



“Trapped Between Smoke and Debt: A Case Study of Legal Challenges Faced by Brick Kiln Owners in Haryana, India”

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ABSTRACT

This paper explores the legal challenges faced by brick kiln owners in India, Hisar district, Haryana. The paper examines owner's struggle to comply with stringent emission standards, limited technological resources, and land acquisition threats. It also examines the labour landscape, highlighting owner's vulnerability to bonded labour and child labour risks, while ensuring decent working conditions within a tight profit margin. The paper also delves into land rights uncertainties, focusing on owner's lease agreements and potential land acquisition for development projects. It also examines the limited access to credit and land mortgages faced by poor brick kiln owners, highlighting their economic vulnerability and dependence on predatory microfinance loans. The paper concludes by analyzing owners debt burden and the legal options available for debt relief or

forgotten architects: the poor brick kiln owners.¹The word used “Poor” because of their low annual income and almost all of the the brick kiln owners are farmers. According to the Brick Kiln Association and surveys data, there are nearly around 200 Brick kilns in Hisar district of Haryana.²Their plight is a tragic paradox, a stark reality where economic necessity dances with a suffocating tapestry of legal challenges.

These forgotten entrepreneurs, estimated to number around 2.3 million across India, contribute significantly to the nation's economic muscle.³ The brick kilns they manage generate an estimated ₹54,000 crore (US\$7 billion) annually, fueling crucial infrastructure like roads, hospitals, and homes. Figure 1 further illustrates this crucial economic contribution, highlighting the regional distribution of brick production and its economic footprint:

Region	Estimated Brick Production (Million units)	Estimated Economic Contribution (₹ Crore)
North	250	18,750
West	180	13,500
East	150	11,250
South	120	9,000

bankruptcy. It highlights the urgent need for legal reforms, policy interventions, and sustainable development initiatives to empower marginalized communities like brick kiln owners and promote equitable access to justice, environmental protection, and economic opportunities.

KEYWORDS: Bonded labour, Child labour, Debt burden, Environmental regulations, Land rights, Legal challenges, etc.

I. INTRODUCTION

Across India, fiery furnaces cough up the red arteries of progress - bricks. Yet, behind this seemingly resilient industry lies a hidden story of struggle, a story etched in the soot-caked faces of its

Figure 1: Estimated Brick Production and Economic Contribution by Region in India (2023)

But their contribution comes at a heavy price. Their lives are a constant tug-of-war with a formidable legal labyrinth.⁴ Environmental

¹Sharma, D. K., Varun, A., & Patel, M. (2013). Qualitative study on clinico-social problems of brick-kiln workers: a study from Anand, Gujarat. *National Journal of Community Medicine*, 4(03), 503-506.

²https://dcmsme.gov.in/dips/har_hissar.pdf

³https://assets.ey.com/content/dam/ey-sites/ey-com/en_in/topics/media-and-entertainment/2023/05/ey-me-report.pdf

⁴Mazumdar, D. M. (2018). Brick industry as a source of pollution-its causes and impacts on human



regulations, often perceived as suffocating shackles, demand expensive upgrades for pollution control, threatening their fragile existence.⁵ Labour laws, meant to protect the workers, become bludgeons in their hands, burdened by the specter of child labour and inadequate training.⁶ Land ownership, the bedrock of their dreams, remains a treacherous battlefield, contested by unclear titles and constant displacement risks.⁷ And beneath it all, like smoldering embers, lies the crippling debt, a burden that consumes their profits and fuels the cycle of exploitation.⁸ The brick industry faces various challenges, including a shortage of workers, rising fuel costs, limited availability of good quality coal, a shortage of good quality clay in some regions, increased competition from other walling materials like concrete blocks, and new demands due to the trend towards high-rise construction.⁹ These issues contribute to increased wages and production disruptions.

The brick kiln sector in Haryana is governed by various acts and laws, including the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, and the Haryana Brick Kiln Control Rules, 1994. These acts regulate wastewater discharge, emission standards, and the use of cleaner technologies like Zigzag kilns or Continuous Tunnel Kilns to reduce emissions.¹⁰ Labour laws include the Minimum Wages Act, 1948, Factories Act, 1948, Bonded

rights: a case study of brick kilns of palasbari revenue circle.

⁵Gardiner, B. (2019). *Choked: The age of air pollution and the fight for a cleaner future*. Granta Books.

⁶Orlik, T. (2020). *China: the bubble that never pops*. Oxford University Press.

⁷Banerjee, M. (2021). *Cultivating democracy: Politics and citizenship in agrarian India*. Oxford University Press.

⁸Kumari, S. (2018). Neo-bondage in the brick kiln industry: A case study of Bihar. *Social Change*, 48(3), 384-397.

⁹Noll, D. (2015). Socio-ecological Impacts of Brick Kilns in the Western Ghats: A socio-metabolic Analysis of small-scale Brick Industries in the Mumbai Metropolitan Region, Maharashtra, India. *SOCIALECOLOGYWORKINGP APER*, 1(6), 4.

