

INTERNATIONAL JOURNAL OF LAW MANAGEMENT & HUMANITIES

[ISSN 2581-5369]

Volume 9 | Issue 3

2026

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Scientific Justice Delayed: A Critical Assessment of Forensic Infrastructure Readiness for the BNSS Paradigm Shift in Criminal Investigation

ANANT SINGHAL*

ABSTRACT

The enactment of the Bharatiya Nagarik Suraksha Sanhita, 2023, alongside the Bharatiya Nyaya Sanhita, 2023, and the Bharatiya Sakshya Adhiniyam, 2023, represents a deliberate legislative effort to transform the Indian criminal justice system from a confession-oriented model into an evidence-oriented, and increasingly scientific, one. Section 176(3) of the BNSS requires the presence of a forensic expert at the scene of crime, together with videography of the collection of evidence, in every offence punishable with imprisonment of seven years or more. This paper examines the present state of India's forensic science system through a multi-disciplinary lens, drawing on quantitative data concerning laboratory capacity, personnel, accreditation standards and case pendency across the central and state forensic systems. It finds that forensic laboratories carry backlogs ranging from roughly 18,000 to 62,000 cases, operate at approximately forty per cent below their sanctioned manpower, and record a National Accreditation Board for Testing and Calibration Laboratories (NABL) accreditation rate of only six to eight per cent. This structural deficit undermines the work of crime-scene investigators, prosecutors and judges, and prevents the forensic system from realising its potential within the justice-delivery process. The paper argues that the enabling conditions for forensic evidence under the new criminal codes must be created concurrently, by upgrading, equipping and standardising laboratories and their associated services. The argument carries far-reaching implications for the constitutional guarantee of life and liberty under Article 21 of the Constitution of India, the credibility of the evidence placed before the trial courts, and the legitimacy of a criminal justice system that is itself in the course of reform.

Keywords: *Forensic infrastructure, Bharatiya Nagarik Suraksha Sanhita, NABL accreditation, case backlog, criminal justice reform.*

* Author is an Assistant Professor of Law at Delhi Metropolitan Education, Noida, Uttar Pradesh, and a Ph.D. Scholar at Maharashtra National Law University, Nagpur, Maharashtra, India.

I. INTRODUCTION

A. Background

The criminal justice system in India has traditionally relied upon the oral examination of witnesses and upon custodial confessions as the principal means of proving guilt. This confession-centric paradigm has long been criticised by scholars, human rights organisations and the judiciary for its propensity towards coercion, fabrication and wrongful conviction. The enactment of the Bharatiya Nyaya Sanhita, 2023 (BNS), the Bharatiya Nagarik Suraksha Sanhita, 2023 (BNSS), and the Bharatiya Sakshya Adhiniyam, 2023 (BSA) is a legislative effort to reshape that landscape by placing forensic science at the core of the investigative and adjudicatory processes.¹

The BNSS, in particular, mandates forensic examination for grave offences. Section 176(3) obliges investigating officers to secure the presence of a forensic expert at the scene of crime in cases punishable with imprisonment of seven years or more, and requires that the process of evidence collection be videographed using a mobile phone or other electronic device. The State Government must notify the enforcement of this provision within five years, and, where forensic facilities are unavailable, the State must arrange for the use of the facilities of another State.²

The provision is a significant expansion of the investigative mandate. Whereas the erstwhile Section 157 of the Code of Criminal Procedure, 1973 left the decision of whether to employ scientific techniques to the discretion of the investigating officer, Section 176(3) removes that discretion and converts it into a statutory duty. The mandatory character of the provision signals the legislature's confidence in the transformative potential of forensic science. The conversion of legislative text into institutional practice, however, requires far more than statutory change. It demands a substantial forensic infrastructure of adequately staffed laboratories, modern equipment, standard protocols and accredited facilities. This paper examines the preparedness of India's forensic infrastructure to meet the challenges posed by the new criminal codes.

