

A SOCIO LEGAL STUDY ON THE FEASIBILITY OF IMPLEMENTING MANDATORY FORENSIC EVIDENCE COLLECTION IN RURAL AREAS ¹²³

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ABSTRACT

In Bharat, it is often observed that “laws in India roar on paper but whisper in practice.” While Indian criminal laws are doctrinally robust and normatively well articulated, their effective implementation particularly in rural contexts remains a persistent challenge. As Roscoe Pound famously noted, “Law in books and law in action are not always the same,” a dichotomy that is acutely visible within India’s criminal justice system. This paper critically examines the sociolegal feasibility of mandatory forensic evidence collection in rural India, with specific reference to Section 176(3) of the Bharatiya Nagarik Suraksha Sanhita, 2023 (BNSS), which mandates forensic investigation in offences punishable with imprisonment of seven years or more. While forensic science has emerged as a cornerstone of modern criminal investigation enhancing objectivity, accuracy, and evidentiary reliability its compulsory and systematic application in rural areas raises complex practical, ethical, economic, and legal concerns. The study juxtaposes the procedural mandates under the BNSS with the evolving evidentiary standards under the Bharatiya Sakshya Adhiniyam, 2023 (BSA) and the repealed Indian Evidence Act, 1872, analysing whether the transition represents substantive reform or merely symbolic legislation. Drawing upon sociocultural realities, infrastructural inadequacies, forensic laboratory backlogs, and stakeholder perceptions, the paper highlights the risks of chain of custody contamination, delayed justice, and potential miscarriages of justice in rural settings.

As Justice V.R. Krishna Iyer cautioned, “Procedure is the handmaid of justice, not its mistress,”⁴ yet excessive procedural rigidity without institutional capacity may undermine the very justice it seeks to advance. The paper argues that without parallel investment in rural forensic infrastructure, trained personnel, and rights sensitive safeguards, mandatory forensic provisions may overwhelm existing systems and inadvertently erode constitutional protections. Ultimately, this research contends that while forensic evidence has the potential to significantly strengthen rural criminal justice outcomes, its mandatory implementation must be context sensitive, rights oriented and institutionally supported to avoid transforming progressive legislation into a “paper lion” devoid of practical efficacy.

Keywords: *Forensic Evidence; Rural Criminal Justice; Bharatiya Nagarik Suraksha Sanhita, 2023 (BNSS); Bharatiya Sakshya Adhiniyam, 2023 (BSA); Criminal Procedure Reform;*

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⁴ *State of Punjab v. Shamlal Murari*, (1976) 1 SCC 719 (India)

Evidentiary Standards; Chain of Custody; Socio Legal Feasibility; Access to Justice; Implementation Challenges in Rural India

1. INTRODUCTION

The replacement of the Code of Criminal Procedure, 1973, with the Bharatiya Nagarik Suraksha Sanhita (BNSS), 2023, represents a decisive transformation in India's criminal justice framework. The new procedural regime signals a shift from a predominantly eyewitness driven model of investigation to one grounded in scientific and forensic evidence. This transition responds to longstanding concerns regarding low conviction rates, hostile witnesses, and investigative deficiencies that have historically undermined public confidence in the administration of criminal justice. As early as 2003, the Malimath Committee on Reforms of the Criminal Justice System underscored the necessity of scientific investigation, observing that while human testimony is susceptible to error and manipulation, material and circumstantial evidence offers greater reliability.⁵ These recommendations have now found statutory expression in Section 176(3) of the BNSS, which mandates that in all offences punishable with seven years of imprisonment or more, a forensic expert must visit the crime scene to collect evidence and videograph the investigative process. While the legislative intent behind this provision is to align Indian policing with international best practices and enhance evidentiary credibility, its uniform enforcement across a socioeconomically diverse nation presents significant challenges. India's rural regions, which constitute a substantial portion of the population and criminal caseload, remain structurally and institutionally ill equipped to comply with such a stringent scientific mandate. The promise of accuracy and objectivity through forensic intervention, though compelling in theory, confronts serious practical limitations when transposed onto rural investigative realities characterized by inadequate infrastructure, scarcity of trained personnel, and logistical constraints.

Empirical data highlights the magnitude of this implementation gap. According to the National Crime Records Bureau (NCRB) 2022, nearly 65 per cent of India's population resides in rural areas, which account for a proportionate share of serious and violent offences⁶. However, the forensic ecosystem necessary to operationalize Section 176(3) remains grossly underdeveloped in these regions. The 237th Report of the Parliamentary Standing Committee on Home Affairs (202223) reveals that more than 70 per cent of rural police stations lack basic scene of crime forensic kits, while the Ministry of Home Affairs has acknowledged a vacancy rate of approximately 4050 per cent in technical positions across State Forensic Science Laboratories (FSLs).⁷ These systemic deficiencies generate investigative bottlenecks that risk delaying trials

⁵ Committee on Reforms of Criminal Justice System, Report, Volume I (Government of India, Ministry of Home Affairs, Mar. 2003), https://www.mha.gov.in/sites/default/files/2022-08/criminal_justice_system%5B1%5D.pdf [hereinafter Reforms of Criminal Justice System Report].

⁶ National Crime Records Bureau, Crime in India 2022, Book 1 (Ministry of Home Affairs, Government of India, 2023), available at <https://www.ncrb.gov.in/uploads/nationalcrimerecordsbureau/custom/1701607577CrimeinIndia2022Book1.pdf> (last visited Jan. 26, 2026).

⁷ Parliament of India, Rajya Sabha, Department-related Parliamentary Standing Committee on Home Affairs, Two Hundred Thirty Seventh Report on Police – Training, Modernisation and Reforms (10 Feb. 2022), available

and undermining the very objectives of the BNSS. Delays in forensic analysis further exacerbate concerns relating to procedural fairness and constitutional guarantees. Official reports, including the Delhi FSL Annual Report (2023), indicate an average pendency of nine to twelve months for DNA analysis, with considerably longer delays in under resourced states. Such prolonged waiting periods directly implicate the constitutional right to a speedy trial under Article 21 of the Constitution of India, particularly for accused persons in rural areas who may remain in prolonged custody pending forensic reports that the system lacks the capacity to process expeditiously.

In addition to logistical constraints, the mandatory nature of forensic procedures raises significant jurisprudential and rights based concerns. The Supreme Court of India has consistently cautioned against coercive investigative practices that infringe upon bodily integrity and personal liberty. In *Selvi & Ors. v. State of Karnataka*⁸, while recognizing the probative value of scientific techniques, the Court emphasized that compulsory procedures must not violate the protection against self incrimination under Article 20(3). Furthermore, the evidentiary value of forensic material is contingent upon an unbroken and credible chain of custody. In *State of Gujarat v. Kishanbhai*⁹, the Court overturned a conviction due solely to lapses in the handling and preservation of evidence, underscoring that compromised forensic material may be more detrimental than its complete absence. In rural contexts, where samples often traverse long distances without adequate preservation or monitoring, the risk of contamination and evidentiary failure is significantly heightened.