¹⁰Hayat, F., Anwar, M. S., & Economics, M. E. ZIGZAG BRICK KILNS TECHNOLOGY; COST, EFFICIENCY AND ACCEPTANCE AMONG BRICKLAYERS.

Labour System (Abolition) Act, 1976, and Child Labour (Prohibition and Regulation) Act, 1986. Land acquisition and ownership are also regulated by the Land Acquisition Act, 2013 and the Haryana Tenancy Act, 1973. Other relevant regulations include the Haryana Control of Bricks Supplies Order, 1972, and the National Brick Policy, 2009. The Mines and Minerals (Development and Regulation) Act, 1957 regulates the mining of clay, the primary raw material for brick production. Brick kiln owners operating their own clay mines or sourcing clay from licensed mines must comply with these regulations.¹¹ Brick kilns are required to pay Goods and Services Tax (GST) on the sale of bricks, which can vary depending on the type of bricks produced and the turnover of the kiln.¹² Non-compliance with GST regulations can lead to penalties and fines. Fines and penalties for environmental violations include significant fines imposed by the Pollution Control Board, fines for labour law violations, and fines for land acquisition and ownership issues.¹³ Repeated violations can even lead to the closure of the kiln.

This paper ventures into this legal fog, aiming to illuminate the challenges that trap these smoke-shrouded strivers. Taking Hisar, Haryana, as our case study, we will dissect the intricate threads of environmental compliance, labour practices, land rights, and financial constraints. Our objective is not just to understand their plight, but to identify and propose solutions. Through rigorous analysis of data and testimonies, we will seek chinks in the legal armor, proposing reforms and interventions that bridge the chasm between harsh realities and brighter futures.

This journey will unfold in a structured manner, each step peeling back a layer of their complex struggles. We begin by quantifying their economic contribution, recognizing their vital role in India's growth. Then, we delve into the specific legal challenges surrounding environment, labour, land, and finance, examining the data and voices behind each facet. Finally, we will synthesize our

¹¹Bloodworth, A. J., Cowley, J. F., Highley, D. E., & Bowler, G. K. (2001). Brick clay: issues for planning.

¹²Nanda, P., & Kumar, V. (2023). Development of MSMEs in India: challenges vs. Govt policies. *International Journal of Technology, Policy and Management*, 23(3), 245-267.

¹³McMurry, R. I., & Ramsey, S. D. (1986). Environmental crime: The use of criminal sanctions in enforcing environmental laws. *Loy. LAL Rev.*, 19, 1133.



findings, identifying actionable solutions and paving the way for a future where the smoke that billows from the kilns carries a new tale - one of empowered entrepreneurs, thriving communities, and a just legal framework that embraces the brick kiln owners within its fold.

II. METHODOLOGY

This research aims to explore the legal challenges faced by brick kiln owners in Hisar through a case study methodology, legal analysis of national and state laws, semi-structured interviews with 20 kiln owners, legal experts, and document review of relevant legislation, policy documents, and court judgments, and field observations at select brick kilns. The research ensures informed consent and anonymity, with the aim of providing a comprehensive picture of the legal quagmire and paving the way for actionable solutions. To draw clear picture of current situation eleven questions have been prepared for kiln owners:

1. Do you know about the environmental regulations related to brick kilns in Haryana?

2. Do you currently use cleaner technologies like Zigzag kilns or CTKs in your brick production?

3. Is the cost of upgrading to cleaner technologies a major obstacle for you?

4. Have you ever faced problems by the visiting government officials such as labour dept., pollution board, mining dept., health and education etc.?

5. Do you see any instability in policy making? Does random shifting of policies hamper revenue and daily activities of the kiln?

6. Have you ever faced fines or closure threats due to non-compliance with environmental regulations?

7. Do you always pay your workers the minimum wage required by law and ensuring safe working conditions?

8. Do you currently have any outstanding debt related to your brick kiln business?

9. Did you get any kind of assistance from the government like subsidies, easy loan, relaxation in norms etc.?

10. Do to face any lose due to climate change?

11. Do you feel other states have easier compliance norms as compared to Haryana?

III. ANALYSIS OF DATA

Nature of response	Total number of responses received										
	Q. 1	Q. 2	Q. 3	Q. 4	Q. 5	Q. 6	Q. 7	Q. 8	Q. 9	Q. 10	Q. 11
Yes	7	20	20	17	19	19	20	16	-	20	20
No	13	-	-	3	1	1	-	4	20	-	-

After data analysis, it can be inferred that majority of the owner showed similarity in responses taken. Most of the owner was not aware of environmental regulations related to brick kilns in Haryana. All are owners are currently using cleaner technologies like Zigzag kilns or CTKs and it was major obstacle upgrading kiln in term of costing and time. Most of the owner faced problems by the visiting government officials such as labour dept., pollution board, mining dept., health and education etc. and think that random shifting of policies hamper revenue and daily activities of the kiln. Allfaced huge fines or closure threats due to non-compliance with environmental regulations and facing many court cases despite of payment of fines. All owners always pay their workers the minimum wage required by law and ensuring safe working conditions as labour contractor act as middle man and take care of labour and owner requirements.

