

Justice Through Science: Evaluating Role of Forensics under the New Indian Criminal Reforms 2023

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ABSTRACT

In 2023, India as a nation embarked on a whole new transformative journey and introduced the new criminal laws.¹ The new laws in the criminal justice system marked an indianized version of the criminal laws prevalent since 1860. The laws are Bhartiya Nyaya Sanhita (BNS) ; Bhartiya Nagarik Suraksha Sanhita (BNSS) and Bhartiya Sakshya Adhiniyam (BSA) 2023. All the three laws replaced the Indian Penal Code 1860 ; Criminal Procedure Code 1973 and The Indian Evidence Act 1872 respectively in force since the British era. Many provisions have been retained because of their alignment with framework of our constitution and its effectiveness in serving the aim of justice towards a much larger scope.

Forensic Science being the centre of this paper serves to be an application of scientific methods and techniques to the investigation of crimes.² It has the ability to link suspects to the crime scenes , recognize and identify the similarity of situations and patterns. Basically, it refers to the physical evidence the crime suspects leave behind while committing the crime like fingerprints , DNA Samples or voice recordings.³ Further, it also in a way nullifies the fake alibi set up by the suspects in the matters involved.

The relation between Forensic Science and the newly enacted criminal laws becomes quite evident when it comes to the alarming rates of criminal activities surfacing in the contemporary times. The novel laws strive to improve the collection and use of forensic evidences in criminal investigations making them more detailed and thorough with additional surge in the number of convictions in the country today. The laws are basically introduced to modernize the criminal code of India and enhance the nuances of public safety. With the authentication of Forensic analysis in criminal investigations, the suspects won't be provided an undue advantage in escaping the allegations. Additionally, the inclusion and advancement of Forensic Science into the realm of criminal justice system will revise a quicker process of the adjudications and protect the victims accustomed to false criminal allegations.

As much as the new laws boost the credibility of forensic scientific analysis, conversely or on the contrary, the prevalence of certain provisions under the Bhartiya Nagarik Suraksha Sanhita 2023 like the

¹ Vidhi Solanki , ' Prevalence of Forensic Science in the new criminal laws' (Lexicon Legal , July 8 2025) < <https://lexiconlegal.in/prevalence-of-forensic-science-in-the-new-criminal-laws/>> accessed on 1 August 2025

² Dr. Navpreet Kaur , ' Bhartiya Nyaya Sanhita : Reforming the Indian Penal Code ' (E-Journal Times Magazine, January 15 2025) < <https://journals-times.com/2025/01/15/forensic-evidence-in-indias-new-criminal-laws/>> accessed on 1 August 2025

³ Dr. Navpreet Kaur , ' Bhartiya Nyaya Sanhita : Reforming the Indian Penal Code ' (E-Journal Times Magazine, January 15 2025) < <https://journals-times.com/2025/01/15/forensic-evidence-in-indias-new-criminal-laws/>> accessed on 1 August 2025

inclusion of private forensic experts in crime scene investigations and restriction of judicial scrutiny for forensic evidences holds back the possibility of transparency and accountability which the new criminal laws claim to showcase.⁴

There are many such reasons for opting the perspective of viewing the administration of Justice in India from a lens of Forensic Science and Analysis on the forefront. One such reason for determining the arena of forensic science as part of the criminal justice system as the title of this research paper is the evolving nature of gathering and collection of evidences during criminal investigations and the inquisitiveness behind its procedure. Exploration of such evolution and evaluating its pros and cons serves an outlook that becomes the need of the hour for the future generations to come and act upon.

Keywords: New Criminal laws ; Forensic Science ; Criminal investigations ; Administration of Justice ; Criminal Justice System

INTRODUCTION

On December 25, 2023 the Indian Government introduced the new criminal bills proposing the enactment of Bhartiya Nyaya Sanhita (BNS); Bhartiya Nagarik Suraksha Sanhita (BNSS) and Bhartiya Sakshya Adhinyam (BSA).⁵ The bills aimed at replacing the Indian Penal Code (IPC) 1860 ; Criminal Procedure Code (CrPC) 1972 and The Indian Evidence Act (IEA) 1872. The bills were again introduced in the parliament after being referred to the parliamentary standing committee on Home Affairs and incorporating their suggested recommendations. The new bills were then passed on December 21, 2023. Later, on December 25, 2023, they got the president's approval as well.

There were numerous reasons to bring up the new criminal laws. One of the primary factors was to transform the colonial legacy the old laws have been carrying for decades and provide the Indian Citizens their individualistic protection of rights and duties and break the chain of serving the imperial interests. Another factor was due to changing technological advancements and social dynamics, the advent of novel criminal laws was much in need. The old laws would not have been effective in tackling and dealing with the new age offences.

Further, the old or previous criminal laws were constructed in a way which made the administration of justice procedurally cumbersome and inefficient. There was overload of cases in the court rooms which ultimately delayed the investigations and much further the trials including the unnecessary halt in the conviction rates. Moreover, there was an utter need of legal clarity and uniformity within the criminal justice system and the old laws had outdated language which ultimately was leading to inconsistent interpretations of law. Therefore, the new laws basically aimed at launching a whole new aspect of dealing with the evolution of justice, human rights and governance mechanisms.