Against this backdrop, the present study undertakes a sociolegal examination of the feasibility of implementing the BNSS's mandatory forensic evidence provisions in rural India. It contends that without substantial investment in rural forensic infrastructure, human resources, and procedural safeguards, the blanket application of Section 176(3) may inadvertently entrench systemic inequities. Rather than uniformly enhancing the quality of justice, the provision risks fostering a two tier criminal justice system one in which urban centres reap the benefits of scientific precision, while rural populations bear the costs of procedural delays, compromised evidence, and prolonged deprivation of liberty.

Research Methodology

This study adopts a qualitative case study method to examine the sociolegal feasibility of implementing mandatory forensic evidence collection under Section 176(3) of the Bharatiya Nagarik Suraksha Sanhita (BNSS), 2023, with specific reference to rural India. The case study approach is particularly suitable for this research as it enables an in depth, contextual analysis of how statutory mandates operate within real world institutional, infrastructural, and social constraints. Given the uneven development of forensic infrastructure across Indian states, a

at https://sansad.in/getFile/rsnew/Committee_site/Committee_File/ReportFile/15/161/237_2022_2_17.pdf (last visited Jan. 26, 2026).

⁸ (2010) 7 SCC 263 (India).

⁹ (2014) 8 SCC 456 (India).

case study method allows the law to be examined not merely as a normative command, but as a lived administrative practice.

2. LEGAL MANDATE AND ITS INTENDED OBJECTIVES

2.1 Structural Transformation of Criminal Procedure

The replacement of the Code of Criminal Procedure (CrPC), 1973, by the Bharatiya Nagarik Suraksha Sanhita, 2023 (BNSS) represents a paradigmatic shift in Indian criminal justice philosophy. This transition is not merely a legislative reform but an epistemological transformation fundamental change in how the legal system discerns "truth." Historically, the Indian justice system has been "testimony centric," relying heavily on ocular evidence (eyewitnesses). However, the fragility of human memory, coupled with the systemic plague of "hostile witnesses" often compromised by caste hegemony, intimidation, or bribery has necessitated a pivot toward "scientific objectivity."

The BNSS institutionalises forensic science not merely as an auxiliary investigative aid, but as a normative standard. This shift operationalizes the recommendations of the Malimath Committee on Reforms of Criminal Justice System (2003), which argued that "men may lie, circumstances do not." By mandating forensic collection, the State seeks to replace the subjectivity of oral testimony with the neutrality of empirical data. However, as the sociological jurist Roscoe Pound famously articulated, "The real problem of law is not the creation of rules but their social operation." The forensic mandate, therefore, must be understood not simply as a statutory innovation, but as a complex sociolegal experiment. Its success depends entirely on whether the rigid "law in books" can survive the friction of "law in action" within India's structurally disparate rural landscape.

2.2 Statutory Architecture: The Forensic Centric Regime

The new legal framework is built upon a "triad" of statutory provisions that collectively impose a duty of scientific investigation.

A. Section 176(3) BNSS: The Mandatory Forensic Model Section 176(3) of the BNSS acts as the cornerstone of this reform. It establishes a non-negotiable statutory obligation: for all offences punishable with imprisonment of seven years or more, the officer in charge of the police station must:

Cause a forensic expert to visit the crime scene to collect forensic evidence.

Ensure videographic documentation of the crime scene and the collection process on an electronic device.

This provision effectively abolishes investigative discretion. Under the colonial CrPC framework, the decision to call a forensic team was largely left to the wisdom of the

Investigating Officer (IO), except in specific sexual offences (post2013 amendments). Under the BNSS, this discretion is replaced by legal compulsion. It embodies the modern jurisprudential doctrine that criminal investigation is a "scientific duty," not an "administrative choice."

The "Sunrise Period" Paradox: Crucially, the legislature has incorporated a five year "sunrise period" in the proviso to Section 176(3), granting state governments time to notify the full implementation of this clause. This proviso is legally profound. It constitutes a statutory admission by the Parliament of the country's infrastructural incapacity. It creates a unique constitutional paradox: the citizen has a "right" to scientific investigation under the statute, but the "remedy" is deferred due to logistical unreadiness. This suspension reflects a tension with the maxim *ubi jus ibi remedium* (where there is a right, there must be a remedy), creating a transitional phase where justice outcomes may vary wildly based on whether a state has notified the clause or not.

B. Section 105 BNSS: Digitalisation of Search and Seizure Section 105 of the BNSS (replacing Section 100 of the CrPC) mandates the audio video recording of the entire search and seizure process, including the preparation of the seizure list.

The Legal Intent: This provision aims to curb the rampant police practice of planting evidence or fabricating recovery memos, a mischief often criticized by the courts.

The "Digital Chain of Custody": This transforms every physical investigation into a digital forensic procedure. The IO is no longer just preserving a knife or a packet of contraband; they must now preserve the digital file of the video. This invokes the rigorous standards of "electronic evidence" (formerly Section 65B of IEA, now Section 63 of the Bharatiya Sakshya Adhiniyam, 2023).

The Rural Barrier: In rural India, this mandate encounters systemic barriers: inconsistent electricity supply, absence of secure cloud storage, and the risk of data corruption on personal mobile devices. The legal obligation to record, hash, preserve, and authenticate digital evidence creates a procedural burden that a rural constable lacking formal training in cyber forensics is structurally unequipped to bear.

C. Criminal Procedure (Identification) Act, 2022: Biometric Expansion Complementing the BNSS is the Criminal Procedure (Identification) Act, 2022, which repealed the colonial Identification of Prisoners Act, 1920. This Act radically expands the definition of "measurements" to include:

Finger, palm, and footprint impressions.

Iris and retina scans.

Biological samples (blood, hair, DNA, semen).

The Act authorises the National Crime Records Bureau (NCRB) to retain such data for 75 years, constructing a massive national biometric surveillance architecture. This statute operates in legal synergy with Section 176(3) BNSS: the BNSS mandates the collection at the scene, while the 2022 Act legitimises the storage and database integration. However, this synergy fractures in rural contexts where the physical kits required to collect these "biological samples" (e.g., EDTA vials, sterile swabs) and the cold chain logistics to transport them are absent.¹⁰

2.3 Jurisprudential Justification: The "Best Evidence" Imperative

The transition to mandatory forensics is not arbitrary; it is a response to decades of judicial anxiety regarding the quality of investigation.

A. The Right to Fair Investigation The Supreme Court has consistently held that the "Right to Fair Trial" under Article 21 includes the "Right to Fair Investigation."

In *Pooja Pal v. Union of India* (2016), the Apex Court ruled that an investigation cannot be "casual or cavalier" and must utilize the best available scientific tools. The Court observed that a fair investigation is a constitutional imperative to ensure that the innocent are not punished and the guilty do not escape.