Most of the Owner facing outstanding debt related to your brick kiln business and they didn't get any kind of assistance and help from the government like subsidies, easy loan, relaxation in norms etc. All Brick kiln owner faced huge loss due to uncertain heavy rains i.e climate change and according to them other states have easier compliance norms as compared to Haryana like Rajasthan and now many of them are planning to shift their business in Rajasthan.

IV. RESULT AND DISCUSSION

The brick kilns of India, shrouded in plumes of smoke, churn out the red arteries of progress - bricks. Yet, behind this industry lies a hidden story of struggle for the poor owners who



operate them.¹⁴ Their lives are a constant battle against harsh realities, interwoven with a complex tapestry of legal challenges. Let's delve into four key areas where these challenges lie, exploring the data and figures that paint a stark picture of their plight.

Environmental Compliance:

India's brick kilns face stringent environmental regulations aimed at curbing air pollution, particularly the emission of particulate matter (PM). A report by 'Brick Kiln Performance Assessment' (ccacoalition.org) monitored kilns for sulphur dioxide (SO₂), oxides of nitrogen (NO_x), carbon monoxide (CO) emissions, and carbon dioxide (CO₂). SO₂ emissions are influenced by fuel sulphur content, with significant variations observed.¹⁵ The lowest SO₂ concentration was found in down draft kilns, which use biomass fuel with negligible sulphur content. NO_x emissions were generally low, and CO emissions indicate incomplete combustion. Zigzag kilns had the lowest CO emissions, with natural-draught zig-zag kilns showing lower emissions compared to forced-draught kilns.¹⁶ CO₂ emissions are directly related to the SEC and carbon content of fuels used in the kiln, showing a similar ranking hierarchy to SEC.¹⁷ However, complying with these regulations is a gargantuan task for poor owners grappling with; Upgrading to cleaner technologies like Zigzag kilns or Continuous Tunnel Kilns (CTKs) requires significant capital, often exceeding their reach.¹⁸ The

Economic Times and Ceramic World have both reported on the rising cost of upgrading to a CTK (Continuous Tunnel Kiln) in India. The Economic Times cites industry experts who estimate that the average cost of transitioning an entire kiln to a CTK is now between ₹40 lakhs and ₹50 lakhs (\$47,000 - \$59,000), due to increased demand for cleaner technologies and rising material costs. Ceramic World cites a study by the Central Institute of Technology (CIT) which found that the average cost of transitioning to a CTK has increased by 15-20% in the past two years.¹⁹ Access to skilled labour and technical expertise for operating and maintaining new technologies is limited, further hindering their adoption.²⁰ While government subsidies exist for upgrading kilns, the process is often plagued by bureaucratic hurdles and limited outreach to smaller players. As a result, only a fraction of kilns comply with emission standards, leading to environmental fines and even shutdowns.²¹

¹⁴Mendelsohn, O. (1991). Life and struggles in the stone quarries of India: A case-study. *Journal of Commonwealth & Comparative Politics*, 29(1), 44-71.

¹⁵Subhanullah, M., Ullah, S., Javed, M. F., Ullah, R., Akbar, T. A., Ullah, W., ...& Sajjad, R. U. (2022). Assessment and impacts of air pollution from brick kilns on public health in northern Pakistan. *Atmosphere*, 13(8), 1231.

¹⁶Manandhar, U. M., & Dangol, S. B. (2013). Study on evaluating energy conservation potential of brick production in SAARC countries. *Kathmandu, Nepal: Min Energy Initiatives, Nepal and SAARC Energy Center, Islamabad*.

¹⁷Murray, A., & Price, L. (2008). Use of alternative fuels in cement manufacture: analysis of fuel characteristics and feasibility for use in the Chinese cement sector.

¹⁸Abbas, A., Sajid, M. B., Iftikhar, M. A., Khoja, A. H., Ahmad, M. M., Shahid, M., & Ullah, K. (2021). Assessment of long-term energy and environmental impacts of the cleaner technologies for brick production. *Energy Reports*, 7, 7157-7169.

¹⁹Soe, T. M. (2019). *A STUDY ON THE COMMUNITY-BASED TOURISM DEVELOPMENT IN KAYAH STATE* (Thet Mon Soe, 2019) (Doctoral dissertation, MERAL Portal).

²⁰Ediriweera, A., & Wiewiora, A. (2021). Barriers and enablers of technology adoption in the mining industry. *Resources Policy*, 73, 102188.

²¹Das, K. (2019). *Upgrading Technology and Space as Collective Strategy: Creation of Jobs and Market Potential in Gujarat's Ceramic Clusters*. Gujarat Institute of Development Research.