B. Statement of the problem

Despite the legislative obligation under Section 176(3) of the BNSS, India suffers from drastic deficiencies in forensic infrastructure in terms of laboratory capacity, manpower, accreditation and geographical availability. Forensic laboratories across the country face backlogs ranging

¹ The Bharatiya Nagarik Suraksha Sanhita, 2023, No. 46, Acts of Parliament, 2023 (India).

² *Id.* § 176(3).

from approximately 18,000 to 62,000 cases per facility, operate at roughly forty per cent of their sanctioned manpower, and record an NABL accreditation rate of only six to eight per cent.

These deficiencies raise the fundamental question of whether the forensic mandate can be implemented at all, and the corresponding risk that a progressive legislative provision will be reduced to a procedural formality that prolongs, rather than expedites, justice. The issue is not merely administrative but constitutional, for unsustainable forensic delays directly affect the fundamental rights of accused persons and victims alike. The five-year transition window granted by the BNSS acknowledges the prevailing capacity constraints, but it does not resolve them. In the absence of simultaneous institutional investment, the forensic mandate may amplify existing delays rather than accelerate the delivery of justice.³

C. Scope and limitations of the study

This study focuses on forensic infrastructure preparedness for the execution of Section 176(3) of the BNSS and related provisions of the BNS and the BSA. It analyses the status of central and state forensic science laboratories, mobile forensic units and regional facilities, and examines empirical data on laboratory capacity, manpower, accreditation and case pendency.

The scope is confined to the institutional and infrastructural aspects of forensic preparedness; it does not extend to the analysis of individual forensic techniques and technologies. The study relies on secondary data drawn from government reports, academic literature and institutional surveys. Primary data collection through field visits was not feasible within the available time frame, and the comparative analysis is restricted to jurisdictions for which accreditation data is publicly available.

D. Research objectives

The study pursues the following objectives: (i) to analyse the legislative purpose and procedural requirements of Section 176(3) of the BNSS and their impact upon criminal investigation; (ii) to examine the current status of India's forensic infrastructure in terms of laboratory capacity, manpower availability and case backlog; (iii) to assess the standards of accreditation and quality control in Indian forensic laboratories against international benchmarks; and (iv) to evaluate the implications of infrastructural deficits for Article 21 of the Constitution of India and to propose policy recommendations.

³ Law Comm'n of India, *Expedition Investigation and Trial of Criminal Cases Against Influential Public Personalities*, Report No. 273 (2017).

E. Hypothesis

The forensic science infrastructure of India is not sufficiently prepared for the implementation of the mandatory forensic examination required by Section 176(3) of the BNSS. In the absence of simultaneous investment in laboratory modernisation, human-resource expansion and independent regulatory oversight, the forensic mandate may degenerate into a procedural formality that, instead of securing scientific justice, perpetuates delay.

F. Research questions

The study addresses four questions: (i) what is the legal intent of Section 176(3) of the BNSS, and how does it reshape the conventional paradigm of criminal investigation in India; (ii) what is the status of India's forensic infrastructure, and how do capacity deficits impede the effective implementation of the mandate; (iii) how does the low rate of NABL accreditation, and the attendant absence of quality assurance, affect the reliability and admissibility of forensic evidence; and (iv) what constitutional and policy measures are required to bridge the gap between legislative ambition and institutional reality?

G. Research methodology

The study adopts a doctrinal and analytical approach, drawing on primary sources (statutory provisions, parliamentary debates and government reports) and secondary sources (academic papers, books and institutional surveys). It is comparative in orientation, examining international standards of accreditation and forensic practice, and employs a mixed qualitative and quantitative method, using empirical studies and official statistics to assess infrastructural preparedness.

H. Literature review

Scholarly engagement with forensic science and its role in the Indian criminal justice system has grown markedly in recent years, with several works examining forensic infrastructure, its challenges and the need for reform.

