PROACTIVE ROLE OF SPCBs: BIHAR EXAMPLE

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20 December 2017
**Bihar Brick Industry**

- Number of Brick kilns: 6,000 - 8,000
- Annual Production: 1,800 - 2,000 crore bricks
  - > 5,000 crore bricks per year by 2030
- Coal Consumption: 30-35 lakh ton per year
- Annual Turnover: Rs 10,000 crore
- Employing 10-15 lakh persons
Fired-Clay Bricks Production in Bihar
KEY INITIATIVES
2012

- Awareness Workshop on “Clean Brick Production Technology” chaired by the Environment Minister
2013

- 2-day Residential training program for a delegation of BSPCB officials and BKOs of Bihar headed by MS, BSPCB
2013 Training Program
2013 TRAINING PROGRAM
2012-15

• Constitution of inter-departmental task force for “Accelerating cleaner production systems in building material sector”
  – promotion of adoption of clean and energy efficient technologies and practices for brick production and reducing agriculture top soil loss

• Organisation of several awareness generation workshops and seminars
2016-17: BSPCB Directive for Cleaner Brick Production in Patna

• **February 2016**: BSPCB order to brick kilns in 5 blocks around Patna (200 in numbers) to shift to cleaner brick kiln technologies (zigzag, VSBK, …) by 01 Sep 2016.

• **March 2016 to May 2017**
  – Technical support programme by BSPCB & GKSPL: Awareness & technical workshops; construction manual; camps on kiln construction, operation and troubleshooting
  – > 50% kilns (more than 100 kilns) shifted to cleaner technology (natural or induced draft zigzag) during the 1 year
  – Strict action were taken on most of the kilns who tried to operate without shifting to cleaner technology
2016-17: Glimpses
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Order extended to cover the entire state of Bihar
- Around 7000 kilns to shift to cleaner technologies by August 2018

Awareness workshops organised by BSPCB & GKSPL in all divisional headquarters
- 9 places;
- attended by >2000 brick makers

- Positive response to the approach (regulation + awareness + technical support) – Replication potential in other states
- Able to convince brick makers that shifting to zigzag kilns is a win-win for them as well
  - 15-20% reduction in fuel;
  - Improvement in brick quality > 80% class-I bricks;
  - Significant reduction in SPM emissions
- Almost 70% of the shifted zigzag kilns have average or better performance; 30% zigzag below average performance
  - Reasons for poor performance
    - Poor construction due to shortage of trained contractors/ cost cutting
    - Shortage of good quality local equipment suppliers
    - Shortage of skilled workers to operate
  - Other issues
    - Financing for those who have not shifted
    - Monitoring of performance of kilns after shifting

EFFORTS ARE UNDERWAY (2017-18) TO ADDRESS THESE ISSUES
Shifting from FCBTK

2017-2018

Zigzag firing & Solid Bricks

• Shifting from FCBTK to Zigzag
• Other processes remain same

Zigzag firing, mixing of waste, Perforated Bricks

• Machines for moulding
• Drying in shade

Tunnel Kiln & Hollow Block

• Use of extruders for moulding
• Use of artificial Dryers
• Fully mechanized process

Baseline (2015) - Fixed Chimney Bulls
Trench Kiln & Solid Bricks

Artificial Dryer
LONG PROCESS (2018-2025) TO TRANSFORMATION

Baseline – Fixed
Chimney Bulls
Trench Kiln & Solid Bricks

2018
Zigzag firing & Solid Bricks

• Shifting from FCBTK to Zigzag
• Other processes remain same

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• Machines for mixing and moulding
• Drying in shade

Tunnel Kiln & Hollow Block

• Machines for mixing and moulding
• Artificial Dryers
• Fully mechanized process

Artificial Dryer
**INITIAL RESPONSE HAS BEEN POSITIVE**

... *NEED MORE PARTNERS, RESOURCES, COMPREHENSIVE APPROACH TO PUSH THE TRANSFORMATION*....
THANK YOU !!!