered)
- Users - All India

Seasonal contribution (pivouch Bhargava)

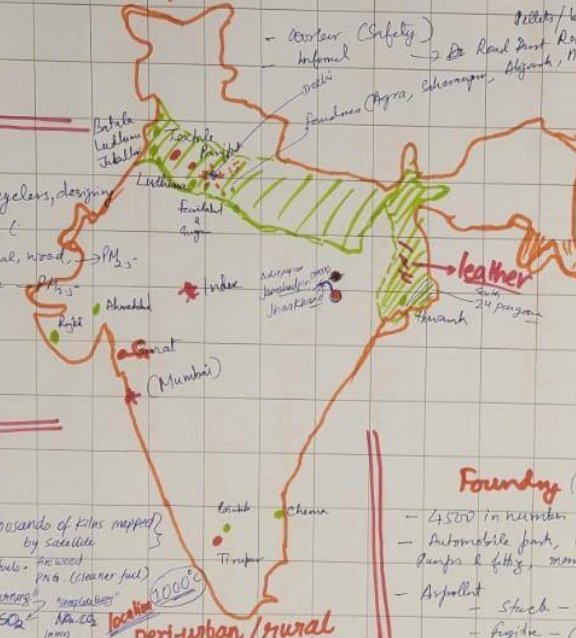
BRICK KILNS

- Thousands of Kilns mapped by satellite
- Primarily consumes local, other fuels - firewood, pira (cleaner fuel)
- Partial burning - $PM_{2.5}$
- Pollutants include - BC, CO, SO₂, $PM_{2.5}$

peri-urban / rural

Agriculture Industries

- Electricity generation (Coal used) → ~~Environment~~ Industry
- Agri produce
- 72 lakh acres (Paddy) - 1 acre - 2.5 tm/residue
- 5 lakh acre () → Bio-gas → electricity (Punjab) bio-CNG
- 1000+ (Safety) → Delhi, Rajasthan, Madhya Pradesh, Uttar Pradesh, Bihar, West Bengal, Assam, Odisha, Jharkhand



Leather Industry

(1)

Bakeries & Eateries

- Mumbai - 1500 bakeries - 50% unregistered → 3% air pollution
- Indore

- Fuel - (Wood, Diesel), Electricity, LPG → Indore
- Mumbai
- Owners - Very Congested / NO emission controls

Foundry (Shreyas)

- 4500 in number
- Automobile parts, wheels, machining parts, pumps & fittings, machine tools, agricultural implements
- Air pollutant - Stack - Coal burning & coke combustion - PCD (which is not working) - fugitive - (Raw material, handling & solvent) - sand