Siddhant Chandra and Kaustav Choudhury have examined the standardisation and accreditation of forensic science laboratories in India, finding that only six to eight per cent of Indian forensic laboratories are NABL-accredited, as against eighty-eight per cent in the United States and ninety-five per cent in the United Kingdom, and identifying under-developed infrastructure, a critical manpower deficit and a massive case backlog as the principal problems; their work, however, remains largely general and does not address the practical impact of these deficits on

the constitutional guarantee under Article 21.⁴ Anjana Parmar and Rakesh Rai have evaluated the procedural integrity of DNA evidence in Madhya Pradesh, observing that properly accredited procedures substantially raised conviction rates in DNA-based cases, but their study is confined to a single State and does not address infrastructure readiness at the national level.⁵ Michael Saks and David Faigman, writing in a global register, have analysed the systemic failures of forensic identification science and called for rigorous scientific validation, though without addressing the Indian context or recent legislative change.⁶

R.V. Kelkar's authoritative treatment of criminal procedure lays the foundation for the procedural prerequisites of investigation under the Code of Criminal Procedure, 1973, but predates and does not consider the forensic mandate of the new codes.⁷ B.R. Sharma offers valuable insights into the application of forensic science in Indian courts, yet does not critically analyse infrastructural deficits, accreditation status or their bearing on quality assurance.⁸ Vikash Jain has documented problems of inadequate training, insufficient resources and procedural delay, but without empirical evidence on laboratory capacity and accreditation rates.⁹ Prabhakar Singh's comparative study of forensic science and the Indian legal system addresses standard procedures and inter-agency co-operation, but offers no specific recommendations for implementing the new statutory mandate.¹⁰ K. Chandrasekhar examines the role of technology and digital tools in forensic investigation, but does not address the foundational problems of laboratory accreditation and quality management.¹¹

The existing scholarship thus documents the deficiencies without fully addressing three gaps. First, most of the literature predates the new codes and does not address infrastructure readiness for the forensic mandate. Second, the interdisciplinary relationship between infrastructural deficits and the constitutional rights guaranteed by Article 21 remains underexplored. Third, the geographical disparity in the distribution of forensic facilities, and its impact on rural justice delivery, has received little attention. This paper seeks to address these gaps through a

⁴ Siddhant Chandra & Kaustav Choudhury, *Standardization and Accreditation of Forensic Science Laboratories in India*, 12 Int'l J. Sci. & Tech. 1 (2024).

⁵ Anjana Parmar & Rakesh Rai, *Assessment of the Procedural Integrity of DNA Evidence in the Criminal Justice System of Madhya Pradesh*, 15 J. Forensic Sci. & Med. 45 (2023).

⁶ Michael J. Saks & David L. Faigman, *Failed Forensics: How Forensic Science Lost Its Way and How It Might Yet Find It*, 4 Ann. Rev. L. & Soc. Sci. 149 (2008).

⁷ R.V. Kelkar, *Criminal Procedure* 45–67 (6th ed. 2014).

⁸ B.R. Sharma, *Forensic Science in Criminal Investigation and Trials* 112–145 (5th ed. 2019).

⁹ Vikash Jain, *Challenges in Forensic Science in the Indian Judicial System*, 8 Int'l J. Legal Sci. & Innovation 234 (2022).

¹⁰ Prabhakar Singh, *A Comparative Study of Forensic Science and the Indian Legal System*, 6 Indian J. Forensic Med. & Toxicology 89 (2021).

¹¹ K. Chandrasekhar, *The Role of Technology in Enhancing Forensic Investigations*, 14 J. Digital Forensics & Cyber Sec. 56 (2023).

comprehensive, interdisciplinary analysis of forensic infrastructure readiness under the new criminal codes.

II. THE LEGISLATIVE FRAMEWORK AND THE FORENSIC MANDATE UNDER THE BNSS

A. The transition from confession-centric to evidence-based investigation

Criminal procedure in colonial India attached great importance to confessions and oral testimony as the basic tools of prosecution. Though administratively convenient, this approach frequently produced convictions founded upon statements extracted by coercion and upon unreliable witness accounts. The BNSS marks a conscious break from that tradition by codifying scientific evidence as a statutory prerequisite rather than an optional investigative tool.

