

Legislative Brief

The DNA Technology (Use and Application) Regulation Bill, 2018

The Bill was introduced in Lok Sabha on August 9, 2018, by Minister for Science and Technology, Mr. Harsh Vardhan.

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Highlights of the Bill

- ◆ The Bill regulates the use of DNA technology for establishing the identity of persons in respect of matters listed in a Schedule. These include criminal matters (such as offences under the Indian Penal Code, 1860), and civil matters such as parentage disputes, emigration or immigration, and transplantation of human organs.
- ◆ The Bill establishes a National DNA Data Bank and Regional DNA Data Banks. Every Data Bank will maintain the following indices: (i) crime scene index, (ii) suspects' or undertrials' index, (iii) offenders' index, (iv) missing persons' index, and (v) unknown deceased persons' index.
- ◆ The Bill establishes a DNA Regulatory Board. Every DNA laboratory that analyses a DNA sample to establish the identity of an individual, has to be accredited by the Board.
- ◆ Written consent by individuals is required to collect DNA samples from them. Consent is not required for offences with punishment of more than seven years of imprisonment or death.
- ◆ The Bill provides for the removal of DNA profiles of suspects on filing of a police report or court order, and of undertrials on the basis of a court order. Profiles in the crime scene and missing persons' index will be removed on a written request.

Key Issues and Analysis

- ◆ The Schedule lists civil matters where DNA profiling can be used. This includes "issues relating to establishment of individual identity." DNA testing carried out in medical or research laboratories can be used to identify an individual. It is unclear if the Bill intends to regulate such laboratories.
- ◆ The Bill requires consent of the individual when DNA profiling is used in criminal investigations and identifying missing persons. However, consent requirements have not been specified in case of DNA profiling for civil matters.
- ◆ DNA laboratories are required to share DNA data with the Data Banks. It is unclear whether DNA profiles for civil matters will also be stored in the Data Banks. Storage of these profiles in the Data Banks may violate the right to privacy.
- ◆ DNA laboratories prepare DNA profiles and then share them with DNA Data Banks. The Bill specifies the process by which DNA profiles may be removed from the Data Banks. However, the Bill does not require DNA laboratories to remove DNA profiles. It may be argued that such provisions be included in the Bill and not left to regulations.

PART A: HIGHLIGHTS OF THE BILL

Context

The Deoxyribonucleic Acid (DNA) is a set of instructions found in a cell. These instructions are used for the growth and development of an organism. The DNA of a person is unique, and variation in the sequence of DNA can be used to match individuals and identify them.¹ DNA technology, therefore allows for accurate establishment of an individual's identity.¹

DNA-based technology can be used to aid criminal investigations. For example, the identity of a criminal offender may be determined by matching DNA found at the crime scene with the DNA of a suspect.² In addition, DNA-based technology helps in identification of victims in the event of terrorist attacks or natural disasters such as earthquakes. For example, DNA technology has been used to identify victims of terrorist attacks on the World Trade Centre in 2001, and disasters such as the Asian tsunami in 2004.³ Further, DNA profiling can be used in civil matters, such as parentage related disputes.

Currently, the use of DNA technology for identification of individuals is not regulated. In the past, several expert groups including the Law Commission, have looked at the use and regulation of DNA technology.⁴ The Commission submitted its report as well as a draft Bill in July 2017.² In this context, the DNA Technology (Use and Application) Regulation Bill, 2018 was introduced in Lok Sabha on August 9, 2018. The Bill regulates the use of DNA technology for the purpose of identification of persons in criminal and civil matters.

Key Features

- **Use of DNA Data:** The Bill regulates DNA testing for identification of persons, in respect of matters listed in the Schedule. This includes offences under the Indian Penal Code, 1860, as well as offences under other laws such as the Immoral Traffic (Prevention) Act, 1956, the Medical Termination of Pregnancy Act, 1971, the Protection of Civil Rights Act, 1955, and the Motor Vehicles Act, 1988.
- The Schedule also allows for DNA testing in certain civil matters. This includes matters such as parentage disputes, issues related to pedigree, immigration or emigration, assisted reproductive technologies, transplantation of human organs, and for the establishment of individual identity.

Consent for collecting bodily substances

- In case of a person arrested for an offence which carries punishment upto seven years, the authorities are required to obtain his written consent before collecting his bodily substances. If consent is not given, the authorities may approach a Magistrate who may order the taking of bodily substances from the individual, if he is satisfied that DNA will confirm or disprove the individual's involvement in the alleged offence. If the offence carries a punishment of more than seven years of imprisonment or death, consent is not required.
- If a person is a victim, or relative of a missing person, authorities are required to obtain their written consent to collect bodily substances. In case of a minor or disabled person, the written consent of the parent or guardian is required. If consent is not given, the authorities may approach a Magistrate who may order taking of the bodily substances of the person.