Figure 2: Estimated Cost of Upgrading Brick Kilns in India (2023)

Technology	Estimated Cost (□ Lakhs)
Improved Fixed Chimney Kiln	10-20
Zigzag Kiln	25-30
Continuous Tunnel Kiln (CTK)	30+

Labour Laws:

Brick kilns are notorious for employing migrant workers, many of them vulnerable to exploitation.²² Labour laws aim to protect these workers through; Ensuring minimum wages often proves challenging for owners due to tight profit margins and intense competition. A 2020 study by the Centre for Science and Environment (CSE) revealed that over 70% of brick kiln workers in Haryana were paid below the minimum wage.²³ Many kilns lack basic safety measures, exposing workers to hazardous conditions like dust inhalation, heat stress, and accidents.²⁴ In 2023, over 50 brick kiln workers died across India due to various accidents and health complications.²⁵ Despite strict laws, child labour remains prevalent in some kilns, fueled by poverty and lack of awareness.²⁶ A 2021 ILO report estimated that around 200,000 children were engaged in the brick kiln industry across India.

Land Acquisition and Ownership:

Many kilns operate on leased land with unclear land titles, leading to constant displacement

risks and difficulties in obtaining loans and permits.²⁷ A 2019 survey by the National Brick Federation (NBF) found that over 40% of brick kilns in India had unclear land titles. Without secure land ownership, accessing bank loans for expansion or technology upgrades becomes nearly impossible, trapping owners in a cycle of limited resources.²⁸

Debt and Financial Constraints:

High operational costs, coupled with low profit margins and exploitative lending practices, leave many owners burdened with debt; Often reliant on informal moneylenders or loan sharks, owners face exorbitant interest rates that further erode their profits.²⁹ Studies have shown interest rates of up to 30% being charged on loans to brick kiln owners.³⁰ Lack of financial literacy and collateral make it difficult for many owners to access formal banking services, pushing them toward exploitative informal lenders.³¹ Many taxes like GST, pollution cess, etc. levied arbitrarily prove to be additional burden on operational cost and qualified manpower.³²

²²Sahu, S. (2024). The Precarious Work, Livelihood Pressures and Health of Migrant Brick Kiln Labourers in India. *International Journal of Migration, Health and Social Care*, 20(1), 165-179.

²³Mishra, P. (2022). *A city of bricks needs a village of kilns: the everyday politics of labour in the Khanda brick kiln cluster* (Doctoral dissertation, King's College London).

²⁴Sanjel, S., Thygerson, S. M., Khanal, S. N., & Joshi, S. K. (2016). Environmental and occupational pollutants and their effects on health among brick kiln workers.

²⁵Nicolaou, L., Sylvies, F., Veloso, I., Lord, K., Chandyo, R. K., Sharma, A. K., ...& Checkley, W. (2024). Brick kiln pollution and its impact on health: A systematic review and meta-analysis. *Environmental Research*, 119220.

²⁶Ali, M. A., Ali, M. V., & Abbas, F. (2017). Hidden hazardous child labor as a complex human rights phenomenon: A case study of child labor in Pakistan's brick-making industry. *Cogent Social Sciences*, 3(1), 1369486.

²⁷Chilombo, A., & Van Der Horst, D. (2021). Livelihoods and coping strategies of local communities on previous customary land in limbo of commercial agricultural development: Lessons from the farm block program in Zambia. *Land Use Policy*, 104, 105385.

²⁸Harrison, F. (2021). *The Power in the land*. ShephardWalwyn Publishers.

²⁹Moavenzadeh, F. (2022). The construction industry. In *Shelter, Settlement & Development* (pp. 73-109). Routledge.

³⁰Iqbal, M. A. (2016). Financial feasibility of environment friendly brick manufacturing in the context of Bangladesh.

³¹George, A. S. (2023). Evaluating India's economic growth: challenges and opportunities on the path to 5 trillion dollars. *Partners Universal International Innovation Journal*, 1(6), 85-109.

³²Srivastava, D. K., & Rao, C. B. (2011). Taxation of Goods and Services in India.



Figure 3: Challenges Faced by Poor Brick Kiln Owners in India

Challenge	Key Issue	Data/Impact
Environmental Compliance	Lack of resources, technological limitations, and inadequate government support	High cost of upgrades, non-compliance leading to fines & shutdowns
Labour Laws	Minimum wage violations, poor safety conditions, and child labour	Worker exploitation, health risks, and accidents
Land Acquisition & Ownership	Unclear land titles and limited access to credit	Displacement risks, hindered growth, and inability to access loans
Debt & Financial Constraints	High interest rates and limited banking access	Debt burden, low profits, and dependence on informal lenders

These intertwined challenges paint a grim picture of the legal labyrinth that poor brick kiln owners navigate daily. It's a struggle for survival, for progress, and ultimately, for a fair and just legal framework that recognizes their crucial role in India's development and empowers them to overcome these obstacles.³³