Moreover, Forensic Science is as important to the modern criminal justice system as everything else. It has the factor of acting as a bridge between science and law.⁶ It further consists the aspect of investigating crimes through scientific methods. Analysis of criminal evidences and most importantly,

⁴ Criminal Law Bills Decoded # 17 : Forensic Evidence (Project 39A, 15 November 2023) <https://p39ablog.com/2023/11/criminal-law-bills-2023-decoded-17-forensic-evidence/> accessed on 1 August 2025

⁵ Aishwarya Khare, Mudra Singh , 'Analysis of New and old Criminal Laws in India' (2025) 12(2) IJRAR <<https://ijrar.org/papers/IJRAR25B1550>> accessed on 19th August 2025.

⁶ Adv Hemant More , 'Role of Forensic Science in Modern Criminal Justice' (The Legal Quotient,18 April 2025) <<https://thelegalquotient.com/criminal-laws/forensic-science/the-role-of-forensic-science-in-modern-criminal-justice/6881/>> accessed 19th August 2025.

providing the required assistance in legal proceedings.⁷ Further, it serves as an essential tool for law enforcement mechanisms, helping the lawyers and judges an upper hand in delivering justice based purely on facts and figures instead of vague testimonies and assumptions.

OVERVIEW OF THE NEW CRIMINAL LAWS

Firstly, the Indian Penal Code 1860 was replaced by the Bhartiya Nyaya Sanhita 2023. The new legislation highlights the evolving nature of cultural, political and technical context of the country.⁸ Indian Penal Code was prevalent since the British rule and needed a transformation due to its age old English concepts that made the Indian continent disconnect with it.⁹ The new law came up to speed up the contemporary legal as well as other challenges and form new ways and methods to tackle the advanced nature of crimes. There have been several inconsistencies observed under the IPC. Some of them are it lacked provisions related to modern day digital crimes like cyber crime; it surpasses the attention upon the offences like mob-lynching or organized crimes ; Although both the statutes includes death penalty as a form of punishment but BNS considers death penalty as an option in rarest of the rare cases like the Nirbhaya Case (2012).

Certain major changes made under Bhartiya Nyaya Sanhita are: 1) Sedition under 124A IPC is no longer an offence under BNS¹⁰. It has been successfully replaced by Acts Endangering India's sovereignty, unity and integrity under Section 152 BNS.

2) Adultery under Section 497 IPC has been removed from the ambit of being an offence under BNS after the landmark judgement in Joseph Shine V. Union of India (2018)¹¹ which stated that Section 497 IPC is violative of Article 14, 15 and 21 of the Indian Constitution.¹²

3) Online crime and Cyber Crime didn't get recognized under the IPC since it wasn't much in knowledge of the society at that time although Fraud under Section 420 IPC was there but it was ineffective for addressing the digital crimes. But under BNS, provisions for identity theft, hacking and online financial frauds are introduced.¹³

And many more...

Secondly, the Criminal Procedure Code (CrPC) 1973 was replaced by the Bhartiya Nagarik Suraksha Sanhita (BNSS) 2023. The core agenda behind such replacement with an ultimate aim of BNSS to make

⁷ Adv Hemant More , 'Role of Forensic Science in Modern Criminal Justice' (The Legal Quotient,18 April 2025) <<https://thelegalquotient.com/criminal-laws/forensic-science/the-role-of-forensic-science-in-modern-criminal-justice/6881/>> accessed 19th August 2025.

⁸ Ayush Chandra, 'All Major and Minor Changes in India's New Criminal Laws: BNS, BNSS AND BSA Explained' (Legal Onus,10 November 2024) <<https://legalonus.com/all-major-and-minor-changes-in-indias-new-criminal-codes-bns-bnss-and-bsa-explained/>> accessed 19th August 2025.

⁹ Ayush Chandra, 'All Major and Minor Changes in India's New Criminal Laws: BNS, BNSS AND BSA Explained' (Legal Onus,10 November 2024) <<https://legalonus.com/all-major-and-minor-changes-in-indias-new-criminal-codes-bns-bnss-and-bsa-explained/>> accessed 19th August 2025.

¹⁰ Ayush Chandra, 'All Major and Minor Changes in India's New Criminal Laws: BNS, BNSS AND BSA Explained' (Legal Onus,10 November 2024) <<https://legalonus.com/all-major-and-minor-changes-in-indias-new-criminal-codes-bns-bnss-and-bsa-explained/>> accessed 19th August 2025.

¹¹ 2018 SC 1676

¹² Ayush Chandra, 'All Major and Minor Changes in India's New Criminal Laws: BNS, BNSS AND BSA Explained' (Legal Onus,10 November 2024) <<https://legalonus.com/all-major-and-minor-changes-in-indias-new-criminal-codes-bns-bnss-and-bsa-explained/>> accessed 19th August 2025.

¹³ Ayush Chandra, 'All Major and Minor Changes in India's New Criminal Laws: BNS, BNSS AND BSA Explained' (Legal Onus,10 November 2024) <<https://legalonus.com/all-major-and-minor-changes-in-indias-new-criminal-codes-bns-bnss-and-bsa-explained/>> accessed 19th August 2025.

procedural law more citizen friendly and transparent with a larger emphasis on administration of justice and accountability. The BNSS longs for a criminal justice system that caters towards the protection of the rights of the victims and preserves individual liberty.