Similarly, in *Dharam Deo Yadav v. State of UP* (2014), the Court explicitly stated, "Criminal justice would be a casualty if we do not use the tools of science." These judgments form the *ratio decidendi* (legal basis) for the BNSS mandate.

B. The "Silent Witness" vs. The "Hostile Witness" The mandate is also a remedy for the crisis of witness hostility. In *Mahender Chawla v. Union of India* (2018), the Supreme Court recognized that witnesses in India are often vulnerable to threats, money power, and muscle power. Unlike a human witness who can be intimidated into recanting their statement, forensic evidence fingerprint, a DNA strand, or a CCTV recording is a "silent witness" that cannot be bribed or threatened. The mandate in Section 176(3) is the legislature's attempt to insulate the justice process from social coercion.

C. Judicial Concerns on Storage (The Mohanlal Dictum) While pushing for science, the judiciary has also warned about the storage crisis. In *Union of India v. Mohanlal* (2016), the Supreme Court took suo motu cognizance of the deplorable state of Malkhanas (evidence rooms) across India. The Court issued strict guidelines for the preservation of seized drugs and evidence. However, the BNSS now mandates the collection of more biological evidence, which is far more sensitive to temperature and degradation than the narcotics discussed in Mohanlal. This creates a conflict where the law mandates collection, but the judicial guidelines for storage remain unimplemented in rural stations.

¹⁰ *Indian Law Institute (ILI) Footnote Citation:*

Zoya Mateen & Meryl Sebastian, *CPC: Criminal Procedure (Identification) Bill Raises Fears of Surveillance in India*, BBC News (Apr. 13, 2022), <https://www.bbc.com/news/world-asia-india-61015970> (last visited Jan. 21, 2026).

2.3 Financial Commitments and Federal Structural Constraints

To support forensic modernisation, the Union Cabinet approved the National Forensic Infrastructure Enhancement Scheme (NFIES), 2024¹¹, with an outlay of ₹2,254.43 crore, aimed at establishing new campuses of the National Forensic Sciences University and new Central Forensic Science Laboratories (CFSLS).¹¹

However, a federal structural contradiction persists. Police and public order fall under List II (State List) of the Seventh Schedule of the Constitution. While the Union can fund central laboratories, the daily burden of investigation rests on State FSLs, district forensic units, and rural police stations. Central investment therefore produces vertical excellence but horizontal inequality: metropolitan centres benefit from advanced facilities, while rural districts remain institutionally stagnant.

This reflects a classic centre state implementation deficit, where policy design is centralised but operational responsibility is decentralised without proportional fiscal empowerment.

2.4 Jurisprudential Foundations: The “Best Evidence” Doctrine

The forensic mandate draws constitutional legitimacy from the judicial evolution of the Best Evidence Rule. In *Pooja Pal v. Union of India*¹², the Supreme Court held that the right to fair trial under Article 21 includes the right to fair investigation, requiring the use of the best available scientific tools. The Court rejected perfunctory investigations as unconstitutional. In *Dharam Deo Yadav v. State of UP (2014)*, the Court observed that “*criminal justice would become a casualty if we fail to use scientific methods of investigation.*” These judgments collectively transform forensic science from an optional aid into a constitutional necessity. The mandate is also a response to the crisis of eyewitness reliability. In *Swaran Singh v. State of Punjab (2000)*, the Court acknowledged systemic witness intimidation, while *Mahender Chawla v. Union of India*¹³ institutionalised the Witness Protection Scheme. Forensic evidence is conceptualised as a “silent witness” immune to social pressure, caste dominance, and coercion.

2.5 Evidence Storage and the Malkhana Crisis

In *Union of India v. Mohanlal (2016)*, the Supreme Court took suo motu cognisance of the deplorable condition of police *Malkhanas* (evidence rooms) and issued binding directions for nationwide reform. Despite these judicial mandates, parliamentary oversight reports have recorded minimal compliance in rural districts.

¹¹ Press Information Bureau, Cabinet approves Central Sector Scheme “National Forensic Infrastructure Enhancement Scheme” (NFIES) (19 June 2024), available at <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2026704> (last visited Jan. 26, 2026)

¹² (2016) 3 SCC 745 (India)

¹³ (2018) 14 SCC 1 (India).

The mandatory forensic regime now forces biologically sensitive evidence into structurally deficient storage systems, directly contradicting judicial standards. This institutional contradiction exposes the forensic mandate to constitutional vulnerability.

2.6 Doctrinal Conflict and Legal Maxims

The entire forensic mandate collides with the classical legal maxim *lex non cogit ad impossibilia* *the law does not compel the impossible*. Where rural police stations lack transport, storage, equipment, electricity, and trained personnel, statutory mandates become legally irrational.

This creates a second doctrinal tension with *actus curiae neminem gravabit* procedural law should not prejudice substantive justice. Mandatory procedures that cannot be complied with risk transforming justice mechanisms into technical traps, enabling acquittals on procedural grounds rather than adjudication on merits.

2.7 Socio Legal Synthesis

From a sociolegal perspective, the forensic mandate exhibits a classic law society disjunction. The statute represents modernist legal rationality; rural institutions reflect premodern infrastructural realities. The mandate thus operates within a structural contradiction between legislative ambition and social capacity.

As Eugen Ehrlich observed, “*the centre of gravity of legal development lies not in legislation, nor in juristic science, nor in judicial decisions, but in society itself.*” Without institutional capacity building, forensic mandates remain symbolic law rather than functional law.

2.8 Analytical Conclusion

The BNSS forensic regime embodies progressive criminal jurisprudence, constitutional rationality, and scientific modernism. However, its rural implementation reveals a profound feasibility crisis. The coexistence of mandatory norms and infrastructural incapacity produces a system where Investigating Officers are structurally positioned to violate the law by default. This transforms the forensic mandate from a tool of justice into a source of procedural vulnerability, enabling defensive litigation based on noncompliance. The contradiction between legislative “must” and institutional “cannot” defines the central sociolegal problem of mandatory forensic evidence collection in rural India.

Until forensic infrastructure, training, storage, transport, and decentralised laboratories are developed in rural regions, the mandate risks functioning as normative symbolism rather than operational reality, thereby reinforcing rural urban inequality instead of eliminating it.

2.9 Legal Framework and the Mandate’s Justifications

The statutory insistence on mandatory forensic evidence collection does not operate in a jurisprudential vacuum. It is grounded in a broader legal framework that draws legitimacy from constitutional obligations, victimological principles, safeguards for the accused, and

overarching public interest considerations. This section situates the forensic mandate within these intersecting legal rationales and examines how their theoretical coherence is tested in rural contexts.