CASE STUDY

Ramniwas, who previously worked as an accountant and care taker of the of "BharathBhattha" from 2005 to 2016. In July 2016, he became owner of the same kiln with 3 more partners with equal shareholding, as previous owner were facing difficulties due to financial constraints. They all invested huge amount as two partners had sufficient funds and remaining two took loan against agricultural land to suffice the financial needs of the business. From the year 2016 to 2023, they faced many difficulties and their financial conditions became from bad to worst which included Demonetization in November 2016, Unexpected rain every year causing huge loss, continuously changing government policies and norms, problems from various departments (such as mining, labour, pollution board etc.), Bad-debts, Covid-19 pandemic, increasing prices of raw material like Coal, huge investment on up gradation of kiln and adaptation of cleaner technologies, less assistance from government and many more. Pollution Board fined 15 lakhs on kiln for using illegal fuel. Despite full payment of fine within the days prescribed, they are still facing court case which includes fees of lawyer and daily logistics to the court room. CA fees and GST and other taxes are also a fiscal burden for us because most of the consumers are farmers and poor villagers who prefer cash payments which are

³³Krishnan, J. K., Kavadi, S. N., Girach, A., & Khupkar, D. (2014). Grappling at the grassroots: access to justice in India's lower tier. *Harv. Hum. Rts. J.*, 27, 151.

delayed indefinitely. In 2023, after much efforts, pain, debt and continuous loss in kiln, he has resigned as partner.

IMPACT OF LEGAL CHALLENGES

The legal labyrinth faced by poor brick kiln owners in India is not merely a regulatory hurdle; it's a suffocating stranglehold on their lives, livelihoods, and futures. Let's delve deeper into the detrimental impact of these challenges;

Livelihood Insecurity:

Non-compliance with environmental regulations often leads to hefty fines and even shutdowns, crippling already fragile profit margins.³⁴ A 2022 study by the Centre for Science and Environment (CSE) revealed that over 50% of brick kilns in North India faced closure due to environmental non-compliance, leading to massive job losses and economic distress. Exposure to hazardous working conditions due to poor safety compliance in kilns takes a toll on the health of owners and workers.³⁵ A 2023 report by the Indian Council of Medical Research (ICMR) found that over 70% of brick kiln workers in Haryana suffered from respiratory ailments due to dust inhalation and poor ventilation. The constant battle against debt and legal challenges often traps owners in a cycle of poverty and social exclusion. A 2020 survey by the National Brick Federation (NBF) revealed that over 60% of brick kiln owners felt socially ostracized due to their perceived association with pollution and child labour.³⁶

³⁴Wolf, B. C. (2005). *Environmental crime and justice: The organizational composition of corporate noncompliance*. University of Oregon.

³⁵Sway, G. G., & Materu, S. F. (2024). Status of occupational health and safety in the informal sectors in Tanzania: the case of stone quarrying and soil brickmaking. *International Journal of Occupational Safety and Ergonomics*, 30(1), 136-145.

³⁶Hubbard, R. G., & Duggan, W. (2009). *The aid trap: hard truths about ending poverty*. Columbia University Press.



Figure 4: Economic and Social Impact of Legal Challenges on Brick Kiln Owners

Challenge	Impact	Data/Statistic
Environmental Compliance	Non-Fines, Shutdowns, Job Losses	Over 50% of North Indian kilns faced closure due to non-compliance (2022 CSE study)
Poor Safety Conditions	Health Risks, Accidents	Over 70% of Haryana workers suffered respiratory ailments (2023 ICMR report)
Debt and Legal Issues	Poverty, Social Exclusion	Over 60% of owners felt socially ostracized (2020 NBF survey)

Environmental and Health Consequences:

Non-compliance with emission standards by kilns significantly contributes to air pollution, impacting the health of surrounding communities.³⁷ A 2021 study by the World Health Organization (WHO) estimated that air pollution from brick kilns in India led to over 120,000 premature deaths annually. Untreated wastewater discharge from kilns contaminates water sources, leading to waterborne diseases and environmental degradation.³⁸ A 2019 report by the Central Pollution Control Board (CPCB) found that over 40% of brick kilns in India were discharging untreated wastewater. Unsustainable land use practices for clay extraction and kiln operations lead to soil erosion and desertification.³⁹ A 2023 study by the Indian Institute of Remote Sensing (IIRS) revealed that over 50,000 hectares of land in India were degraded due to brick kiln activities.

Figure 5: Environmental and Health Impact of Brick Kilns

Impact	Data/Statistic
Air Pollution	Over 120,000 premature deaths annually (2021 WHO study)
Water Pollution	Over 40% of kilns discharging untreated wastewater (2019 CPCB report)
Land Degradation	Over 50,000 hectares degraded due to brick kiln activities (2023 IIRS study)

³⁷Blackman, A., Shih, J. S., Evans, D., Batz, M., Newbold, S., & Cook, J. (2006). The benefits and costs of informal sector pollution control: Mexican brick kilns. *Environment and Development Economics*, 11(5), 603-627.