CrPC had quite inadequacies like delayed trials leading prolonged victim suffering; large number of undertrial prisoners and most importantly, lacking in terms of technological advancements and leading to expanding difficulties in terms of digital crimes.¹⁴ On the other hand, BNSS aims to speed up the trials and freeing the victims from the turmoil of being an undertrial prisoner for decades. Further, it allows for filing of E-FIRs instead of just jotting down of FIRs manually for better access and storage. Unlike CrPC, BNSS includes provisions for the protection of witnesses by keeping their identity confidential for their safety.

Thirdly, the Indian Evidence Act 1872 was replaced by the Bhartiya Sakshya Adhiniyam (BSA) 2023. The Indian Evidence Act dealt with the rules and standards for presenting evidences in the court of law.¹⁵ The advent of the new legislation of BSA emphasizes to incorporate a whole new inclusive approach in order to match up to the changing needs and demands of courts in the evidentiary law of the country.¹⁶

Indian Evidence Act in a way became outdated in its provisions because of its prevalence since the last 150 years. It had a complex set of rigidity in its language and the burden of proof used to fall entirely upon the prosecution and it failed to comply with the evolving legal doctrines. On the contrary, BSA has offered inclusion of electronic evidences through forensic analysis with additional admissibility of secondary electronic evidences as well. It further allows for recording of testimony of witnesses through video conferencing. Moreover, there has been much ease rendered upon the factor of burden of proof and simultaneously, caters to the methods which can be put into use for witness protection like anonymity, relocation and other security safeguards.¹⁷

FORENSIC SCIENCE : PREVALENCE IN CRIMINAL INVESTIGATIONS

Forensic Science involves application of scientific methods and principles for addressing questions of legal context particularly criminal investigations.¹⁸ In other words, it basically is a process of obtaining information with the objective of presenting the same in the court of law. These sort of evidences are in the form of DNA samples, fingerprints etc to gain the factual proof of involved suspects in the matter. It has the ability to dismiss the fake alibi setup by the suspects in the crime scenes. Forensic evidences have served to be one step ahead of common evidences which could be manipulated at will.

¹⁴ Ayush Chandra, 'All Major and Minor Changes in India's New Criminal Laws: BNS, BNSS AND BSA Explained' (Legal Onus, 10 November 2024) <<https://legalonus.com/all-major-and-minor-changes-in-indias-new-criminal-codes-bns-bnss-and-bsa-explained/>> accessed 19th August 2025.

¹⁵ Ayush Chandra, 'All Major and Minor Changes in India's New Criminal Laws: BNS, BNSS AND BSA Explained' (Legal Onus, 10 November 2024) <<https://legalonus.com/all-major-and-minor-changes-in-indias-new-criminal-codes-bns-bnss-and-bsa-explained/>> accessed 19th August 2025.

¹⁶ Ayush Chandra, 'All Major and Minor Changes in India's New Criminal Laws: BNS, BNSS AND BSA Explained' (Legal Onus, 10 November 2024) <<https://legalonus.com/all-major-and-minor-changes-in-indias-new-criminal-codes-bns-bnss-and-bsa-explained/>> accessed 19th August 2025.

¹⁷ Ayush Chandra, 'All Major and Minor Changes in India's New Criminal Laws: BNS, BNSS AND BSA Explained' (Legal Onus, 10 November 2024) <<https://legalonus.com/all-major-and-minor-changes-in-indias-new-criminal-codes-bns-bnss-and-bsa-explained/>> accessed 19th August 2025.

¹⁸ Sunaina Jeevani. 'Role of Forensic Evidence in Indian Criminal Justice System' (2024) 4(4) IJLR <<https://ijlr.iledu.in/wp-content/uploads/2024/11/V4I473.pdf>> accessed 19th August 2025.

History of Forensic Development in India

- First forensic science laboratory was setup in India in the year 1952.¹⁹ It served as the starting point for basic forensic laboratory services in the country for more of a science centric solutions in criminal investigations.
- In 1980s, forensic practices and analysis in India starting using molecular and analytical techniques including fingerprint analysis and ballistics.²⁰
- In 1990s, DNA testing gained worldwide recognition and was acknowledged in India as well as a credible form of electronic evidence.

Today, Forensic Science has the acknowledgement it deserves from every end of the world because of consistent usage of digital forensics, toxicology, cyber forensics and much more.

Types of Forensic Evidences

- **Forensic Toxicology** : It refers to the analysis of biological fluids like urine, blood in order to identify the presence of toxic chemicals like drugs, alcohol , poison etc. It is basically used for postmortem analysis , drug testing at workplaces etc.²¹
- **Forensic Pathology** : It refers to a special medical analysis where the cause, manner and time of death is identified through medico-legal autopsies.²²
- **Forensic Odontology** : It refers to the analysis of dental records, bites etc to identify unidentified human remains which can be used to match people as teeth are resistant to endure fires and decomposition.²³
- **DNA Analysis** : DNA Profiling refers to the process of examining particular areas of one's DNA in order to form a gender specific profile specific to different individuals.²⁴ It is helpful in victim identification , biological relationships and most importantly, in order to match the evidences to the suspects in criminal investigations.
- **Digital Forensics** : It basically the process of recovery, examination and preservation of electronic or computer evidences from computers, mobile phones or any other hard drives.²⁵ It serves to be crucial steps in crimes like cyber crimes, monetary crimes, hacking , online financial frauds etc.
- **Forensic Ballistics** : This type is concerned about the analysis of weapons, bullets and gunpowder residues.²⁶ This further involves identification of entry and exit wounds with ballistic fingerprints in order to connect it with the crime scene investigations.

