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DNA Profiling in Human Trafficking and Missing Persons Cases: Enhancing Victim-Centric Investigations

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Abstract
Human trafficking and enforced disappearance are global problems of alarming scale. Millions are exploited or go missing each year, yet relatively few cases of human trafficking are prosecuted, and most victims remain unidentified(Katsanis et al., 2015) Families of missing persons endure years of uncertainty and distress, unable to obtain death certificates or justice(I-Familia, n.d.) . DNA profiling has emerged as the most powerful tool for human identification, accepted worldwide in criminal justice. It can establish identity and familial relationships to support victim identification, family reunification and prosecution of traffickers(Palmbach et al., 2014) . For example, NGOs like DNA-ProKids have used DNA matching to reunite missing or illegally adopted children with their parents, striving to create a global victim database . Yet the use of DNA in trafficking cases raises complex legal, procedural and ethical issues. This paper critically examines the legal frameworks and investigative mechanisms for DNA profiling in trafficking and missing persons cases, from a victim-centric perspective. We analyse India's emerging laws (the DNA Technology Regulation Bill and the Criminal Procedure (Identification) Act 2022) alongside international instruments (e.g. the UN Palermo Protocol) and practices in other jurisdictions (EU, USA, selected Global South), identifying gaps and proposing reforms. The aim is to ensure DNA technology is harnessed to help victims, with robust safeguards for their rights.
Keywords: *DNA, Human Trafficking, missing persons*

INTRODUCTION

Empirical and policy research recognize DNA analysis as crucial in identifying trafficking victims and missing persons. Scientific studies note that DNA profiling (short tandem repeat typing) "can be used to genetically verify claimed familial relationships" and is a reliable evidence base for victim identification and prosecution(Katsanis et al., 2015) . However, social science research highlights serious concerns. Victims' advocates generally see the value of DNA-led investigations, but insist that data must be handled by trusted, non-police entities to allay fears of misuse. In a survey of anti-trafficking professionals, most respondents supported the concept of humanitarian DNA databanks, but voiced major anxieties about privacy, security and authority: samples should not be controlled by routine law enforcement and must be securely managed(Katsanis et al., 2015) . Similar findings appear in the US Office for Victims of Crime guidance, which emphasizes that victims must receive early, clear explanation of how DNA evidence is collected and used, so that they understand its role in solving crimes and bringing justice(U.S. Department of Justice & Turman, 2001) . This underscores the importance of a victim-sensitive approach informed consent, confidentiality in any forensic process.

Legal scholarship on this topic is more limited. Commentators on forensic genetics warn that DNA databases have often expanded with hardly any public debate and with few human rights safeguards(Forensic Genetics: A Global Human Rights Challenge, n.d.) creating a tension between law enforcement goals and individual rights. Human rights and criminal justice experts have called for strict controls to prevent misuse of sensitive genetic information . In India specifically, the Law Commission (2017) has recommended a special legislative scheme for DNA profiling, noting that the existing framework amendments to the CrPC is inadequate(Saba, 2017) . The Commission proposed an independent DNA Board and uniform laboratory standards(Saba, 2017) . These analyses underscore that while DNA tools can benefit trafficking investigations, their deployment raises proportionality and ethical questions that must be addressed through law and policy.

Legal Frameworks and Investigative Mechanisms

International and Regional Instruments

At the international level, several instruments underpin the use of DNA for victim identification. The UN's Protocol to Prevent, Suppress and Punish Trafficking in Persons Palermo Protocol, 2000 obliges states to criminalize trafficking and to protect and assist victims. While it does not explicitly mention DNA, the Protocol promotes

victim-sensitive procedures and cross-border cooperation (Articles 6–10) which can support forensic identification efforts. Regional agreements also encourage data sharing: the EU has progressively built mechanisms the Prüm framework, now EU Regulation 2019/818 enabling automated exchange of DNA, fingerprint and vehicle data between member states. A 2024 EU regulation further broadens these powers, allowing searches across multiple data categories – including for missing persons and human remains – if national law permits. (Council of the European Union, 2024) At the same time, European human rights law (e.g. S and Marper v UK) imposes strict limits on retention and processing of DNA profiles, reflecting privacy protections under the EU Charter. Thus, the EU seeks to balance forensic utility with rigorous data safeguards.