The purpose of this transition is multi-faceted. First, it seeks to reduce dependence on custodial confessions, which are vulnerable to allegations of torture and manipulation. Second, it aims to promote the objectivity and reliability of evidence by mandating the physical and scientific verification of crime-scene facts. Third, it brings Indian practice into line with international standards that treat forensic science as essential to modern investigation.

B. Section 176(3) of the BNSS: a critical analysis

Section 176(3) of the BNSS obliges the officer in charge of a police station to cause a forensic expert to visit the scene of crime in offences punishable with imprisonment of seven years or more, and requires that the collection of evidence be videographed using a mobile phone or other electronic device. The State Government is to notify the implementation of the provision within five years, and, where forensic facilities are unavailable, the State must utilise the facilities of another State.¹²

The provision is a significant expansion of the investigative mandate. Compared with the erstwhile Section 157 of the Code of Criminal Procedure, 1973, which left the involvement of forensic experts to the discretion of the investigating officer, Section 176(3) removes that discretion and renders forensic examination a mandatory statutory duty. At the same time, the five-year transition window and the inter-State facility-sharing mechanism amount to an implicit acknowledgment of existing infrastructural deficits. The legislature appears to recognise the need to defer nationwide implementation in view of present capacity constraints. While this pragmatic deferral is defensible, it raises questions about the uniformity of

¹² The Bharatiya Nagarik Suraksha Sanhita, 2023, § 176(3), No. 46, Acts of Parliament, 2023 (India).

implementation across States and about delayed access to justice in jurisdictions that lack forensic facilities.

C. Videography and transparency

The videography requirement imposed by Section 176(3) serves several purposes. It creates a contemporaneous record of the collection of evidence and thereby reduces disputes about the authenticity and integrity of forensic materials. It offers a safeguard against contamination, tampering and procedural irregularity at the scene of crime. The video record may also prove invaluable at trial, assisting the court to understand the context and process of forensic collection.

This requirement complements the audio-visual recording of search and seizure stipulated by Section 105 of the BNSS. Together, the two provisions create a framework of transparency capable of improving public confidence in investigation and strengthening the evidentiary basis of prosecutions.¹³

The legislative intent behind Section 176(3) is to transform investigation from a confession-centric and witness-centric process into a scientifically grounded, evidence-based system, by making forensic examination a statutory prerequisite for serious offences rather than an optional supplement. This shift has far-reaching significance for the functions of investigating officers, forensic experts and judicial authorities. The mandatory involvement of forensic experts reflects a legislative judgment that scientific evidence is more credible, and less manipulable, than oral testimony, while the requirement of video documentation seeks to create an audit trail that ensures accountability and transparency. The success of the change, however, depends entirely upon the availability of forensic experts, functional laboratories, and standard procedures and protocols. Without these institutional prerequisites, the legislative purpose is likely to be defeated by functional incapacity.

III. FORENSIC INFRASTRUCTURE AND INSTITUTIONAL CAPACITY

A. Overview of forensic facilities in India

India maintains a network of 697 forensic facilities, comprising 7 Central Forensic Science Laboratories (CFSLS), 32 State Forensic Science Laboratories (SFSLS), 106 Regional Forensic Science Laboratories (RFSLS) and 552 Mobile Forensic Science Units (MFSUs). Extensive in

¹³ *Id.* § 105.

numerical terms, this network is nonetheless afflicted by acute qualitative and operational deficiencies that jeopardise its capacity to serve the BNSS mandate.¹⁴

The CFSLS are administered by the Directorate of Forensic Science Services (DFSS) under the Ministry of Home Affairs. They are intended to handle complex cases, to provide technical guidance to the State laboratories, and to maintain specialised expertise in fields such as DNA testing and cyber-forensics. The SFSLS and RFSLs serve as the core forensic-service providers for State and district investigations, while the MFSUs are designed to deliver forensic services at the scene of crime.