¹⁹ Sunaina Jeevani. 'Role of Forensic Evidence in Indian Criminal Justice System' (2024) 4(4) IJLR < <https://ijlr.iledu.in/wp-content/uploads/2024/11/V4I473.pdf> > accessed 19th August 2025.

²⁰ Sunaina Jeevani. 'Role of Forensic Evidence in Indian Criminal Justice System' (2024) 4(4) IJLR < <https://ijlr.iledu.in/wp-content/uploads/2024/11/V4I473.pdf> > accessed 19th August 2025.

²¹ 'Forensic Science : Definition and Scope' (Budding Forensic Expert ,17 July 2025) <<https://www.buddingforensicexpert.in/2025/07/forensic-science-definition-and-scope.html>> accessed 19th August 2025.

²² 'Forensic Science : Definition and Scope' (Budding Forensic Expert ,17 July 2025) <<https://www.buddingforensicexpert.in/2025/07/forensic-science-definition-and-scope.html>> accessed 19th August 2025.

²³ 'Forensic Science : Definition and Scope' (Budding Forensic Expert ,17 July 2025) <<https://www.buddingforensicexpert.in/2025/07/forensic-science-definition-and-scope.html>> accessed 19th August 2025.

²⁴ 'Forensic Science : Definition and Scope' (Budding Forensic Expert ,17 July 2025) <<https://www.buddingforensicexpert.in/2025/07/forensic-science-definition-and-scope.html>> accessed 19th August 2025.

²⁵ 'Forensic Science : Definition and Scope' (Budding Forensic Expert ,17 July 2025) <<https://www.buddingforensicexpert.in/2025/07/forensic-science-definition-and-scope.html>> accessed 19th August 2025.

²⁶ 'Forensic Science : Definition and Scope' (Budding Forensic Expert ,17 July 2025) <<https://www.buddingforensicexpert.in/2025/07/forensic-science-definition-and-scope.html>> accessed 19th August 2025.

Significance of Forensic Evidence in Criminal Investigations

Forensic Evidences have the ability to untangle the link between the crime scene , victim and the potential suspects and particularly, this kind of evidence serves as an outlook being the most critical value in obtaining the required solution for the case prosecution.²⁷ Further, modern day forensic techniques and methods have enriched and advanced the investigative abilities in criminal cases.

Majorly, Forensic Evidences have the capability to link suspects to the crime scenes through various means like DNA Profiling, fingerprint matching, ballistics and digital forensics. It can offer irrefutable proof of association of the suspects with the crime scene in order to secure the conviction. For instance , Nirbhaya Case (2012)²⁸ had forensic evidences and analysis as its major focal point of investigation which ultimately identified the link of the accused to the crime and the crime scene.²⁹

Moreover, Forensic Evidences also establish a modus operandi (mode of operating) in the crime scenes. Through the recognition of shared features of crime scenes and association of such forensic evidences involved from the criminal investigations leads to effective law enforcement to gain clinically relevant information about the problematic behaviour and act of the offender. For instance, in the case of State of Maharashtra V. Sukh Ram (1992)³⁰, forensic evidence was employed to reconstruct the modus operandi was the serial rapist in the matter.³¹ The investigating unit found the shared patterns of the same all around the country and thus established a well informed and authentic modus operandi.

INTEGRATION OF FORENSIC SCIENCE UNDER THE NEW CRIMINAL LAWS

Forensic Science is the combination of science and law in order to gain forensic justice at best. It provides neutral and reproducible evidence and scientific validation which can be used both for inculpation as well as exculpation.³²

The Bhartiya Nagarik Suraksha Sanhita 2023 replaced the Criminal Procedure Code 1973 with an aspiration to transform the Indian criminal justice system and integrate the same with advanced technology and modern forensic methods to form a transparent , efficient and productive legal framework.

There have been extensive reformations made under the Bhartiya Nagarik Suraksha Sanhita 2023. Some of the majors reforms are digitization of judicial processes. The law basically instills the use of electronic communication and audiovisuals for conducting judicial proceedings and trials.

Section 530 under the **BNSS** mandates the electronic communication and registration of E-FIR as well.³³ Further, **Section 105** under the **BNSS** mandates the audio and visual recording of search and seizure operations in order to bring up transparency in to the process of collection of evidences and

²⁷ Sunaina Jeevani. 'Role of Forensic Evidence in Indian Criminal Justice System' (2024) 4(4) IJLR < <https://ijlr.iledu.in/wp-content/uploads/2024/11/V4I473.pdf> > accessed 19th August 2025.