Interpol provides global guidance and platforms for DNA-based identification. Its I-Familia program is "the first of its kind" global DNA database designed for kinship matching of missing persons: family reference samples from parents or siblings can be submitted to compare against unidentified remains(I-Familia, n.d.-b) . Interpol's DNA Monitoring Expert Group publishes best-practice recommendations emphasizing international cooperation. In 2015 it noted that factors like "the ease of international travel… increased global migration" and "the consequences of growing international crime, including human trafficking" make cross-border DNA efforts essential (Puerto et al., 2021) . The guidelines stress that forensic programs must use all identifiers dental, fingerprint, DNA in tandem, and that "identification efforts shall apply equally to all" persons, without discrimination based on wealth, ethnicity or circumstance (Puerto et al., 2021) . In sum, international frameworks encourage use of DNA for victim ID, promote data sharing (Interpol, EU) and enshrine protections (UN, EU) although many trafficking-specific rules focus on victim assistance rather than identification technology.

Other global initiatives also feed into policy. The International Commission on Missing Persons (ICMP) works in conflict and disaster zones to establish DNA labs and biobanks for large-scale identifications. NGOs and UN agencies (e.g. IOM, OHCHR) have developed guidelines for victim-centered investigations, emphasizing consent and non-coercion. While not legally binding, these sources underscore norms that DNA use must respect human rights.

Indian Legal Regime

India's statutory framework for DNA profiling is evolving. The colonial Identification of Prisoners Act, 1920 (IPA) was the main law until recently. It allowed police to take fingerprints and photographs of convicted persons and some arrestees, but made no mention of DNA. Recognizing the inadequacy of 1920 Act, Parliament enacted the Criminal Procedure (Identification) Act, 2022 (CPIA), which repealed the IPA. CPIA greatly expands the scope and ambit of biometric data collection. It authorizes police and prison authorities to collect "measurements" from convicts, persons granted conditional bail, those arrested or detained subject to minor exceptions (Jilsblognujs, 2023) . Importantly, "measurements" is defined very broadly to include photographs, fingerprint and palmprint impressions, iris/retina scans, physical measurements, signature or handwriting, and biological samples and their analysis(Jilsblognujs, 2023) in effect covering DNA profiles.

Under the CPIA, every person in the specified categories can be compelled to submit measurements, with magistrates empowered to order sampling of any individual for the purpose of any investigation(Jilsblognujs, 2023) . The Act also assigns the National Crime Records Bureau (NCRB) a central role: state police forward collected data to the NCRB, which must then store, process and preserve records linked with criminal history on a national database(Jilsblognujs, 2023) . Significantly, the law requires retention of such records "in digital or electronic form for a period of 75 years" (Jilsblognujs, 2023) . Only under strict conditions (e.g. person acquitted after exhausting appeals) can a profile be expunged, and even then destruction can be blocked by court order(Jilsblognujs, 2023) . No streamlined mechanism is provided for voluntarily adding victim or family DNA profiles to this system.

Parallel to CPIA, the central government has for years been drafting a DNA Technology (Use and Application) Regulation Bill to regulate forensic DNA in both civil and criminal cases. The 2019 version of this Bill was formulated specifically to facilitate the use of DNA for identifying "missing persons, victims, offenders, under trials and unknown deceased persons" (Lok Sabha Passes "The DNA Technology (Use and Application) Regulation Bill - 2019," n.d.) . It envisaged a statutory DNA Regulatory Board, mandatory accreditation of labs, and creation of a National and Regional DNA Data Bank(Lok Sabha Passes "The DNA Technology (Use and Application) Regulation Bill - 2019," n.d.) . The Bill explicitly recognized the need to protect privacy: for example, it required security measures so that data remain protected from misuse or abuse in terms of the privacy rights of our citizens(Lok Sabha Passes "The DNA Technology (Use and Application) Regulation Bill - 2019," n.d.) . Its stated goal was to "strengthen the justice delivery system" by treating DNA as the "gold standard" evidence(Lok Sabha

Passes "The DNA Technology (Use and Application) Regulation Bill - 2019," n.d.) . In Lok Sabha discussions, proponents emphasized that a dedicated DNA law was necessary because amending criminal procedure alone "would not serve the purpose" – echoing the Law Commission's analysis(Saba, 2017) . Unfortunately, after lengthy debate the Bill was withdrawn in July 2023 amid political disruptions(Jain, 2023) . Thus, India currently lacks a comprehensive statute for DNA in missing persons cases; instead, DNA use is governed piecemeal by general laws (CrPC, CPIA) and ad hoc guidelines.