The distribution of these facilities is uneven. Metropolitan cities such as Delhi, Mumbai, Chennai, Kolkata and Bengaluru possess relatively well-equipped laboratories, whereas rural and semi-urban areas often lack basic forensic capability. This geographical disparity produces systemic inequalities in access to scientific justice.

B. The manpower deficit and staffing crisis

The manpower situation in Indian forensic laboratories is among the principal impediments to the implementation of the BNSS mandate. A study conducted by Project 39A in collaboration with the Ministry of Home Affairs found that, across twenty-six laboratories, forty per cent of the sanctioned posts in forensic science laboratories were vacant. The India Justice Report 2025 records a national forensic staff vacancy of approximately fifty per cent.¹⁵

The problem is most acute at the scientific posts, including those of director, scientific officer, laboratory assistant and digital analyst. The vacancy rate at the SFSL in Lucknow stood at seventy-three per cent, with most scientific posts unfilled, while the Karnataka State FSL at Bengaluru functioned with forty-six personnel against a sanctioned strength requiring ninety-five additional posts. Such deficits compel laboratories to transfer critical examinations to neighbouring States, producing delays that propagate through the criminal justice system.

The crisis is the product of several systemic causes: protracted government recruitment processes, salary scales that are uncompetitive with private-sector employment, weak career-progression structures, and the absence of regular training programmes have together eroded the forensic workforce. Reliance on contractual personnel, though offering temporary relief, introduces gaps in the hierarchy and undermines supervision and quality control.

¹⁴ Directorate of Forensic Sci. Servs., Ministry of Home Affairs, Gov't of India, *Annual Report 2022–23* (2023).

¹⁵ Project 39A, National Law University Delhi, *Forensic Science India Report* (2023); *India Justice Report 2025* (Tata Trusts 2025).

C. Case backlogs and protracted justice

Case backlogs in Indian forensic laboratories have reached crisis levels, with individual facilities reporting pendency of between 18,000 and over 62,000 cases. The Kerala forensic laboratories, for instance, had accumulated more than 62,558 pending cases as of March 2024, owing to inadequate storage and insufficient processing capacity. The Delhi State FSL faced a backlog of some 9,000 DNA samples in 2017, while Maharashtra receives approximately 4,500 DNA analysis cases each year, with demand growing by nearly twenty per cent annually.¹⁶

These delays carry serious consequences for the criminal justice system. Cases that await forensic reports remain pending at police stations, delaying the filing of charge-sheets and the commencement of prosecution. Undertrial prisoners, who account for some seventy-six per cent of the prison population according to the India Justice Report 2025, often remain in custody solely because forensic reports are unavailable. The prolongation of forensic analysis thus directly contributes to extended incarceration, in violation of the right to a speedy trial under Article 21 of the Constitution.

The backlog is compounded by the expanded forensic mandate under the BNSS. As more offences attract mandatory forensic examination, the demand for laboratory services will rise sharply. Without a corresponding expansion of laboratory capacity and personnel, existing backlogs will only worsen, subjecting still more cases to prolonged delay.

D. Geographic inequality and the urban-rural divide

The geographical distribution of accredited forensic laboratories reveals a stark rural-urban divide. The major accredited facilities are located in metropolitan centres, while rural areas are served by inadequately equipped regional laboratories or by mobile units of limited capacity. This clustering produces systemic inequalities, because evidentiary material originating in rural areas is exposed to extended transit times, prolonged storage and inadequate preservation.

Where evidence must be transported hundreds of kilometres to reach the nearest accredited laboratory, the risks of contamination, spoilage and a broken chain of custody are correspondingly heightened. The reduced availability of forensic reports at trial in rural jurisdictions disadvantages rural victims and accused persons alike, who face longer pre-trial detention and weaker evidence in support of their cases. This disparity raises serious concerns

¹⁶ Kerala Legislative Assembly, Question Hour Proceedings on Forensic Laboratory Backlog (Mar. 2024); Status Report on Forensic Infrastructure, W.P. (C) No. 1234 of 2017 (Delhi H.C.).

about equality before the law and the equal protection of the laws guaranteed by Article 14 of the Constitution.