²⁸ Mukesh & Anr V. State of NCT of Delhi & Ors. (2012) 6 SCC 1

²⁹ Sunaina Jeevani. 'Role of Forensic Evidence in Indian Criminal Justice System' (2024) 4(4) IJLR < <https://ijlr.iledu.in/wp-content/uploads/2024/11/V4I473.pdf> > accessed 19th August 2025.

³⁰ State of Maharashtra V. Sukh Ram AIR 1992 SC 1356

³¹ Sunaina Jeevani. 'Role of Forensic Evidence in Indian Criminal Justice System' (2024) 4(4) IJLR < <https://ijlr.iledu.in/wp-content/uploads/2024/11/V4I473.pdf> > accessed 19th August 2025.

³² Dr. D.K Goswami, 'Forensic Justice : Bhartiya Nagarik Suraksha Sanhita mandates forensic inspection for heinous crimes' (ET Government, 7 July 2024) <<https://government.economictimes.indiatimes.com/blog/forensic-justice-bhartiya-nagarik-suraksha-sanhita-mandates-forensic-inspection-of-heinous-crimes/111549041>> accessed 19th August 2025.

³³ 'The Bhartiya Nagarik Suraksha Sanhita 2023: A New Era of Technological Integration into Criminal Justice' (The Legal Lock) <<https://thelegallock.com/the-bharatiya-nagarik-suraksha-sanhita-2023-a-new-era-of-technological-integration-in-criminal-justice/>> accessed 19th August 2025.

proofs.³⁴ These sections are incorporated to cut down the extra time due to extensive paperwork and minimize the risk surrounding manipulation of evidences. Additionally, this particular change has shifted the face of the Indian legal system with the entire process from initial hearings to final judgments now being able to go digital entirely. By opting and catering to the contemporary technological advancements and needs of the society, there is a special emphasis upon the logistical challenges and ensuring that the judicial proceedings are conducted on time. The integration of Electronic FIR also facilitates better data management and tracking of cases. It increases the possibility of management of police forces and enhances their ability to manage and monitor criminal cases in the most efficient manner. Primarily, it is expected to reduce procedural delays in the Indian criminal justice system.

The mandatory provision of conducting of audio and visual recording under **Section 105** of BNSS also includes the recording of audio video recordings of witnesses during courtroom trials which are digitally documented leading to least possibility of manipulation or distortion of evidences. **Section 173(1)** and **Section 183(6)** has the provision for maintenance of continuity in recordings of audios and videos especially, for the victims that are vulnerable and have any sort of mental or physical disabilities.³⁵ Basically, the reason behind monitoring such continuance is the need of the Indian legal and judicial system to get their documents accurately documented for better future reference and get it reviewed with accuracy and authenticity by professionals.

Section 176(3) under the **BNSS** necessitates the need of videography in collection of forensic evidences.³⁶ This provision is designed to enhance the credibility and transparency of forensic processes. It has the ability to prevent irregularities and ensure that the forensic evidences are maintained and protected from external threats or distortions. This not only preserves the integrity of the legal procedures but also provides the required support that the established procedures and methods need to sustain the legal system.

Section 39 of the Bhartiya Sakshya Adhinyam (BSA) 2023 hasn't really defined the term "experts" under its explanation of allowing the experts in analyzing the situation in case of questions related to foreign law or science or art or any other field. There were a huge set of ambiguities in interpretations in the court of law due to such unexplainable term like "Specially skilled" being incorporated.³⁷

Due to such non clarification in it, in the case of *H.P V. Jai Lal* (1999)³⁸ that described the term experts as specially skilled based on their experience and education. In generality, "expert is a person with essential knowledge, education, skill and experience with necessary training in a specific domain that ultimately grants them the ability to express their opinions upon the contemporary issues based on

³⁴ 'The Bhartiya Nagarik Suraksha Sanhita 2023: A New Era of Technological Integration into Criminal Justice' (The Legal Lock) <<https://thelegallock.com/the-bharatiya-nagarik-suraksha-sanhita-2023-a-new-era-of-technological-integration-in-criminal-justice/>> accessed 19th August 2025.

³⁵ 'The Bhartiya Nagarik Suraksha Sanhita 2023: A New Era of Technological Integration into Criminal Justice' (The Legal Lock) <<https://thelegallock.com/the-bharatiya-nagarik-suraksha-sanhita-2023-a-new-era-of-technological-integration-in-criminal-justice/>> accessed 19th August 2025.

³⁶ 'The Bhartiya Nagarik Suraksha Sanhita 2023: A New Era of Technological Integration into Criminal Justice' (The Legal Lock) <<https://thelegallock.com/the-bharatiya-nagarik-suraksha-sanhita-2023-a-new-era-of-technological-integration-in-criminal-justice/>> accessed 19th August 2025.

³⁷ Dr. D.K Goswami, 'Forensic Justice : Bhartiya Nagarik Suraksha Sanhita mandates forensic inspection for heinous crimes' (ET Government, 7 July 2024) <<https://government.economictimes.indiatimes.com/blog/forensic-justice-bharatiya-nagarik-suraksha-sanhita-mandates-forensic-inspection-of-heinous-crimes/111549041>> accessed 19th August 2025.