The Law Commission's 2017 report (No.271) anticipated many of these issues. It observed that drafting countries like the US, UK and China have specific DNA laws, and warned that India needed stringent controls to prevent misuse(Saba, 2017) . The Commission recommended constitution of a DNA Profiling Board to set standards and accredit laboratories(Saba, 2017) proposals later reflected in the 2019 Bill. Although not yet law, these recommendations shape how Indian policymakers think about the trade-offs between forensic potential and personal rights.

Investigative Procedures and Institutions

In practice, DNA profiling requires coordination between law enforcement, laboratories and victim/family support agencies. In India, police investigating trafficking or disappearances may (in principle) seek a court order for DNA samples from victims, suspects or relatives. Samples are analyzed in forensic labs (Central or state-run), producing profiles that can be compared with existing criminal or medico-legal records. Under the CPIA, state governments can designate which agencies police stations, special cells, correctional facilities will collect such data, and how it is handled(Criminal Procedure (Identification) Rules, 2022, n.d.) . The NCRB is empowered to maintain a national repository; in the future it could link with international databases (e.g. through I-Familia). However, India currently has no dedicated "missing persons DNA database" akin to the US CODIS system for missing persons or Interpol's I-Familia. Samples from families of missing persons can be collected on a voluntary basis much like family reference samples in the US and run against unidentified remains or offender profiles, but this is ad hoc and not yet standardized. In other words, the institutional framework for victim-centric DNA matching is underdeveloped.

Responsibility for oversight is split among agencies. The Ministry of Home Affairs administers the CPIA and coordinates NCRB functions. The Department of Biotechnology (DBT) and Ministry of Science have taken the lead on drafting DNA regulation and running the national DNA Profiling Laboratory (NIDAN). Law enforcement agencies (CBI, state crime branches) conduct criminal investigations, sometimes assisted by federal agencies like the Narcotics Bureau or special anti-trafficking cells. Interpol and international partners can provide support (e.g. sending profiles to I-Familia or accessing global missing persons data), but this requires formal requests and often faces legal hurdles. Non-state actors also play a role: victim-support NGOs and child welfare committees can facilitate family contact and voluntary DNA collection, while the International Commission on Missing Persons has worked in India on tracing war victims and disaster victims using DNA.

In comparative jurisdictions, these institutional arrangements vary. The US Federal Bureau of Investigation (FBI) maintains the Combined DNA Index System (CODIS) which includes a dedicated National Missing Persons DNA Database (NMPDD). Federal law (34 U.S.C. §40726) authorises grants to states for missing persons DNA profiling, and requires participating agencies to upload unidentified remains and family reference profiles to the FBI system. The National Institute of Justice (NIJ) funds NamUs, an online portal where police and families can enter missing/unidentified cases including DNA data. NamUs partners with ISO-certified labs to perform mtDNA analysis for cold cases(DNA | NAMUS, n.d.) . In Europe, each Member State maintains its own criminal DNA database, and Prüm enables cross-border database checks. Authorities like Europol can now query DNA data from other countries following the 2024 regulation to solve crimes and identify bodies(Council of the European Union, 2024) . International organizations like Interpol, ICMP and civil society NGOs like DNA-ProKids help bridge gaps by pooling data and best practices.

Comparative Legal Analysis

United States

The US has a well-developed legal regime for forensic DNA, shaped by both statutes and court decisions. At the federal level, the DNA Identification Act of 1994 established CODIS; since then Congress has repeatedly expanded it (e.g. the Justice for All Act 2004). By law, DNA samples may be taken from felony arrestees, convicts, or immigration violators, depending on the jurisdiction. Notably, the US Supreme Court in Maryland v. King (2013) held that collecting a cheek swab from an arrestee charged with a serious crime is reasonable under the Fourth

Amendment likening it to fingerprinting(Maryland V. King, 569 U.S. 435 (2013), n.d.) Thus, suspicion less collection at booking is now commonplace nationwide. At the same time, DNA collection in the US is largely restricted to law enforcement; there is no general civil DNA law for missing persons, though federal law promotes grants for families to collect reference samples. For missing persons specifically, 34 U.S.C. §40726 (enacted 2004) directs the Attorney General to fund DNA testing to identify missing persons and remains, and requires grantees to submit profiles to the FBI's National Missing Persons DNA Database. An appropriation of $2 million per year (2017–2021) was authorized for this purpose. Complementing this, the NamUs system (1997 Trafficking Victims Protection Act gave NIJ authority allows victims' families to register missing person reports online. NIJ now provides DNA analysis (including mitochondrial DNA) for unresolved cases and encourages families to submit voluntary reference samples(DNA | NAMUS, n.d.) . These US mechanisms illustrate a mix of mandatory collection from suspects and voluntary participation by families, supported by federal funding. Privacy protections exist (state laws vary), but the constitutional stance is broadly permissive of DNA use in law enforcement.