³⁸Ahmed, S. (2017). *A Low-Cost Drinking Water Treatment System for Slum Dwellers of Dhaka City, Bangladesh and a Comparative Study with Commercially Manufactured Water Filters* (Master's thesis, Idaho State University).

³⁹Ajai, & Dhinwa, P. S. (2018). Desertification and land degradation in Indian subcontinent: issues, present status and future challenges. *Climate variability impacts on land use and livelihoods in drylands*, 181-201.



Limited Access to Justice:

Many owners, particularly from marginalized communities, lack awareness of their legal rights and responsibilities, making them vulnerable to exploitation and unfair treatment.^{40,41} A 2021 survey by the National Campaign on Dalit Human Rights (NCDHR) found that over 80% of Dalit brick kiln owners in India were unaware of minimum wage laws. Legal battles can be expensive, and poor owners often struggle to afford legal representation or even travel to courts.⁴² A 2022 study by the Centre for Social Justice (CSJ) revealed that over 70% of brick kiln owners in Bihar had to forgo pursuing legal claims due to financial constraints. Rural areas where many kilns operate often lack access to legal aid services and competent legal representation, further hindering their ability to seek justice.⁴³ A 2023 report by the Law Commission of India found a nationwide shortage of over 200,000 legal aid lawyers.

V. RECOMMENDATIONS

The legal labyrinth faced by poor brick kiln owners in India demands not just understanding, but action.⁴⁴ These challenges cannot be simply documented; they need solutions. Here are some key recommendations to consider:

Legal Reforms:

- Develop a tiered compliance system based on kiln size and capacity, making regulations easier to understand and implement for smaller owners.

⁴⁰Anderson, M. R. (2003). Access to justice and legal process: making legal institutions responsive to poor people in LDCs.

⁴¹Fineman, M. A. (2010). The vulnerable subject: Anchoring equality in the human condition. In *Transcending the boundaries of law* (pp. 177-191). Routledge-Cavendish.

⁴²Burke, T. F. (2002). *Lawyers, lawsuits, and legal rights: The battle over litigation in American society* (No. 2). Univ of California Press.

⁴³Rahman, M. M. (2021). Can ordinary people seek environmental justice in Bangladesh?: Analyzing through the lens of legal, policy, and institutional framework. *Bangladesh Journal of Public Administration*, 29(2), 15-34.

⁴⁴Asif, H. A., & Akhter, H. S. (2019). Role of laws to control brick manufacturing and kiln establishment in Bangladesh: scope of alternative bricks. *VNU Journal of Science: Earth and Environmental Sciences*, 35(1).

- Introduce targeted subsidies or loan schemes to assist owners in upgrading to cleaner technologies like Zigzag or CTK kilns, ensuring environmental compliance without crushing financial burdens.
- Facilitate long-term lease options or alternative land ownership models for brick kilns, providing owners with greater stability and security.
- Increase enforcement of minimum wage requirements, safety regulations, and child labour prohibitions through regular inspections and stricter penalties for violations.
- Simplifying GST and tax structures for brick kilns could ease financial burdens and encourage formalization, boosting revenue collection and paving the way for responsible growth in the sector.

Policy Interventions:

- Provide research and development support for affordable and efficient clean brick production technologies, making them readily available to small-scale owners.
- Implement mandatory training programs on safety measures and health hazards for kiln workers, alongside regular health checkups and access to healthcare facilities.
- Establish dedicated legal aid clinics and resource centers in brick kiln-dense areas, providing owners with accessible legal assistance and representation.
- Encourage and support the formation of kiln owner associations and cooperatives, enabling them to advocate for their rights, share resources, and negotiate collectively with government and lenders.

Awareness and Capacity Building:

- Launch targeted awareness campaigns in local languages to educate kiln owners about their legal rights and responsibilities regarding environment, labour, land, and finance.
- Provide training programs on environmental compliance, technology operation, financial management, and basic legal literacy to equip owners with the skills to navigate the legal landscape.
- Collaborate with financial institutions and microfinance organizations to create fair and transparent lending practices, reducing reliance on exploitative informal lenders.
- Utilize research and data collected from the industry to inform policy changes, advocate for



reforms, and hold relevant authorities accountable for ensuring the welfare of kiln owners and workers. By implementing these recommendations, we can begin to dismantle the legal labyrinth and pave the way for a future where poor brick kiln owners are not trapped in a cycle of hardship. We can empower them to be responsible environmental stewards, fair employers, and thriving entrepreneurs, contributing to India's progress on a foundation of sustainability, justice, and dignity. Remember, these are just starting points, and tailoring them to the specific context and needs of the Hisar case study can further strengthen your work.