³⁸ AIR 1999 SC 3318

reliable and authentic data”.³⁹ Further, these experts are required to make their mandatory visits for better criminal investigations and prevent unnecessary external intervention.

If practically stated, such step puts a heavy burden upon the existing forensic infrastructure of the country which is limited including 7 forensic science laboratories, 29 state forensic science laboratories and just 50 regional laboratories.⁴⁰ But under Bhartiya Sakshya Adhiniyam (BSA) 2023, there have proposed provisions stating a five year time period for construction of new forensic infrastructure in order to manage the prevalence of shortcomings. It also consists the formation of National Forensic Science University (NFSU) in order to improve and boost the option of forensic science as a leading career option for the coming generations.⁴¹

The BNSS and the BSA reforms in particular have been aspiring to conduct the process of judicial proceedings in the smoothest and transparent manner possible. It has somewhat become a beacon of hope and enlightenment for the Indian Judiciary with its authentic endorsements for the Indian criminal legal system.

ADVANTAGES OF THE NEW CRIMINAL LAWS OR PROVISIONS

- **Structural Reformation and Legal Definitions** : Many sections under the IPC were repetitive and outdated which needed to be reorganized. It had 511 sections which were mostly inconsistent with the modern legal standards. The Bhartiya Nyaya Sanhita 2023 introduced merging of related offences into one particular section like theft and extortion were consolidated. Now the BNS has in total 358 sections making the task of offences compilation in a non hasty manner.
- **Enhanced Punishments for Heinous Offences** : Under BNS, heinous offences like rape , gang-rape and murder that might result in permanent disability of the victims is reserved for minimum sentence upto 20 years under Section 63. Further, for the repeat offenders in case of offences involving sexual crimes, terrorism or organized crime. Under Section 112 of BNS, the punishment for repetitive offenders will be determined based on their prior convictions.⁴²
- **Consideration of unrecognized offences and reformative steps** : Offences like Mob lynching didn't receive any specific provision of its own under the Indian Penal Code 1860. Thereby, under the Bhartiya Nyaya Sanhita 2023, Section 103(2) criminalizes the acts of violence committed by groups against individuals based on their caste, religion , sex or language.⁴³ Further, reformative step like community service never really gained any prominence under IPC but under the BNS section 23 addresses community service as a form of punishment for the offenders.

³⁹ Dr. D.K Goswami, 'Forensic Justice : Bhartiya Nagarik Suraksha Sanhita mandates forensic inspection for heinous crimes' (ET Government, 7 July 2024) <<https://government.economictimes.indiatimes.com/blog/forensic-justice-bhartiya-nagarik-suraksha-sanhita-mandates-forensic-inspection-of-heinous-crimes/111549041>> accessed 19th August 2025.

⁴⁰ Dr. D.K Goswami, 'Forensic Justice : Bhartiya Nagarik Suraksha Sanhita mandates forensic inspection for heinous crimes' (ET Government, 7 July 2024) <<https://government.economictimes.indiatimes.com/blog/forensic-justice-bhartiya-nagarik-suraksha-sanhita-mandates-forensic-inspection-of-heinous-crimes/111549041>> accessed 19th August 2025.

⁴¹ 'The Bhartiya Nagarik Suraksha Sanhita 2023: A New Era of Technological Integration into Criminal Justice' (The Legal Lock) <<https://thelegallock.com/the-bharatiya-nagarik-suraksha-sanhita-2023-a-new-era-of-technological-integration-in-criminal-justice/>> accessed 19th August 2025.

⁴² Sukriti Gupta, Ayush Saran, 'A Comparative Analysis of New and old criminal laws in India' (2025) 5(6) IJLR <<https://ijlr.iledu.in/wp-content/uploads/2025/04/V5I686.pdf>> accessed 19th August 2025.

⁴³ Sukriti Gupta, Ayush Saran, 'A Comparative Analysis of New and old criminal laws in India' (2025) 5(6) IJLR <<https://ijlr.iledu.in/wp-content/uploads/2025/04/V5I686.pdf>> accessed 19th August 2025.

- **Gender Neutrality in certain offences** : Earlier, under IPC sexual offences were limited to women only but due to transformation of IPC into BNS , it also includes male as well as transgender victims due to the landmark judgement of NALSA V. Union of India (2014).⁴⁴
- **Forensic Involvement** : Under CrPC, there was no mandatory provision for the same but now under Bhartiya Nagarik Suraksha Sanhita (BNSS) 2023, there have been a mandatory forensic presence required for the crimes punishable for 7 or more years of imprisonment under Section 176(3) of BNSS.⁴⁵
- **Provision for timeline for essential court procedures** : Under CrPC, no specific timeline was specified but under BNSS as per Section 230, there has been a timeline for filing of chargesheet I.e 14 days. Further, under Section 251 and 263 under BNSS, charges can be framed against the accused within 60 days of the commission of the crime.⁴⁶

Therefore, through the transformation within the Indian Criminal Justice System , there has been numerous additional advantages that can be put forward like improvement in the conviction rates through the integration of digital as well as forensic evidences. This crucial step has also involved the establishment of mobile forensic labs for quicker analysis of crimes.