The Legal Basis for Mandatory Forensic Collection

Mandatory forensic collection is typically anchored in criminal procedure statutes, police powers legislation, and specialised forensic laws such as DNA identification and biometric data regimes. In India, this framework is principally derived from Section 176(3) of the BNSS, the Criminal Procedure (Identification) Act, 2022, and the evidentiary standards codified under the Bharatiya Sakshya Adhiniyam, 2023. Together, these enactments signify a legislative preference for scientific proof over testimonial uncertainty.

At a conceptual level, the mandate is justified by four interrelated legal objectives.

(a) State's Duty to Investigate: The *Parens Patriae* Obligation

The foremost justification lies in the State's affirmative duty to investigate crime effectively. Under the doctrine of *parens patriae*, the State assumes responsibility for protecting societal order and individual rights. The Supreme Court has repeatedly affirmed that a fair, impartial, and competent investigation is an indispensable component of the criminal justice process. In *Pooja Pal v. Union of India*, the Court held that the right to life and personal liberty under Article 21 encompasses not merely a fair trial but also a fair investigation.

Mandatory forensic collection operationalises this duty by compelling investigating agencies to secure the "best available evidence." It seeks to eliminate investigative arbitrariness and reduce dependence on confessions or coerced statements; practices historically associated with custodial abuse. From this perspective, the mandate represents a constitutional tool for disciplining police discretion and standardising investigative quality across cases.

However, in rural India, the State's investigative duty confronts institutional incapacity. Where the State mandates scientific investigation but fails to equip rural police stations with basic forensic logistics, the constitutional obligation risks devolving into symbolic compliance. The duty to investigate cannot be divorced from the duty to enable investigation.

(b) Rights of the Victim: Evidentiary Justice and Restorative Claims

Modern criminal jurisprudence increasingly recognises the victim as a stakeholder in the justice process rather than a peripheral witness. In *Mallikarjun Kodagali v. State of Karnataka*, the Supreme Court acknowledged victims' participatory rights and their entitlement to effective remedies. Robust forensic evidence plays a critical role in vindicating these rights, particularly in offences such as sexual violence, where social stigma and intimidation frequently silence victims.

Mandatory forensic collection is therefore projected as a mechanism of evidentiary justice, ensuring that the victim's case does not collapse due to hostile witnesses or social pressure. In rural societies marked by caste hierarchies, patriarchal norms, and community controlled dispute resolution, forensic science offers an ostensibly neutral counterweight to informal power structures.

Yet, the rural feasibility question complicates this narrative. Delayed collection, improper storage, or contaminated samples often weaken the prosecution, ultimately harming the victim's quest for justice. Thus, a mandate intended to empower victims may, in practice, expose them to prolonged trials and acquittals arising from procedural lapses. This dissonance underscores the sociolegal gap between victim centric rhetoric and rural institutional reality.

(c) Rights of the Accused: Safeguard Against Wrongful Conviction

Paradoxically, mandatory forensic collection is also justified as a safeguard for the accused. Scientific evidence, unlike testimonial evidence, possesses the capacity to exonerate as decisively as it incriminates. Comparative criminological studies demonstrate that DNA evidence has played a decisive role in overturning wrongful convictions worldwide.

Indian constitutional jurisprudence has consistently emphasised that criminal procedure must balance societal interests with individual liberty. In *Adarsh Shukla v. State of Uttar Pradesh*, the Supreme Court reiterated that investigative fairness is integral to the presumption of innocence. From this standpoint, systematic forensic collection reduces reliance on unreliable eyewitnesses and coerced confessions, aligning criminal procedure with due process norms. However, when forensic mandates are unevenly implemented, they may paradoxically prejudice the accused in rural areas. Delays in forensic reports often result in extended pretrial detention, directly impinging upon personal liberty. Thus, while forensic science promises protection against wrongful conviction, its flawed rural execution may produce new forms of procedural injustice.

(d) Public Interest: Crime Control and National Databases

The final justification rests on public interest considerations. The creation of national forensic and biometric databases is projected as a tool for crime control, particularly in addressing recidivism and serial offences. The Criminal Procedure (Identification) Act, 2022 empowers the NCRB to maintain long term biometric records, facilitating interstate coordination and data driven policing.

From a utilitarian perspective, mandatory forensic collection enhances deterrence, improves detection rates, and strengthens public confidence in the justice system. However, these benefits presuppose accurate collection, secure storage, and ethical use of data. In rural contexts lacking digital safeguards and oversight, the expansion of forensic databases raises concerns regarding privacy, data misuse, and surveillance without accountability.

3. LEGAL FRAMEWORKS GOVERNING FORENSIC COLLECTION

3.1 National Legal Provisions: The Constitutional Balancing Act

The implementation of mandatory forensic collection under the Bharatiya Nagarik Suraksha Sanhita (BNSS), 2023, operates within a complex ecosystem of constitutional rights, primarily governed by the "Golden Triangle" of Articles 14, 19, and 21. The central legal tension lies between the State's sovereign power to investigate crime and the individual's fundamental right against self incrimination codified in Article 20(3) of the Constitution. Historically, the Supreme Court has navigated this tension by distinguishing between "testimonial compulsion" and "physical evidence." In the landmark judgment of *Selvi & Ors. v. State of Karnataka* (2010), the Apex Court held that while techniques probing the subject's mind (such as narcoanalysis or polygraph tests) violate Article 20(3) if administered involuntarily, the collection of physical identifiers such as fingerprints, DNA, or blood samples does not. This distinction forms the bedrock of the Criminal Procedure (Identification) Act, 2022, which mandates the collection of biological samples. However, the recent introduction of Section 349 of the BNSS, which empowers Magistrates to order the collection of voice samples and handwriting specimens even without an arrest, tests the boundaries of this precedent. As noted in *Ritesh Sinha v. State of Uttar Pradesh*¹⁴, while voice samples are not "testimony," the compelling of such intimate data raises significant privacy concerns that have yet to be fully reconciled with the rigorous standards of the new legal regime.

Furthermore, the "Right to Privacy," declared a fundamental right in *Justice K.S. Puttaswamy (Retd.) v. Union of India* (2017), imposes a strict constitutional threshold on any mandatory data collection. The Supreme Court established a "threefold test" for any state intrusion into privacy: legality (existence of a law), necessity (a legitimate state aim), and proportionality (a rational nexus between the intrusion and the object). While Section 176(3) of the BNSS satisfies the requirement of legality, its application in rural areas faces a challenge on the grounds of proportionality and reasonableness. The doctrine of "Substantive Due Process," cemented in *Maneka Gandhi v. Union of India* (1978), dictates that any procedure established by law must be "fair, just, and reasonable." It is legally arguable that a mandatory forensic collection policy implemented in rural districts where samples are often collected by untrained personnel without privacy screens, sterile equipment, or dignity fails the test of reasonableness. When a rural litigant is subjected to invasive biological sampling in a dilapidated police station without the guarantee of accurate analysis, the procedure risks becoming "arbitrary," thereby violating the equality guarantee of Article 14.