European Union

Within the EU, forensic DNA work is strongly influenced by human rights law. The European Court of Human Rights has struck down indiscriminate DNA retention (e.g. S. and Marper v. UK, 2008), prompting reforms across the Union. Nonetheless, all member states operate criminal DNA databanks, usually containing profiles of convicted offenders. The Prüm decisions (EU Council Decisions 2008/615 & 2008/616, now Regulation 2019/818) created a mandatory framework for automatic exchange of DNA profiles (as well as fingerprints and vehicle data) among national police databases. This means an unknown DNA from a crime scene in one country can be instantly checked against offender and forensic profiles in other member states. Importantly, as of 2024 Prüm also permits cross-database searches for missing persons and unidentified remains, subject to national law(DNA Act — DNA Project – South Africa, n.d.) . For example, if a body is found, authorities may (if allowed locally) simultaneously search various biometric databases of other countries. This reflects a victim-centered expansion of Prüm-type exchange. At the same time, the EU's General Data Protection Regulation (GDPR) treats genetic data as sensitive personal data, requiring strong justifications and safeguards for processing. This creates tension: while Prüm facilitates sharing of limited DNA data for criminal justice, GDPR and national constitutions enforce strict privacy rights. Thus EU policy encourages forensic cooperation, but with layered oversight (independent data controllers, time-limited retention, rigorous access controls). EU member states also implement victim-protection directives (e.g. Directive 2011/36/EU on trafficking), which emphasize victims' rights to assistance and reflection periods. In practice, countries like Spain and Italy have specialized missing-persons units that collect DNA, whereas smaller states often rely on cross-border help via Interpol.

Global South Countries

Across the Global South, capabilities and laws vary widely. South Africa passed a comprehensive DNA Act in 2013(effective 2015) which created a National Forensic DNA Database (NFDD) to fight crime and identify missing persons. The Act requires buccal swabs from convicted and certain arrested persons, and its objective explicitly includes helping to "find missing people" (DNA Act — DNA Project – South Africa, n.d.) Tens of thousands of detectives were trained to implement it in early 2015. Thus South Africa's approach is extensive and modelled on continental DNA regimes. By contrast, Brazil has recently built its framework: Law No. 13,812 (2019) instituted a National Policy for Searching Missing Persons, creating a federal Missing Persons Registry, and plans for an integrated DNA database. Brazil had already developed an Integrated Network of DNA Databases (Rede Integrada) since 2013. A UN human rights review noted that Brazil's national system is "the most advanced… in terms of consolidating data on disappearances" (In Dialogue With Brazil, Committee on Enforced Disappearances Asks About Statistics on Missing Persons, and Systems Available to Victims' Families | the United Nations Office at Geneva, 2021) reflecting its emphasis on systematic tracking. Other Latin American countries (Mexico, Argentina, etc.) have also adopted forensic DNA programs in response to mass disappearances, often with ICRC/ICMP assistance.

In Asia and Africa, approaches are more heterogeneous. Some countries (Malaysia, Bangladesh, Singapore) have DNA databanking laws, but enforcement is patchy. Resources are often constrained, and concerns over privacy may be less legally entrenched. For example, Nigeria ratified the Palermo Protocol and has anti-trafficking laws, but lacks specialized DNA legislation or databases; identification often relies on ad hoc forensic or community efforts. Civil society organizations in these regions sometimes partner with international experts to collect DNA from victims and relatives (as in the work of DNA-ProKids or IOM programs in South Asia). A common challenge in many developing states is the absence of a robust data protection regime. Without strict privacy laws, DNA profiling can

proceed unchecked – which may speed victim ID, but also raises risks of misuse. Commentators note that forensic databases are being exported to countries "with questionable rule of law", often without public debate or rights safeguards(Forensic Genetics: A Global Human Rights Challenge, n.d.-b) . Thus, while DNA profiling capabilities exist, the regulatory and institutional framework in the Global South is still catching up.