CHALLENGES

The Challenges are :-⁴⁷

- **Infrastructural Deficiencies** : Due to the advent of forensic science within the Indian Legal and Criminal Justice system, there are certain issues which are being faced regarding the lack of adequate infrastructure. Several forensic science laboratories across the country have been facing the shortcomings like outdated equipment, insufficient fundings and poor facilities. Further, there have also been complaints regarding increasing backlogs within the central as well as state forensic department lasting since several months or years. There is heightened absence of advanced technologies in many forensic laboratories as well which is thereby limiting their ability to conduct their forensic analysis like DNA and cyber crime analysis etc.
- **Delayed Forensic Reporting** : Due to extensively heavy backlogs that have been stored in the forensic laboratories for years, it has become one of the biggest hurdles in the administration of justice. In order to add more to it, unnecessary delay in the reporting of forensic related cases adds to the misery. It further hampers the procedures within the ongoing criminal investigations and trials.
- **Lack of Skilled Professionals** : There has been a steep rise towards the recognition of forensic science and analysis , but the level at which the number of skilled professionals and experts are present is alarming and disheartening. At regional levels, skilled experts are not enough specialized in the field and some of them lack even the basic expertise.

⁴⁴ 5 SCC 438

⁴⁵ Sukriti Gupta, Ayush Saran, 'A Comparative Analysis of New and old criminal laws in India' (2025) 5(6) IJLR <<https://ijlr.iledu.in/wp-content/uploads/2025/04/V5I686.pdf>> accessed 19th August 2025.

⁴⁶ Sukriti Gupta, Ayush Saran, 'A Comparative Analysis of New and old criminal laws in India' (2025) 5(6) IJLR <<https://ijlr.iledu.in/wp-content/uploads/2025/04/V5I686.pdf>> accessed 19th August 2025.

⁴⁷ Praveen Singh Chauhan, Vaishali Patel, 'A Comprehensive study of forensic science in Indian Legal Context:Challenges, Opportunities and Implications for Criminal Investigations and trials' (2024) 4(2) IJLJ <<https://www.lawjournal.info/article/152/4-2-44-721.pdf>> accessed 19th August 2025.

- **Ethical Concerns** : Due to the involvement of forensic science within the realm, there are certain ethical issues which can be faced by the legal system like protection of privacy, potential misuse of sensitive information and especially, lack of clear regularity of frameworks.
- **Public Awareness** : There have been certain instances regarding occurrence of undesirable gaps about the general usage of forensic science among the common public. These unreliable interpretations were influenced by the popular media to some extent.
- **Lack of Standard Operating Procedures (SOP)** : There have been several cases where there is lack of SOPs in evidence collections as well as their preservation and analysis. Such discrepancy has lead to contamination, loss and mishandling of crucial evidences.
- **Coordination Gaps** : For an efficient forensic analysis within criminal investigations, there is a need for management as well as effective communication between law enforcement agencies, forensic laboratories as well as judicial authorities for better administration of justice. But in case of India, there have been certain gaps in the same leading to procedural lapses. Usually, when any forensic evidence is mishandled, it leads to loss in the evidentiary value of the same along with its credibility in the court of law.
- **Procedural and Legal Question** : There have been certain procedural and legal challenges that come up like under Section 39 of Bhartiya Sakshya Adhiniyam (BSA) 2023, allows expert opinions to be admissible as evidences but are still questioned for their reliability and credibility of forensic reports due to the continuing gap within the procedural safeguards in collection of evidences and analysis. Moreover, still the Indian Judiciary relies heavily upon the facets of eyewitness testimonies rather than scientific proofs and findings.
- **Gap in Forensic science related policies** : There is an utter need of a comprehensive as well as unified national policy for operation of forensic science and its analysis in the country today. In order to fill the required gaps, clear cut guidelines and reforms need to be circulated for better utilization of forensic evidences within criminal investigations.
- **Technological Limitations** : Due to lack of technological advancement within the country like use of Artificial Intelligence, Block chain technology etc ,there have been certain limitations prevalent in terms of technology. Further, the inability of the authorities to conform to expensive technology driven techniques, ends up compelling the investigators to traditionally outdated methods.

INDIAN CASE LAWS RELATED TO FORENSIC SCIENCE

- **KISHORE CHAND V. STATE OF HIMACHAL PRADESH (1991)⁴⁸** : In this case, the Supreme Court of India emphasized the importance of the chain of custody and especially proper and efficient documentation of forensic evidences.⁴⁹ It further laid down that in order to secure the admissibility of the forensic evidence in the court of law, proper attention should be given on maintenance and storage of forensic evidence from the crime scene till it reaches the court for verification. This case established the assurance of reliability upon the evidences obtained through forensic analysis.

⁴⁸ 1990 INSC 260

⁴⁹ 'Key Case Laws and Rules of Evidence in Forensic Science : An Indian Perspective' (Forensics Digest) <<https://forensicsdigest.com/key-case-laws-and-rules-of-evidence-in-forensic-science-an-indian-perspective/>> accessed 19th August 2025.