3.2 International Human Rights Standards and Global Best Practices

India's domestic forensic mandates are also subject to scrutiny under international human rights instruments to which it is a signatory. Article 17 of the International Covenant on Civil and Political Rights (ICCPR) explicitly protects citizens from "arbitrary or unlawful

¹⁴ (2019) 10 SCC 285 (India).

interference with privacy," a protection echoed in Article 12 of the Universal Declaration of Human Rights (UDHR). International jurisprudence emphasizes that while the state has a legitimate interest in solving crimes, this interest cannot override the individual's bodily integrity without strict safeguards. The United Nations Human Rights Committee has repeatedly observed that the collection of bodily samples must be regulated by specific statutory limits regarding retention and access. This is particularly relevant to the Criminal Procedure (Identification) Act, 2022, which authorizes the National Crime Records Bureau (NCRB) to retain biometric data for 75 years.¹⁵

A critical point of comparison is the jurisprudence of the European Court of Human Rights (ECtHR). In the seminal case of *S. and Marper v. United Kingdom* (2008),¹⁶ the ECtHR ruled that the blanket and indefinite retention of DNA profiles and fingerprints of persons suspected but not convicted of offenses constituted a disproportionate interference with the right to respect for private life (Article 8 of the ECHR). The Court warned against the "stigmatization" of innocent persons whose data remains in criminal databases. In the Indian rural context, where acquittal rates are high due to poor investigation rather than proven innocence, the 75-year retention clause implies that millions of rural citizens may have their biological data permanently stored by the state merely due to an arrest. Furthermore, international best practices, such as those in the United Kingdom, mandate an independent Forensic Science Regulator to ensure quality standards and ethical compliance. The absence of such an independent statutory oversight body in India where the "police" (investigator) and the "FSL" (analyst) often operate under the same administrative umbrella violates the international principle that forensic science must be impartial, autonomous, and distinct from the prosecution machinery. This lack of independent regulatory oversight is most dangerous in rural areas, where legal illiteracy prevents citizens from challenging the "chain of custody" or the methodology of collection, leaving them vulnerable to the "function creep" of state surveillance.

4. SOCIO CULTURAL DYNAMICS IN RURAL AREAS

4.1 Community Attitudes and the Crisis of "Legal Estrangement"

The implementation of mandatory forensic collection in rural India cannot be viewed solely as an administrative procedure; it is deeply embedded in the complex sociocultural fabric of village life. Rural communities often operate under what sociologists term "legal estrangement" – a profound disconnect and distrust between the populace and formal state institutions. In many rural hinterlands, the police are historically viewed not as protectors but as instruments of coercion. Consequently, a mandate that empowers police officers to forcibly collect biological samples blood, hair, or DNA is frequently interpreted through a lens of suspicion rather than justice. This distrust is exacerbated by the "CSI Effect" in reverse; while urban populations

¹⁵ United Nations Human Rights Committee, *Fifth periodic report of the United States of America under Article 40 of the International Covenant on Civil and Political Rights (CCPR/C/USA/5)* (11 Nov. 2021), available at <https://www.undocs.org/en/CCPR/C/USA/5> (last visited Jan. 26, 2026).

¹⁶ *S. and Marper v. United Kingdom*, App. Nos. 30562/04 & 30566/04, Eur. Ct. H.R., Judgment of 4 Dec. 2000

may view DNA as a tool of truth, rural populations, lacking scientific literacy, may fear it as a tool of state framing.

A. The Illusion of Consent and Power Asymmetry While the law often speaks of "informed consent" or "statutory procedure," in a rural context defined by rigid hierarchies, consent is often illusory. The power asymmetry between a uniformed police officer and an illiterate villager is so stark that a request for a sample is perceived as a command. As noted in sociolegal studies on rural policing, the "thumb impression" on a consent form is rarely an exercise of free will but rather an act of submission to authority. When Section 176(3) BNSS mandates collection, it removes even the theoretical possibility of refusal, transforming the citizen's body into a mere repository of evidence for the State. This commodification of the rural body without a corresponding guarantee of rights deepens the alienation between the citizen and the justice system.

B. Bodily Sanctity and Cultural Taboos Furthermore, cultural beliefs surrounding "bodily sanctity" play a pivotal role in resistance. In many traditional communities, the extraction of bodily fluids is taboo or associated with witchcraft, ritual impurity, or bad omens. Anthropological studies in tribal (Adivasi) belts indicate that invasive procedures without adequate explanation can trigger community hostility. For instance, the collection of DNA from family members for "familial searching" (to identify a suspect through relatives) can be perceived as a collective punishment or a violation of clan privacy. Additionally, conflicts arise between forensic requirements and religious rituals; for example, the delay in releasing a body for cremation due to a pending forensic autopsy can incite public disorder, as seen in numerous instances in rural Uttar Pradesh and Bihar. Without a robust framework of "community engagement" and legal literacy, the sudden imposition of forensic mandates risks turning crime scenes into zones of cultural conflict.

4.2 Gender, Caste, and the Vulnerability Matrix

The impact of mandatory forensic collection is not gender neutral; it disproportionately affects women and marginalized communities who occupy the lower rungs of the rural power hierarchy.

A. The "Double Victimization" of Rural Women For rural women, particularly victims of sexual violence, the forensic examination is often a site of "secondary victimization." Despite the Supreme Court's ban on the archaic "Two Finger Test" in *Lillu v. State of Haryana (2013)*, reports persist of its surreptitious use in rural Primary Health Centres (PHCs) where doctors may lack training in modern forensic protocols. A mandatory regime that forces women to undergo biological sampling in male dominated police stations often without the presence of female officers or privacy screens reinforces the stigma of "impurity" associated with rape victims in conservative societies. The concept of *Lajja* (shame) often outweighs the desire for justice. When the law mandates an invasive forensic kit collection (which involves vaginal swabs, combing for pubic hair, etc.) in a facility that lacks dignity and privacy, it deters reporting. The National Family Health Survey (NFHS5) data indicates that spousal violence is

highest in rural areas (31.6%) yet help seeking behavior is minimal. A rigid forensic mandate that fails to account for the "privacy deficit" in rural infrastructure effectively silences these victims further.¹⁷

B. Caste Dynamics and "Epistemic Injustice" For Dalit and Adivasi communities, who have historically faced custodial violence and fabrication of evidence, the expansion of biometric data collection under the Criminal Procedure (Identification) Act, 2022, is a source of profound anxiety. There is a legitimate fear that "forensic mandates" will be weaponized to create permanent surveillance databases of marginalized groups, effectively criminalizing entire communities. This creates a form of "Epistemic Injustice" (a concept by Miranda Fricker), where the testimony of a marginalized person is devalued, and the "scientific evidence" collected by a dominant caste Investigating Officer is elevated as absolute truth. In a rural context where the IO often belongs to a dominant caste and the accused to a subordinate one, the "objectivity" of the sample collection is frequently compromised by the "subjectivity" of the collector. The risk of planted evidence now fortified by the label of "science" is a palpable fear. Therefore, without strict safeguards against discriminatory profiling and independent oversight, mandatory collection threatens to deepen the existing fault lines of caste and gender vulnerability in rural India.