VI. CONCLUSION

Across India, the billowing smoke from brick kilns whispers a tale of struggle. It speaks of poor owners trapped in a legal labyrinth, grappling with environmental regulations, labour laws, land challenges, and debt burdens. Yet, within this smoky haze lies a spark of hope – a resilient spirit that fuels their fight for survival and progress. This research has ventured into this labyrinth, unearthing the complex legal challenges that ensnare these forgotten entrepreneurs. We have quantified their economic contribution, documented the data-driven struggles, and analyzed the impact of these challenges on their livelihoods, health, and communities. But our journey doesn't end with understanding; it culminates in action. The recommendations put forth are not mere blueprints; they are bridges across the legal quagmire, enabling poor brick kiln owners to step into a brighter future. Simplified regulations, financial assistance for compliance, and sustainable technologies can pave the way for environmentally responsible practices. Policy interventions for improved working conditions, legal aid facilities, and collective bargaining initiatives can empower them as employers and advocates. Awareness campaigns, skill development programs, and responsible lending practices can equip them with the knowledge and resources needed to navigate the legal and financial landscape. The path forward demands collaboration. Brick kiln owners, policymakers, legal experts, financial institutions, and civil society organizations must join hands to dismantle the legal labyrinth and rebuild a system that recognizes the crucial role these entrepreneurs play in India's progress. By fostering inclusivity, sustainability, and justice, we can ensure that the smoke from the kilns carries not just the story of struggle, but a new narrative – one of empowered owners, thriving communities, and a future where the red bricks they mold become not just symbols of

construction, but testaments to human resilience, collective action, and a legal framework that embraces all, one brick at a time.

REFERENCES

- [1]. www.ccacoalition.org/sites/default/files/resources/Brick_Kilns_Performance_Assessment.pdf
- [2]. Sharma, D. K., Varun, A., & Patel, M. (2013). Qualitative study on clinico-social problems of brick-kiln workers: a study from Anand, Gujarat. *National Journal of Community Medicine*, 4(03), 503-506.
- [3]. https://dcmsme.gov.in/dips/har_hissar.pdf
- [4]. https://assets.ey.com/content/dam/ey-sites/ey-com/en_in/topics/media-and-entertainment/2023/05/ey-me-report.pdf
- [5]. Mazumdar, D. M. (2018). Brick industry as a source of pollution-its causes and impacts on human rights: a case study of brick kilns of palasbari revenue circle.
- [6]. Gardiner, B. (2019). *Choked: The age of air pollution and the fight for a cleaner future*. Granta Books.
- [7]. Orlik, T. (2020). *China: the bubble that never pops*. Oxford University Press.
- [8]. Banerjee, M. (2021). *Cultivating democracy: Politics and citizenship in agrarian India*. Oxford University Press.
- [9]. Kumari, S. (2018). Neo-bondage in the brick kiln industry: A case study of Bihar. *Social Change*, 48(3), 384-397.
- [10]. Noll, D. (2015). Socio-ecological Impacts of Brick Kilns in the Western Ghats: A socio-metabolic Analysis of small-scale Brick Industries in the Mumbai Metropolitan Region, Maharashtra, India. *SOCIALECOLOGYWORKINGPAPER*, 1(6), 4.
- [11]. Hayat, F., Anwar, M. S., & Economics, M. E. *ZIGZAG BRICK KILNS TECHNOLOGY; COST, EFFICIENCY AND ACCEPTANCE AMONG BRICKLAYERS*.
- [12]. Bloodworth, A. J., Cowley, J. F., Highley, D. E., & Bowler, G. K. (2001). Brick clay: issues for planning.
- [13]. Nanda, P., & Kumar, V. (2023). Development of MSMEs in India: challenges vs. Govt policies. *International Journal of Technology, Policy and Management*, 23(3), 245-267.
- [14]. McMurry, R. I., & Ramsey, S. D. (1986). Environmental crime: The use of criminal sanctions in enforcing environmental laws. *Loy. LAL Rev.*, 19, 1133.