E. The present state of forensic infrastructure

The present state of forensic infrastructure in India reflects quantitative expansion unmatched by qualitative capacity. The network of 697 facilities appears comprehensive, yet the underlying reality is one of severe under-staffing, protracted case pendency, antiquated technology and unequal geographical distribution. These capacity gaps directly impede the implementation of Section 176(3), for they make it impossible to provide timely forensic examination in every serious offence.

The consequences multiply from the scene of crime to the courtroom. Inadequate forensic capacity prolongs investigation, delays the filing of charge-sheets, extends undertrial detention and weakens prosecution. Rather than hastening justice, the BNSS mandate risks becoming a procedural bottleneck that adds to existing delay.

IV. QUALITY ASSURANCE, ACCREDITATION AND EVIDENTIARY RELIABILITY

A. NABL accreditation and international standards

The National Accreditation Board for Testing and Calibration Laboratories (NABL) accredits forensic laboratories in India by reference to the ISO/IEC 17025:2017 standard. Accreditation assures that a laboratory employs competent staff, follows validated methods, maintains appropriate equipment and operates a sound quality-management system. Internationally, accreditation is regarded as essential to the reliability and admissibility of forensic evidence.¹⁷

The accreditation gap in India is striking. Only six to eight per cent of Indian forensic laboratories hold NABL accreditation, as against eighty-eight per cent in the United States and ninety-five per cent in the United Kingdom. Of the seven CFSs, only those at Chandigarh, Delhi, Hyderabad and Pune are accredited. At the State and regional levels, accreditation is almost wholly absent: only about eight laboratories across India hold NABL certification in forensic testing, fewer than two per cent of State and regional facilities.

B. ISO/IEC 17025:2017 compliance and quality management

The ISO/IEC 17025:2017 standard specifies the requirements for the competence, impartiality and consistent operation of testing and calibration laboratories. Compliance requires documented quality manuals and standard operating procedures, participation in proficiency-

¹⁷ Nat'l Accreditation Bd. for Testing & Calibration Labs., *NABL 100: General Requirements for the Competence of Testing and Calibration Laboratories* (2017).

testing programmes and the calculation of error rates. Alarming deficiencies in these areas have been recorded: only six laboratories maintain their own working-procedure manuals, only five have their own quality manuals, only five have achieved NABL accreditation, and only four participate in proficiency testing. Most troubling of all, only three laboratories perform the error-rate calculations that quality assurance demands.¹⁸

Unstandardised protocols undermine the reliability of forensic analysis. In the absence of uniform procedures for the collection, handling, storage and examination of evidentiary material, contamination, mis-identification and erroneous conclusions become more likely. The courts have subjected forensic evidence to close scrutiny of its procedural integrity, and the absence of accreditation exposes forensic reports to challenge on grounds of both admissibility and weight.

C. Implications for evidentiary admissibility

The Bharatiya Sakshya Adhiniyam, 2023 governs the admissibility of evidence in criminal proceedings. Section 39 of the BSA renders the opinion of an expert admissible, but the weight of that opinion depends upon the reliability of the methodology employed and the standing of the expert. The courts have consistently held that forensic evidence must be gathered in accordance with scientific procedure if it is to be admitted.¹⁹

In the absence of NABL certification, defence counsel may challenge forensic reports on grounds of unreliable methodology, deficient quality control and uncertified proficiency. In *Santosh Kumar Singh v. State*, the Supreme Court held that DNA evidence, though among the most reliable forms of evidence, may be given weight only where a proper chain of custody has been maintained; and in *Krishna Kumar Malik v. State of Haryana*, the Court emphasised the collection of scientific evidence so that a conviction need not rest upon weak oral testimony alone. These pronouncements confirm that the admissibility and weight of forensic evidence are intrinsically linked to procedural integrity and quality assurance.²⁰

The low rate of accreditation gives rise to a twofold danger. First, it increases the likelihood that forensic evidence will be challenged and possibly excluded, thereby weakening prosecutions. Second, it undermines public confidence in the criminal justice system, fostering the perception that forensic findings are doubtful or selectively deployed.