Policy and Rights-Based Challenges

Deploying DNA profiling in trafficking and missing persons cases promises great benefits but also poses serious challenges from a victim-centric and human-rights perspective. Key issues include:

- **Privacy and Data Protection**: DNA contains sensitive personal and health information and inevitably implicates biological relatives. Collecting and storing it at large scale raises privacy concerns. In India, the fundamental right to privacy (per K.S. Puttaswamy v. Union of India 2017) applies to genomic data, suggesting that any law allowing DNA retention must pass strict necessity tests. The new Digital Personal Data Protection Act, 2023 in India will classify genetic data as "sensitive"; this means consent requirements and safeguards should attach to its processing. However, CPIA 2022 itself permits broad DNA collection by police; petitions are pending on whether this violates privacy principles(Jilsblognujs, 2023c) . Internationally, the European Court has ruled that indefinite retention of innocent persons' DNA violated Article 8 ECHR, and many EU states have limited retention periods. India must consider similar proportionality: does the state have a "rational nexus" for retaining DNA of persons who were merely investigated? Rights experts argue that blanket retention (75 years) without strong controls may not be justified(Jilsblognujs, 2023c) . Transparency is also critical: victims must know who can access their DNA data. Inadequate data security or lack of oversight (as cautioned by civil society) could lead to misuse, discrimination or surveillance(Katsanis et al., 2015b)
- **Informed Consent and Autonomy**: Trafficking victims are often in vulnerable positions. Collecting DNA from them (or from child victims) raises questions of voluntariness. Ideally, a victim should give informed consent to DNA testing; in practice, she may fear authorities or be traumatized. The victim-centered approach demands that sampling be done by trained medical professionals (not aggressive interrogators), with privacy and counseling. U.S. victim guidance emphasizes early, clear explanation of the DNA process and its purpose(U.S. Department of Justice & Turman, 2001b) . Indian law and procedure should similarly require victims understand their rights before submitting samples. Particular care is needed for minors and individuals without guardians (as in child trafficking), ensuring an appropriate representative consents. Forced DNA sampling (for example, conditioning aid or services on giving DNA) would contravene basic rights. If a victim's identity is uncovered (through DNA or kinship), reintegration and protection plans must be ready, rather than leaving her in limbo.
- **Non-Punishment and Stigmatization**: Victims of trafficking must never be criminalized for acts they were coerced into (e.g. prostitution, illegal entry). If DNA profiling is done by police, there is a risk that victims' associations or even relatives could implicate them in unrelated crimes. Legal frameworks should explicitly exempt victims from penalties or investigation simply for cooperating with identification. In addition, care must be taken that DNA-derived information does not inadvertently reveal other sensitive traits (e.g. genetic conditions) to authorities who might abuse it.
- **Procedural Safeguards and Oversight**: Scientific errors or contamination in DNA analysis can mislead investigations. Strict quality controls (accreditation of labs, chain-of-custody protocols) are needed. The 2019 DNA Bill's accreditation rules were well-advised(Lok Sabha Passes "The DNA Technology (Use and Application) Regulation Bill - 2019," n.d.-b) . Independent oversight (for instance a judicial or multi-stakeholder DNA Board) would help maintain standards and public trust. Without checks, authorities might expand use of DNA beyond its intended scope. Critics warn of "mission creep" where a database created for crime-solving becomes a general surveillance tool(Forensic Genetics: A Global Human Rights Challenge, n.d.-a)
- **International Cooperation Hurdles**: DNA profiling is most powerful with cross-border data sharing. However, differences in laws (consent, admissibility, ownership of DNA samples) can impede collaboration. For example, Indian law currently does not address how to exchange DNA data with foreign agencies. Aligning with Interpol guidelines (e.g. enabling submission to I-Familia) would require bilateral/multilateral agreements and perhaps changes to domestic law. Countries must negotiate reciprocity: allowing law enforcement to query national DNA data will only be politically palatable if accompanied by reciprocal data protection assurances.
- **Capacity and Resource Gaps**: Finally, effective victim-centric use of DNA profiling depends on technical and institutional capacity. In India and many Global South countries, there is a shortage of advanced forensic labs, trained personnel, and funding. Long backlogs in testing can delay closure for families. Investment in infrastructure (more accredited labs, mobile DNA units) is needed. Training of investigators in trauma-informed interviewing and

sample collection is equally important. Without these supports, even well-intentioned policies will falter in practice. Taken together, these policy and rights issues reveal that integrating DNA profiling into anti-trafficking work is not only a legal question, but also an ethical and procedural one. It requires balancing the compelling public interest in identifying victims with the imperative to protect their dignity and rights.