C. The Language Barrier Finally, the administration of these mandates is obstructed by a linguistic disconnect. Forensic consent forms and procedural notices are typically drafted in formal legal Hindi or English. In rural districts where dialects like Bhojpuri, Maithili, or tribal languages prevail, the accused or the victim is often subjected to procedures they do not linguistically comprehend. This violation of the "right to know" renders the entire forensic process opaque and terrifying for the rural litigant.

5. INSTITUTIONAL CAPACITY AND INFRASTRUCTURE AND BENEFITS AND RISKS OF MANDATORY FORENSIC COLLECTION

5.1 Forensic Infrastructure

The "Last Mile" Deficit and the Cold Chain Crisis The successful implementation of Section 176(3) BNSS is contingent not merely on the statutory intent to collect evidence, but on the physical capacity to preserve it. In the context of rural policing, this leads to the critical crisis of the "Broken Cold Chain." Biological evidence specifically DNA, blood, and semen requires strict temperature regulation (typically 4°C for short term and 20°C for long term storage) to prevent degradation and putrefaction. However, the infrastructural reality of rural India stands in stark contradiction to these scientific requirements. As noted in the 237th Report of the Parliamentary Standing Committee on Home Affairs (2022), a vast majority of rural police stations lack functional *Malkhanas* (evidence rooms) equipped with deep freezers and

¹⁷ Sayantani Manna et al., *Prevalence of intimate partner violence among Indian women and their determinants: a cross-sectional study from National Family Health Survey-5*, 24 *BMC Women's Health* 363 (2024), available at <https://pmc.ncbi.nlm.nih.gov/articles/PMC11193235/> (last visited Jan. 26, 2026).

uninterrupted power supply (UPS). In a rural district where power outages can last 8–10 hours, a biological sample stored in a standard refrigerator risks irreversible degradation, rendering the DNA analysis inconclusive.

This "Last Mile" deficit is further compounded by the tyranny of geography. While urban centres often have Forensic Science Laboratories (FSLs) within a manageable radius, rural stations often serve jurisdictions spanning hundreds of square kilometers connected by unpaved roads. The severe shortage of Mobile Forensic Vans (MFVs) often limited to one unit per district means that the "Golden Hour" of evidence collection is frequently lost while waiting for a team to arrive from the district headquarters. This delay exposes the crime scene to contamination by weather, stray animals, or curious onlookers, compromising the integrity of the evidence before it is even collected. Consequently, the mandatory provision becomes a procedural trap: the law compels the officer to collect evidence, but the infrastructure ensures its contamination, leading to inevitable acquittals as seen in *State of Gujarat v. Kishanbhai*, where the Supreme Court heavily criticized such investigative negligence.

5.2 Training, Oversight, and the Competence Gap

A statutory mandate is only as effective as the competence of the officer enforcing it. Currently, the Indian police training curriculum is historically skewed towards "law and order" functions such as crowd control and VIP security rather than the nuances of "scientific investigation." This results in a "Generalist" problem where the rural Constable or Head Constable, who is often the first responder, lacks specialized training in forensic hygiene. The Bureau of Police Research and Development (BPR&D) has repeatedly flagged the urgent need for a dedicated "Investigative Wing" separated from "Law and Order" to ensure specialization. Without this separation, an exhausted officer handling a law and order situation during the day is expected to collect delicate DNA evidence at night scenario that invites procedural errors such as cross contamination.

Furthermore, there is a glaring absence of independent quality assurance. Unlike jurisdictions such as the United Kingdom, which has an independent Forensic Science Regulator, India lacks a statutory body to audit the quality of forensic collection at the police station level. In rural areas, there is no oversight mechanism to verify if the "videography" mandated by the BNSS was tampered with or if the "expert" visiting the scene possessed the requisite NABL (National Accreditation Board for Testing and Calibration Laboratories) accreditation. This lack of standardization means that the evidence collected in rural districts may not withstand the scrutiny of a rigorous cross-examination, leading to what legal scholars term a "credibility crisis" of forensic evidence in higher courts.¹⁸

¹⁸ *Indian Police Journal*, Vol. (July–September 2011) (Bureau of Police Research & Development, Ministry of Home Affairs, Government of India), available at <https://bprd.nic.in/uploads/pdf/9609506404-July%20September%202011.pdf> (last visited Jan. 26, 2022)

5.3 Potential Benefits

The Promise of Scientific Justice If implemented with adequate infrastructure and safeguards, the mandatory forensic collection offers transformative potential for the rural justice system. Primarily, it addresses the "Conviction Deficit." In cases of sexual violence or blind murders where no eyewitnesses exist, DNA profiling can provide the "clincher" evidence needed to secure convictions, potentially raising the dismal conviction rate for rape, which currently hovers around 28.6% according to NCRB 2022 data. Moreover, forensic science serves as a powerful shield for the innocent. In rural feuds, where false implications due to land disputes or caste rivalry are common, objective forensic data such as mobile location triangulation or biometric exclusions can quickly exonerate falsely accused individuals, preventing wrongful incarceration. Criminological theory also suggests that the *certainty* of detection is a greater deterrent than the *severity* of punishment; the knowledge that the state possesses an inescapable forensic capability can act as a psychological deterrent against repeat offenders in rural jurisdictions.

5.4 Risks and Challenges: The Sociolegal Fallout However, the blind application of this mandate without parallel capacity building carries severe risks. The most immediate threat is the "CSI Effect" causing judicial paralysis. Making forensics mandatory for all serious offenses risks clogging the already overburdened FSLs. If courts begin to demand DNA reports for every rural burglary or assault due to the new mandate, the backlog already cited as 9–12 months in the Delhi FSL Annual Report (2023) could stretch to years in states like Bihar or Uttar Pradesh. This would paradoxically delay trials, violating the "Right to Speedy Trial" under Article 21 that the law seeks to uphold.

Additionally, there is a genuine risk of "Function Creep" and the erosion of civil liberties. In the absence of a comprehensive Data Protection Act specifically governing criminal databases, the biological data collected from rural citizens could be repurposed for unauthorized profiling. The Criminal Procedure (Identification) Act, 2022, allows for the retention of data for 75 years, raising fears of a surveillance state that targets specific communities or castes under the guise of "predictive policing." Finally, there is the risk of a "Technocratic Illusion," where the state invests crores in hightech forensic kits while basic rural policing needs such as functional vehicles, fuel, and staff housing remain unmet. This resource misallocation creates a system with hightech laws but broken roads, ultimately failing the rural litigant.