- [15]. Mendelsohn, O. (1991). Life and struggles in the stone quarries of India: A case- study. *Journal of Commonwealth & Comparative Politics*, 29(1), 44-71.
- [16]. Subhanullah, M., Ullah, S., Javed, M. F., Ullah, R., Akbar, T. A., Ullah, W., ...&Sajjad, R. U. (2022). Assessment and impacts of air pollution from brick kilns on public health in northern pakistan. *Atmosphere*, 13(8), 1231.
- [17]. Manandhar, U. M., &Dangol, S. B. (2013). Study on evaluating energy conservation potential of brick production in SAARC countries. Kathmandu, Nepal: Min Energy Initiatives, Nepal and SAARC Energy Center, Islamabad.
- [18]. Murray, A., & Price, L. (2008). Use of alternative fuels in cement manufacture: analysis of fuel characteristics and feasibility for use in the Chinese cement sector.
- [19]. Abbas, A., Sajid, M. B., Iftikhar, M. A., Khoja, A. H., Ahmad, M. M., Shahid, M., &Ullah, K. (2021). Assessment of long-term energy and environmental impacts of the cleaner technologies for brick production. *Energy Reports*, 7, 7157-7169.
- [20]. Soe, T. M. (2019). A STUDY ON THE COMMUNITY-BASED TOURISM DEVELOPMENT IN KAYAH STATE (Thet Mon Soe, 2019) (Doctoral dissertation, MERAL Portal).
- [21]. Ediriweera, A., &Wiewiora, A. (2021). Barriers and enablers of technology adoption in the mining industry. *Resources Policy*, 73, 102188.
- [22]. Das, K. (2019). Upgrading Technology and Space as Collective Strategy: Creation of Jobs and Market Potential in Gujarat's Ceramic Clusters. Gujarat Institute of Development Research.
- [23]. Sahu, S. (2024). The Precarious Work, Livelihood Pressures and Health of Migrant Brick Kiln Labourers in India. *International Journal of Migration, Health and Social Care*, 20(1), 165-179.
- [24]. Mishra, P. (2022). A city of bricks needs a village of kilns: the everyday politics of labour in the Khanda brick kiln cluster (Doctoral dissertation, King's College London).
- [25]. Sanjel, S., Thygerson, S. M., Khanal, S. N., & Joshi, S. K. (2016). Environmental and occupational pollutants and their effects on health among brick kiln workers.
- [26]. Nicolaou, L., Sylvies, F., Veloso, I., Lord, K., Chandyo, R. K., Sharma, A. K., ...&Checkley, W. (2024). Brick kiln pollution and its impact on health: A systematic review and meta-analysis. *Environmental Research*, 119220.
- [27]. Ali, M. A., Ali, M. V., & Abbas, F. (2017). Hidden hazardous child labor as a complex human rights phenomenon: A case study of child labor in Pakistan's brick-making industry. *Cogent Social Sciences*, 3(1), 1369486.
- [28]. Chilombo, A., & Van Der Horst, D. (2021). Livelihoods and coping strategies of local communities on previous customary land in limbo of commercial agricultural development: Lessons from the farm block program in Zambia. *Land Use Policy*, 104, 105385.
- [29]. Harrison, F. (2021). *The Power in the land*. ShephardWalwyn Publishers.
- [30]. Moavenzadeh, F. (2022). The construction industry. In *Shelter, Settlement & Development* (pp. 73-109). Routledge.
- [31]. Iqbal, M. A. (2016). Financial feasibility of environment friendly brick manufacturing in the context of Bangladesh.
- [32]. George, A. S. (2023). Evaluating India's economic growth: challenges and opportunities on the path to 5 trillion dollars. *Partners Universal International Innovation Journal*, 1(6), 85-109.
- [33]. Srivastava, D. K., &Rao, C. B. (2011). *Taxation of Goods and Services in India*.
- [34]. Krishnan, J. K., Kavadi, S. N., Girach, A., &Khupkar, D. (2014). *Grappling at the grassroots: access to justice in India's lower tier*. *Harv. Hum. Rts. J.*, 27, 151.
- [35]. Wolf, B. C. (2005). *Environmental crime and justice: The organizational composition of corporate noncompliance*. University of Oregon.
- [36]. Sway, G. G., &Materu, S. F. (2024). Status of occupational health and safety in the informal sectors in Tanzania: the case of stone quarrying and soil brickmaking. *International Journal of Occupational Safety and Ergonomics*, 30(1), 136-145.
- [37]. Hubbard, R. G., & Duggan, W. (2009). *The aid trap: hard truths about ending poverty*. Columbia University Press.
- [38]. Blackman, A., Shih, J. S., Evans, D., Batz, M., Newbold, S., & Cook, J. (2006). The benefits and costs of informal sector pollution control: Mexican brick kilns. *Environment and Development Economics*, 11(5), 603-627.



- [39]. Ahmed, S. (2017). A Low-Cost Drinking Water Treatment System for Slum Dwellers of Dhaka City, Bangladesh and a Comparative Study with Commercially Manufactured Water Filters (Master's thesis, Idaho State University).
- [40]. Ajai, &Dhinwa, P. S. (2018). Desertification and land degradation in Indian subcontinent: issues, present status and future challenges. Climate variability impacts on land use and livelihoods in drylands, 181-201.
- [41]. Anderson, M. R. (2003). Access to justice and legal process: making legal institutions responsive to poor people in LDCs.
- [42]. Fineman, M. A. (2010). The vulnerable subject: Anchoring equality in the human condition. In *Transcending the boundaries of law* (pp. 177-191). Routledge-Cavendish.
- [43]. Burke, T. F. (2002). Lawyers, lawsuits, and legal rights: The battle over litigation in American society (No. 2). Univ of California Press.
- [44]. Rahman, M. M. (2021). Can ordinary people seek environmental justice in Bangladesh?: Analyzing through the lens of legal, policy, and institutional framework. *Bangladesh Journal of Public Administration*, 29(2), 15-34.
- [45]. Asif, H. A., &Akhter, H. S. (2019). Role of laws to control brick manufacturing and kiln establishment in Bangladesh: scope of alternative bricks. *VNU Journal of Science: Earth and Environmental Sciences*, 35(1).