

PROACTIVE ROLE OF SPCBs: BIHAR EXAMPLE

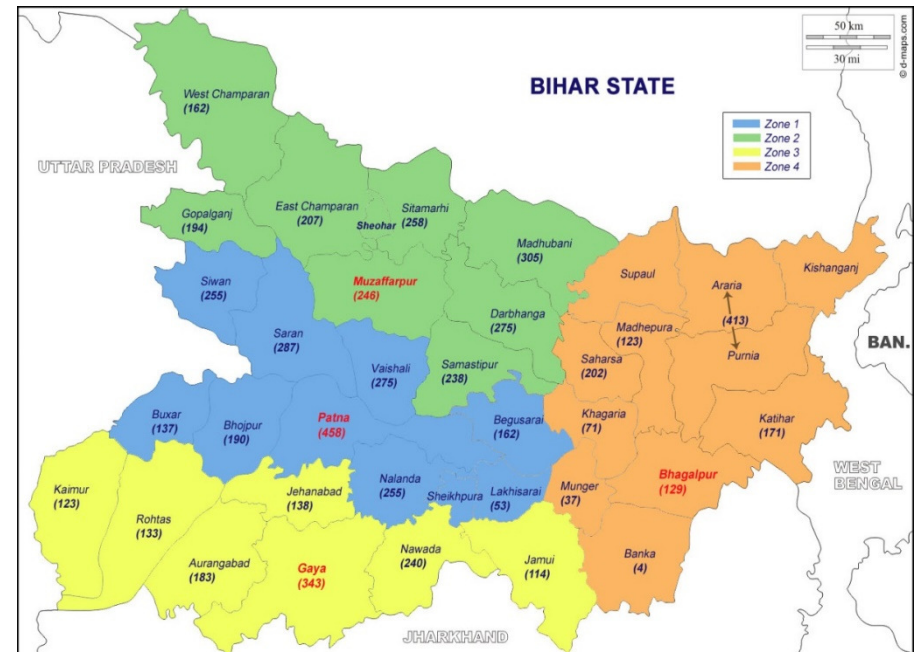


Greentech Knowledge
Solutions Pvt. Ltd.

Sonal Kumar
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 BKO's 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



2016-17: GLIMPSES



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2016-17: GLIMPSES



SEPTEMBER/OCTOBER 2017



- 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

LEARNINGS (2016 & 2017)



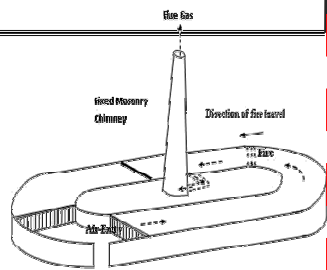
- Positive response to the approach (regulation + awareness + technical support) – Replication potential in other states
- Able to convince brick makers that shifting to zigzag kilns is a win-win for them as well
 - 15-20% reduction in fuel;
 - Improvement in brick quality > 80% class-I bricks;
 - significant 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

TECHNOLOGICAL LADDER FOR CLEANER CLAY BRICK PRODUCTION

**Baseline
(2015) –**

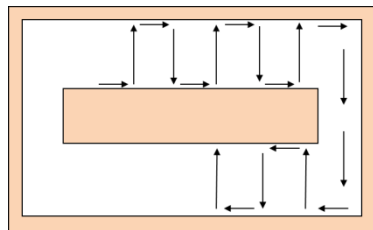
**Fixed
Chimney Bulls
Trench Kiln &
Solid Bricks**



2017- 2018

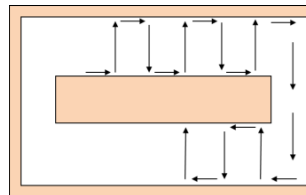
**Zigzag firing &
Solid Bricks**

- Shifting from FCBTK to Zigzag
- Other processes remain same



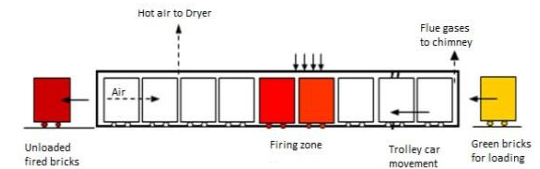
**Zigzag firing,
mixing of waste,
Perforated Bricks**

- Machines for moulding
- Drying in shade



**Tunnel Kiln &
Hollow Block**

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

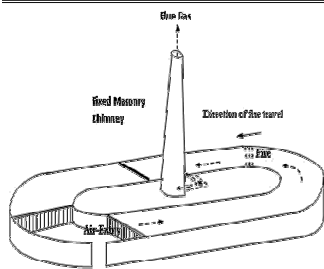


Artificial Dryer



LONG PROCESS (2018-2025) TO TRANSFORMATION

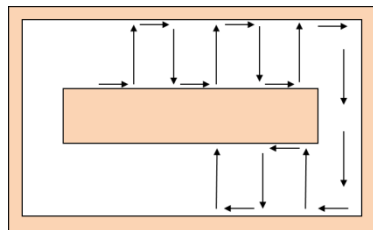
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2018

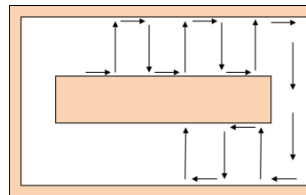
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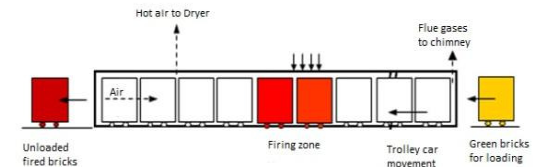
**Zigzag firing,
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- Machines for mixing and moulding
- Drying in shade



**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 !!!

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