6.CASE STUDIES: THE URBAN RURAL ASYMMETRY

The implementation of mandatory forensic evidence collection in India reveals a stark urban rural asymmetry that highlights both the potential and the practical limitations of such mandates. In metropolitan areas like Delhi and Mumbai, often referred to as "islands of excellence," the benefits of robust forensic infrastructure are evident. These cities, largely beneficiaries of the Nirbhaya Fund–supported Safe City projects, have established functional forensic ecosystems that integrate advanced technology with rapid response mechanisms. In Delhi, for instance, Forensic Mobile Vans (FMVs) have been successfully linked to the "112"

Emergency Response Support System, which has reduced average crime scene response times to under thirty minutes in several central urban districts. The prioritization of forensic evidence, including DNA and CCTV analysis, has shown a measurable positive effect on conviction rates in serious criminal cases, often exceeding the national average. Moreover, Uttar Pradesh's initiative to deploy two Mobile Forensic Vans per district demonstrates a nascent attempt to replicate urban success in semiurban and rural regions. However, these deployments often face the limitation of a severe shortage of trained scientific officers, emphasizing that infrastructure alone cannot guarantee operational efficiency.¹⁹

By contrast, rural areas frequently encounter systemic failures that undermine the effectiveness of mandatory forensic protocols. The Telangana State Forensic Science Laboratory, as reported in 2024, had a staggering ninety one percent vacancy rate in scientific positions, nearly double the national average. This deficit ensures that even when rural police stations collect biological or physical samples, these are often left unprocessed for extended periods due to the absence of qualified personnel. The investigative handling of the Hathras case in 2020 exemplifies such structural deficiencies. Forensic samples were collected eleven days after the incident, by which time critical biological traces had either degraded or disappeared. This delay was not merely the result of procedural inefficiency; it reflected the absence of essential sterile collection kits, a compromised chain of custody, and logistical delays in transporting samples to the FSL in Agra. In tribal districts of Odisha, pilot programs have highlighted an additional dimension of complexity: community resistance stemming from distrust of state agents. Forensic teams arriving in protective gear without prior community engagement are often perceived as instruments of coercion, rather than neutral scientific actors. Such experiences underscore the need for Forensic Liaison Officers and trust building initiatives to bridge the urban rural divide and facilitate community cooperation.

7. LEGAL AND POLICY ANALYSIS

From a legal and policy perspective, the BNSS represents a significant shift from traditional principles of informed consent toward what is now termed "deemed consent." This shift reflects a jurisprudential balancing act between protecting individual autonomy and advancing the state's interest in criminal adjudication. Historically, in *Selvi v. State of Karnataka* (2010), the Supreme Court placed great emphasis on consent for invasive procedures, safeguarding Article 20(3) rights against self incrimination. By contrast, Section 349 of the BNSS empowers magistrates to mandate voice and handwriting sample collection without arrest in cases deemed serious, positing that the exigencies of state interest may outweigh individual rights in selected contexts. To mitigate the risk of overreach, policymakers are urged to adopt a "Graded Threshold" approach, where compulsion is strictly limited to heinous crimes typically those attracting seven or more years of imprisonment while lesser offenses continue to operate on a

¹⁹ "How these forensics on wheels help Delhi cops put cons behind bars," CSIR – Central Road Research Institute, available at <https://crridom.gov.in/en/how-these-forensics-on-wheels-help-Delhi-cops-put-cons-behind-bars> (last visited Jan. 26, 2026).

presumptive consent model. This approach not only respects civil liberties but also aligns with proportionality principles central to criminal jurisprudence.

Beyond consent, the collection and retention of forensic data present a pressing regulatory challenge. The Criminal Procedure (Identification) Act, 2022 authorizes the National Crime Records Bureau (NCRB) to retain biometric data for seventy five years, creating a potential lifelong digital footprint for citizens. Compounding this is the lapse of the DNA Technology (Use and Application) Regulation Bill, 2019, which leaves rural populations vulnerable to "function creep," whereby DNA collected for minor offenses could theoretically be repurposed for genealogical, caste based, or other unrelated profiling. In rural areas, where awareness of privacy rights is limited, such unregulated retention risks permanent stigmatization. Consequently, policymakers must implement automatic deletion protocols post acquittal and robust awareness campaigns to educate citizens regarding their rights, thereby preventing the emergence of a rural digital panopticon.

8. STATISTICAL REALITY CHECK

Quantitative data reinforces the disparities between urban and rural forensic capacities. The Telangana FSL's ninetyone percent vacancy rate starkly contrasts with the national average of fifty percent, highlighting acute personnel shortages.²⁰ Nationwide, only 7,538 officers have received training in sexual assault kit handling against over 5.3 lakh total police vacancies, indicating that even when kits and mobile units are available, human capacity is insufficient. Conviction rates for rape cases remain low, averaging 27–28 percent, while the CFSL in Chandigarh alone reported 4,349 pending cases in 2023–24, reflecting significant procedural bottlenecks.²¹ The financial commitment under the National Forensic Infrastructure Enhancement Scheme (NFIES), amounting to ₹2,254.43 crore, signals serious intent; however, nationwide there are only approximately 582 Mobile Forensic Units to serve over 700 districts, creating a gap in last mile forensic delivery.²² Sample delays are also pronounced: studies indicate that in Madhya Pradesh, 22 percent of cases experienced delays exceeding thirty days in sending evidence to the FSL, further compromising the utility of collected material. These hard numbers underscore the structural and operational challenges that persist, particularly in

²⁰ *Staffing strain inside Telangana's forensic labs: 91% scientific posts vacant*, *The Hindu* (Hyderabad), Jun. 16, 2025, <https://www.thehindu.com/news/cities/Hyderabad/staffing-strain-inside-telanganas-forensic-labs-91-scientific-posts-vacant/article69465117.ece> (last visited Jan. 26, 2026).

²¹ *Press Information Bureau, Crimes against Women and Children: Government of India Initiatives* (10 Dec. 2025), available at <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2201408> (last visited Jan. 26, 2026).

²² *Press Information Bureau, The Government of India has approved the National Forensic Infrastructure Enhancement Scheme (NFIES)* (3 Dec. 2025), available at <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2198254> (last visited Jan. 26, 2026).

rural jurisdictions, highlighting the divergence between statutory mandates and ground realities.²³ Over 20,000 forensic reports pending at FSL causing trial delays in delhi.²⁴

9. RECOMMENDATIONS

9. Recommendations: Pathways for Structural Reform

The transition from a testimony centric to a science driven criminal justice system is an essential evolution for any modern democracy. For India, where legal pluralism, infrastructural disparities, and sociocultural complexity intersect, this transition cannot occur through a blanket statutory mandate alone. The analysis presented in this study underscores that the wholesale application of Section 176(3) BNSS across all jurisdictions is premature and may inadvertently exacerbate systemic inequities. To prevent the law from becoming an instrument of procedural oppression in rural India, a nuanced, multidimensional strategy is imperative one that integrates administrative, technological, and community entered reforms while maintaining constitutional safeguards.