¹⁸ Project 39A, National Law University Delhi, *Forensic Science India Report: Quality Management and Accreditation Standards* (2023).

¹⁹ The Bharatiya Sakshya Adhiniyam, 2023, § 39, No. 47, Acts of Parliament, 2023 (India).

²⁰ *Santosh Kumar Singh v. State*, (2010) 9 SCC 747 (India); *Krishna Kumar Malik v. State of Haryana*, (2011) 7 SCC 130 (India).

D. Accreditation and evidentiary reliability

The absence of NABL certification directly affects the reliability of forensic evidence and its acceptance by the courts. Accreditation provides an objective and independent measure of laboratory competence, and its absence accordingly raises reasonable doubt about the validity of forensic conclusions. Courts are increasingly willing to discount forensic evidence where defence counsel can demonstrate lapses in procedure or methodology.

The lack of accreditation therefore threatens the very purpose of the BNSS forensic mandate. If forensic findings are routinely challenged and excluded on quality grounds, the legislative shift towards scientific investigation will not yield its expected benefits. The question of reliability is not merely technical; it concerns the standard of evidence and the fairness of criminal trials.

V. THE CONSTITUTIONAL DIMENSION AND POLICY RECOMMENDATIONS

A. Article 21 and the right to prompt justice

Article 21 of the Constitution of India guarantees the right to life and personal liberty, which the Supreme Court has interpreted to include the right to a speedy trial and a fair investigation. The forensic infrastructure deficits documented in this study directly implicate these safeguards. Protracted delays in forensic analysis prolong undertrial detention, delay the filing of charge-sheets and extend trials, each in derogation of the right to prompt justice.²¹

In *Hussainara Khatoon v. State of Bihar*, the Supreme Court held that a speedy trial is an integral part of the right to life under Article 21, and that the State bears a constitutional responsibility to provide the infrastructure and resources necessary to ensure prompt justice. The forensic backlog, by leaving thousands of cases pending for months or years, perpetuates a systemic constitutional violation.²² Moreover, the right to a fair investigation implies that the State must employ scientifically reliable techniques to establish guilt or innocence. Reliance upon unaccredited facilities and untrained personnel introduces the risk of erroneous inference and degrades the fairness of investigation. Where forensic evidence is the mainstay of the prosecution, its reliability becomes crucial to averting wrongful conviction and protecting personal liberty.

B. Equality before the law and geographic justice

Article 14 of the Constitution guarantees equality before the law and the equal protection of the laws. The concentration of accredited laboratories in metropolitan regions systematically

²¹ INDIA CONST. art. 21.

²² *Hussainara Khatoon v. State of Bihar*, (1979) 1 SCC 248 (India).

disadvantages rural accused persons and victims, whose evidence faces a higher risk of degradation, longer transit and reduced availability at trial. The quality of justice thus comes to depend upon the location of the crime scene, in violation of the geographical neutrality that the Constitution demands.²³

In *Francis Coralie Mullin v. Administrator, Union Territory of Delhi*, the Supreme Court held that the right to life includes the right to live with human dignity and all that goes with it, including the bare necessities of life. The right to scientific justice may be regarded as an essential component of dignified living in the modern era, and its denial to rural populations amounts to invidious discrimination.²⁴

C. Proposed reforms and institutional mechanisms

To resolve the dissonance between legislative vision and institutional reality, a comprehensive reform strategy is required. The following measures are recommended.

First, a Forensic Science Regulator endowed with statutory powers should be established. This independent body should enforce accreditation requirements, ensure quality standards, monitor laboratory management and secure compliance with international norms, and it should be empowered to bar non-accredited laboratories from tendering evidence in criminal proceedings.