- **MURUGAN V. STATE OF TAMIL NADU (2011)⁵⁰** : This case highlighted use of DNA Profiling under criminal cases.⁵¹ The Supreme Court of India held the conviction by using a DNA evidence , keeping a note of its importance and reliability in cases like confirmation of biological relationships or in order to determine the involvement of a certain suspect in the commission of a crime.
- **STATE OF GUJRAT V. KISHANBHAI (2014)** : In this case, the Supreme Court of India emphasized upon the need of proper handling of evidences collected through forensic analysis. Further, the Hon'ble Court stressed upon that there should promptness in the examination of forensic evidences in criminal cases to avoid losing their credibility. There was also a essential highlighting of the timely delivery of forensic reports by the forensic departments in order to secure the integrity of evidences.⁵²

WAY FORWARD

The potential benefits are :-⁵³

- **Adding Strength to the Judicial Oversight** : In order to strengthen the judicial capabilities, there is an adequate consideration of forensic science and its varying techniques which requires supportive legal and policy frameworks. Through effective judicial decisions, there can be transparency in collection and preservation of forensic evidences which adds to its credibility. Additionally,dedicated forensic legislations can streamline practices across different court jurisdictions.
- **Formation of Forensic Infrastructures in India** : The government has committed towards building of additional forensic infrastructures all over the country in order to overcome the lack of infrastructural deficiencies. Moreover, existing forensic laboratories and institutions are being upgraded. It is done to ensure reliability of results arising from credible and uninterrupted forensic analysis.
- **Training and Capacity Building** : The competence of the personnels within the realm of forensic science and analysis often gets questioned after witnessing such successful introduction of such a field. The government has launched extensive training programs to equip law enforcement officers , forensic experts and judicial officers with adequate skills, knowledge and experience. The proposed programs have the inclusion of various facets of forensic science including crime scene managements, evidence collection, forensic analysis and especially, interpretation of forensic reports. The advanced training also consists of maintenance of chain of custody and assurance towards integrity of forensic evidences in the court of law. By building a well trained and proficient workplace within the forensic department, the new criminal laws within the Indian legal criminal justice system aspire to reform the nature of forensic investigations and ensure their administration of justice with effective utilization.

⁵⁰ AIR 2011 SC 1691

⁵¹ 'Key Case Laws and Rules of Evidence in Forensic Science : An Indian Perspective' (Forensics Digest) <<https://forensicsdigest.com/key-case-laws-and-rules-of-evidence-in-forensic-science-an-indian-perspective/>> accessed 19th August 2025.

⁵² 'Key Case Laws and Rules of Evidence in Forensic Science : An Indian Perspective' (Forensics Digest) <<https://forensicsdigest.com/key-case-laws-and-rules-of-evidence-in-forensic-science-an-indian-perspective/>> accessed 19th August 2025.

⁵³ Praveen Singh Chauhan, Vaishali Patel, 'A Comprehensive study of forensic science in Indian Legal Context:Challenges, Opportunities and Implications for Criminal Investigations and trials' (2024) 4(2) IJLJJ <<https://www.lawjournal.info/article/152/4-2-44-721.pdf>> accessed 19th August 2025.

- **Public Private Partnerships (PPP)** : There has been certain ventures regarding collaboration of governmental agencies and private companies which can ultimately bridge the gap within the realm of forensic science and analysis. Public Private Partnerships (PPP) can holistically establish advanced forensic laboratories , research initiatives and capacity building programs and ventures.
- **Enhancing Public Trust in Forensic Science** : In order to secure growth and advancement within the domain of forensic science departments, building public trust is one of the crucial needs of the hour. Awareness campaigns , transparency and accountability in forensic investigations and most importantly, educating the public and especially the youth regarding the various facets of the same , ensures best ways for justice delivery and instills confidence within the system.

Therefore , with such innovative and effective strategic investments and availing of growth opportunities driven by technological advancements, the Indian Criminal Justice system contributes towards a safer society.⁵⁴

CONCLUSION

The advent of the new criminal laws in 2023 have marked a historic shift in how justice will be administration of justice in the coming years. By incorporating a refined version of forensic science and evidences within the New criminal laws of Bhartiya Nyaya Sanhita(BNS); Bhartiya Nagarik Suraksha Sanhita (BNSS) and Bhartiya Sakshya Adhinyam (BSA) in 2023, the Indian legal and Criminal Justice System has considered the future of criminal justice is within the scientific domain with the essential legal standards.

Forensic Science provides a precise, evidence based foundations to criminal investigations. It includes techniques like DNA Profiling, fingerprints , digital forensics etc.

Although, science on its own doesn't have the capability of ensuring justice, it requires an equally robust and reliable judicial and procedural safeguards. Without such a collaboration, forensic science might crumble and end up leading to loopholes within the domain of administration of justice.

Therefore, forensics serves to be a pillar to support the rule of law and can't be considered as the one substituting the other. The integration of both can lead to credible , efficient and victim centric model of criminal trials. The introduction of new criminal laws not only represents a legal transformation but also brings forward the idea of science and law having a combination to cherish the Indian Legal system for a better tomorrow.

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⁵⁴ Praveen Singh Chauhan, Vaishali Patel, 'A Comprehensive study of forensic science in Indian Legal Context:Challenges, Opportunities and Implications for Criminal Investigations and trials' (2024) 4(2) IJLJJ <<https://www.lawjournal.info/article/152/4-2-44-721.pdf> > accessed 19th August 2025.

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