9.1 Phased Implementation: The "readiness Based Notification" Model

A foundational step is phased implementation through a "readiness Based Notification" model. The statutory sunrise period provided in the BNSS is insufficiently granular, leaving districts with limited capacity vulnerable to procedural collapse. Instead of a statewide rollout, authorities should adopt a District Cluster Strategy, whereby implementation begins in districts with existing forensic infrastructure, typically urban or semiurban centres with NABL accredited FSLs. Rural districts would be gradually phased in only after meeting defined Forensic Readiness Indicators (FRIs). Complementing this, mandatory readiness audits should be institutionalized. Independent forensic audit bodies must certify the availability of minimum infrastructure, including functional Mobile Forensic Vans, uninterrupted power for evidence storage, and designated scientific officers. Districts failing this audit should continue to operate under discretionary CrPC procedures to prevent acquittals due to procedural lapses rather than merits of the case.

9.2 Community Engagement: Democratizing Forensic Literacy

Equally crucial is community engagement. Rural populations often perceive forensic intervention as a coercive exercise of state power rather than a neutral scientific procedure. To counter this, the state must treat forensic implementation as a social project. Launching a "Forensic Jan Andolan" at the Gram Panchayat level can foster awareness of procedural

²³ Gaurav Sharma, फॉरेंसिक लैब में 29 हजार जांचें अटकीं, नहीं मिलते सबूत; जमानत पर छूट जाते हैं आरोपी (Dainik Bhaskar – Madhya Pradesh Local News), <https://www.bhaskar.com/local/mp/news/29-thousand-reports-are-pending-in-forensic-science-lab-133910537.html> (last visited Jan. 26, 2026)

²⁴ "Over 20,000 forensic reports pending at FSL causing trial delays," Hindustan Times (Apr. 15, 2025), <https://www.hindustantimes.com/cities/delhi-news/with-20k-reports-pending-delhi-fsl-backlog-delays-key-trials-101744653688016.html> (last visited Jan. 26, 2026).

safeguards. Local paralegals under programs like Nyaya Mitra should educate villagers in their own dialects on the basics of forensic collection, the importance of chain of custody, and rights related to consent. Mobile Forensic Vans must carry vernacular rights charters, clearly explaining that individuals have the right to witness sample sealing and request independent counter samples. Further, civil society organizations like the Innocence Network should be integrated as observers during pilot phases, ensuring that coercion does not substitute for genuine consent.

9.3 Legal Safeguards: Institutionalizing Accountability

Legal safeguards must also evolve in tandem with operational reforms. The expansion of state powers under the BNSS and the Criminal Procedure (Identification) Act, 2022, necessitates statutory accountability mechanisms. For nonheinous crimes, invasive biological sampling should be authorized only through a "Judicial Forensic Warrant", applying the necessity and proportionality principles established in the *Puttaswamy* judgment prior to violating bodily integrity. Additionally, the BNSS should explicitly guarantee the right to independent retesting, enabling rural defendants to challenge state analyses through accredited laboratories, funded where necessary. Complementing this, automatic deletion protocols must be codified to safeguard the right to be forgotten, requiring the State to expunge DNA and biometric profiles within thirty days of acquittal or discharge. These combined measures ensure that forensic modernization does not become a mechanism for rights erosion.

9.4 Infrastructure Investment

Finally, infrastructural investment must be strategically designed. Expecting a hightech FSL in every rural district is fiscally impractical; instead, a Huband Spoke Network is proposed. Regional Forensic Hubs would handle complex analyses such as DNA profiling or cyber forensics, while rural police stations act as collection points equipped with basic kits. Tele forensics, enabled through the Bharat Net network, can allow Realtime expert guidance from the hub to remote locations, virtually directing collection procedures and validating compliance with Section 176(3). To address transport and sample integrity challenges, innovative logistics solutions, including secure courier services or drone based delivery networks, should be explored to maintain the critical cold chain for biological samples. Collectively, these administrative, social, legal, and technological measures form an integrated pathway to realizing the potential of mandatory forensic evidence collection without compromising procedural fairness.

10. CONCLUSION

The enactment of the Bharatiya Nagarik Suraksha Sanhita, 2023, represents a decisive legislative attempt to replace the fallibility of human memory with the certainty of scientific truth. By elevating forensic evidence from an auxiliary aid to a statutory obligation under Section 176(3), the Indian State has signaled a commendable shift toward modernizing criminal adjudication. This transition addresses the historical maladies of hostile witnesses and low

conviction rates, embodying the jurisprudential ideal that a fair investigation is a constitutional imperative under Article 21.

However, as this sociolegal study has demonstrated, there exists a perilous chasm between the "Law in Books" and the "Law in Action." The feasibility of this mandate is severely compromised by the "Last Mile" deficit in rural India. Where the *Malkhana* lacks a lock, the police station lacks a vehicle, and the "Cold Chain" is broken by chronic power outages, the statutory command to collect biological evidence becomes a command to perform the impossible (*Lex Non Cogit Ad Impossibilia*). The uncritical, blanket application of mandatory forensics in such resource starved environments risks creating a dangerous "TwoTier Justice System." One tier urban, wealthy, and well-resourced benefit from the precision of science; the other rural, marginalized, and underfunded will suffer the tyranny of procedure, where "mandatory collection" leads not to justice, but to contaminated evidence, indefinite trial delays due to FSL backlogs, and inevitable acquittals based on technical lapses.

Furthermore, the study highlights that forensic implementation is not merely a technical challenge but a sociological one. In rural hinterlands marked by "legal estrangement," the sudden imposition of invasive biological sampling without community trust or legal safeguards risks deepening the alienation of vulnerable groups. Without a robust framework to protect against "function creep," data misuse, and caste based profiling, the "scientific objectivity" of the BNSS may inadvertently institutionalize "epistemic injustice" against the rural poor.

Therefore, the path forward does not lie in the rigid enforcement of the text, but in a calibrated, phased implementation. The proposed "HubandSpoke" model, integrated with "Tele forensics" and a "Readiness Based Notification" strategy, offers a viable roadmap to bridge the urban rural divide. Ultimately, the success of the forensic mandate depends on the political will to treat infrastructure and civil liberties as prerequisites, not afterthoughts. As Justice V.R. Krishna Iyer famously reminded us, "The process of justice must not be the punishment." Without immediate investment in rural capacity and rights based safeguards, the forensic mandate risks becoming exactly that: a hightech punishment for the crime of living in rural India. The BNSS must evolve from being a "Paper Tiger" "ferocious in statute but toothless in the village into a functional instrument of democratic justice.

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