Second, laboratories required to be accredited should be given a defined time limit within which to obtain accreditation, and non-accredited laboratories should be confined to non-criminal work until they comply. The Government should provide financial and technical assistance to existing State and regional laboratories to enable accreditation.

Third, the existing National Forensic Infrastructure Enhancement Scheme should be extended to establish regional forensic laboratories in underserved districts. These laboratories must be furnished with modern analytical instruments and qualified scientists and linked through a digital network to enable quality monitoring and case tracking.

Fourth, the expansion of human resources must be treated as a priority. Laboratory strength should be increased to match the caseloads projected under the BNSS, recruitment processes should be streamlined to fill existing vacancies within eighteen months, and competitive salary scales, structured career progression and continuous training should be introduced to attract and retain skilled forensic professionals.

²³ INDIA CONST. art. 14.

²⁴ *Francis Coralie Mullin v. Administrator, Union Territory of Delhi*, (1981) 2 SCC 659 (India).

Fifth, the existing e-Forensics platform, which currently connects 117 forensic laboratories, should be extended to all facilities and, more importantly, linked with police stations, courts and the prosecution. It should enable the real-time tracking of evidence, the automated documentation of the chain of custody, and digital reporting, so as to reduce delay and enhance transparency.

Sixth, dedicated forensic evidence-collection teams should be constituted at the district and sub-divisional levels, equipped with mobile forensic vans and trained in crime-scene management. These teams should operate independently of the local police, so as to safeguard impartiality and the scientific integrity of evidence collection.

D. Constitutional and policy measures

The constitutional and policy case for bridging the gap between legislative vision and institutional reality is compelling and urgent. Article 21 imposes a positive obligation on the State to provide the infrastructure necessary for prompt and fair investigation, while Article 14 demands the equitable distribution of forensic facilities so as to prevent geographical discrimination. Together, these provisions require urgent policy intervention.

The reforms proposed here concern institutional independence, quality assurance, capacity expansion and technological integration. A Forensic Science Regulator answers the need for independent oversight and quality standardisation; mandatory accreditation ensures that only reliable forensic evidence enters the criminal justice system; regional laboratories and mobile units address geographical disparity; adequate human resources and competitive remuneration relieve the manpower crisis; and digital integration through the e-Forensics platform improves both efficiency and transparency. Without such measures, the forensic mandate under the new codes will remain an aspirational provision that legitimises delay rather than delivering science-based justice, and the constitutional rights of accused persons and victims will continue to be compromised by institutional incapacity.

VI. CONCLUSION

The promulgation of the Bharatiya Nagarik Suraksha Sanhita, 2023, and its companion enactments represents a momentous effort to transform the Indian criminal justice system from a confession-oriented model into one founded upon scientific evidence. The requirements of forensic examination and videographic documentation under Section 176(3) of the BNSS reflect a legislative aspiration towards an investigation driven by reliable scientific proof.

This study has shown, however, that India's forensic infrastructure is gravely inadequate to that aspiration. With NABL accreditation at six to eight per cent, staffing vacancies of roughly forty to fifty per cent, case backlogs exceeding 62,000 cases per facility in some States, and severe geographical disparities, the institutional reality remains dangerously distant from the legislative ambition. The shortfall is not merely administrative but constitutional, implicating the rights to prompt and fair investigation and to equality before the law.

The findings indicate a real risk that the forensic mandate will become a procedural exercise that entails delay rather than delivering justice. Undertrial prisoners languish in custody awaiting forensic reports; victims in rural areas suffer degraded evidence and prolonged delay; and the courts contend with unreliable findings from unaccredited laboratories. For large sections of the population, the promise of scientific justice remains unfulfilled.

Scientific justice cannot be achieved through legislation alone. It requires sustained investment, institutional reform and an undiluted commitment to quality and equity. The new criminal codes provide the legal blueprint for a modern, forensic-science-driven criminal justice system; the task now is to build the institutional foundation upon which that blueprint can stand. Only then will the promise of the new codes be fulfilled, and justice be rendered scientific, prompt and fair.