CONCLUSION AND RECOMMENDATIONS

DNA profiling offers transformative promise in solving cases of human trafficking and disappearance: it can identify unknown victims, link separated families, and provide incontrovertible evidence to prosecute perpetrators. International experience – from the US National Missing Persons DNA Program to the EU's cross-border Prüm mechanism(Council of the European Union, 2024) and Interpol's I-Familia(I-Familia, n.d.-a) demonstrates the power of DNA to bring resolution. Yet harnessing this technology effectively demands a robust, rights-respecting framework.

In India, the legislative regime remains under construction. The new CPIA (2022) has modernized police powers but focuses on criminal suspects rather than victims; the stalled DNA Regulation Bill illustrates government intent but its withdrawal leaves a gap. We echo the Law Commission's view that a specialized statutory scheme is needed(Saba, 2017a) . Specifically, following are the recommendations:

- **Enact and Refine Legislation**: Parliament should reintroduce and pass a comprehensive DNA Act that explicitly covers missing persons and trafficking victims. This law must include (as proposed in the 2019 Bill) a DNA Regulatory Board with multi-sectoral representation, mandatory accreditation of labs and protocols for quality control(Lok Sabha Passes "The DNA Technology (Use and Application) Regulation Bill - 2019," n.d.-a) Crucially, it should incorporate privacy safeguards: DNA databases must be segregated (e.g. criminal index vs humanitarian index), with strict limits on retention and use. Consent requirements should be codified for taking samples from non-suspects, and there should be clear expungement rules (automatic deletion upon acquittal or familial withdrawal, for example) (Jilsblognujs, 2023c) Laws should provide victims with the right to request DNA testing or entry of family reference profiles, paralleling NamUs in the US. The law must harmonize with the DPDP Act, clarifying how police exceptions apply to genetic data.
- **Strengthen Institutions and Infrastructure**: The National Crime Records Bureau must be resourced and guided (by rules) to build the envisioned DNA databases. Laboratories across the country should be upgraded and ISO-accredited, to ensure evidence reliability. Training programs must be expanded: as South Africa did for 5,500 detectives in 2015(DNA Act — DNA Project – South Africa, n.d.) India should train police, forensic experts and forensic nurses to collect and handle DNA evidence sensitively. Affected families and NGOs (e.g. child welfare committees, anti-trafficking organizations) should be integrated into the process, to assist with outreach and trust-building.
- **International Cooperation**: India should formally participate in global initiatives. For example, it could begin submitting DNA profiles to INTERPOL's I-Familia and align with Prüm-style data sharing for urgent cases. Bilateral agreements with neighboring countries would facilitate repatriation of DNA data (e.g. relatives in one country matching unidentified remains in another). India should also ratify or adhere to additional treaties (such as the Council of Europe Convention on Action against Trafficking) that strengthen victim rights. Interpol's best-practice documents (e.g. on missing persons DNA) should be adopted as national guidelines.
- **Protect Victim Rights**: All investigative protocols must be victim-centered. DNA sampling from a trafficking victim should be optional and accompanied by counseling and legal aid. Results of DNA tests (e.g. confirming identity) should be conveyed to families swiftly, with appropriate support services. The non-punishment principle must be enshrined: no victim should face prosecution for immigration or prostitution offenses discovered incidentally through a DNA investigation. Data access should be limited to investigating agencies; personal genetic information should never be exploited for insurance, employment or discriminatory purposes. Oversight bodies (judicial review boards, data protection authorities) should monitor compliance with these standards.
- **Policy Coordination**: A national strategy is needed that ties together criminal justice, social services and health sectors. For instance, protocols could be developed for coordinating forensic exams (medical survivors' kits) and DNA collection, mirroring the US SANE (Sexual Assault Nurse Examiner) model. For missing persons, a multi-agency National Missing Persons Commission (as recommended by some Indian experts) could link police, forensic experts, social workers and NGOs, ensuring DNA efforts are integrated into broader victim assistance.

In conclusion, DNA profiling can be a game-changer for victims of trafficking and the families of missing persons, but only if it is embedded in a humane and accountable system. India stands at a crossroads: it possesses the

technical means and growing political will, but must choose a path that centers victims' rights and builds public trust. By learning from comparative experience and enacting safeguards, India (and other countries) can harness the "gold standard" of DNA evidence without sacrificing the dignity of the vulnerable populations it aims to serve.

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