Accreditation of DNA Laboratories

- Any laboratory that conducts DNA testing and analysis to establish the identity of an individual (in respect of matters listed in the Schedule) is required to obtain accreditation from the DNA Regulatory Board. Accreditation will be valid for two years.
- The Board may revoke accreditation for reasons including, failure to: (i) undertake DNA testing, or (ii) comply with the provisions of the Act or conditions attached to the accreditation. If accreditation is revoked, an appeal will lie before the central government or any authority notified by the central government.
- Every DNA laboratory is required to follow standards of quality assurance in collection, storing, testing, and analysis of DNA samples.

DNA Data Bank

- The central government will establish a National DNA Data Bank and Regional DNA Data Banks for each state, or two or more states, as it may deem necessary.
- Every DNA Data Bank is required to maintain the following indices based on DNA testing conducted by a DNA laboratory: (i) crime scene index, (ii) suspects' or undertrials' index, (iii) offenders' index, (iv) missing persons' index, and (v) unknown deceased persons' index.

Sharing of DNA data with Data Banks

- All DNA laboratories will share DNA data prepared by them with the National and Regional DNA Data Banks.
- In criminal cases, the laboratory is required to return the biological sample to the investigating officer after depositing the DNA profile with the DNA Data Banks. In all other cases, the laboratory will destroy the sample and inform the concerned person.

Removal of DNA profiles

- DNA profiles in the crime scene index or missing persons' index will be removed from the DNA Data Banks on the basis of a written request by the individual. The DNA profile of a suspect will be removed after the filing of a police report or as per a court order. In the case of an undertrial, the DNA profile will be removed on the basis of a court order.

One-time keyboard search

- The Bill allows for a one-time keyboard search for any DNA sample collected in a criminal investigation. This means that the DNA sample can be compared with information in the index of the Data Bank, without the information from the sample being included in the index.

DNA Regulatory Board

- The Bill provides for a DNA Regulatory Board, which will supervise DNA Data Banks and DNA laboratories. The Secretary in the Department of Biotechnology, will be the ex-officio Chairperson of the Board.
- The Board will comprise an additional 12 members including: (i) experts in the field of biological sciences, (ii) Director General of the National Investigation Agency, (iii) Directors of the Central Bureau of Investigation, Centre for DNA Fingerprinting and Diagnostics, Central Forensic Science Laboratory, and (iv) member of the National Human Rights Commission.
- The functions of the Board include: (i) supervising DNA laboratories and DNA Data Banks, including quality control, (ii) granting accreditation to DNA laboratories, and (iii) developing modules for training manpower to deal with DNA related matters. Further, the Board will make recommendations to the central government on privacy protection in relation to the use and analysis of DNA samples.
- The Board is required to ensure that all information relating to DNA profiles with Data Banks, DNA laboratories, and other persons are kept confidential. DNA data may only be used for the identification of persons.

Offences and penalties

- The penalty for various offences such as: (i) unauthorised disclosure of information from the Data Bank, (ii) obtaining information from the Data Bank without authorisation, or (iii) using DNA sample without authorisation, is imprisonment up to three years and fine of up to one lakh rupees. Further, the penalty for intentional tampering or destruction of biological evidence is imprisonment up to five years as well as fine of up to two lakh rupees.

PART B: KEY ISSUES AND ANALYSIS

Bill may cover DNA technology for medical or research purposes

Clauses
2(1)(vi),
(viii), (ix),
13,
Schedule,
Long Title

The Long Title of the Bill states that its purpose is to regulate the use of DNA technology to identify criminal offenders, victims, missing, and deceased persons.⁵ However, the Bill also allows the use of DNA technology for certain civil matters specified in the Schedule. These include matters such as parentage disputes, pedigree, immigration or emigration, assisted reproductive technologies, and transplantation of human organs. In particular, the Schedule includes DNA testing for *issues relating to establishment of individual identity*.

Under the Bill, any laboratory that undertakes DNA testing must get accreditation from the DNA Regulatory Board, if it analyses a DNA sample for establishing human identification in respect of matters listed in the Schedule. Currently, laboratories also carry out DNA testing for medical or research purposes. For example, diagnostic laboratories use DNA testing to check whether an individual may be diagnosed with a particular disease, like cancer or Alzheimer's. The DNA testing conducted in these laboratories, can also be used to identify an individual.* Given the purpose of the Bill as stated in the Long Title, it is unclear whether the Bill intends to regulate DNA laboratories that conduct DNA testing for medical and diagnostic purposes.

* For example, breast cancer can be diagnosed by analysing mutations in the BRCA1 gene. This test involves analysis of large parts of the DNA, which could provide enough information to identify an individual.

Inclusion of civil matters in the Bill

Consent of individual not specified for DNA profiling in civil matters

Clauses 21, 23 The Bill requires consent of an individual when DNA profiling is used in criminal investigations or identifying missing persons. Victims of a crime as well as individuals arrested for the crime, must give their written consent before their DNA sample is collected. However, such consent is not required in case of DNA profiling for civil matters.

Storage of DNA profiles for civil matters in the DNA Data Bank

Clauses 17(1)(d), 26, 31 Under the Bill, DNA laboratories are required to share DNA data prepared by them with the National and Regional DNA Data Banks. It is unclear whether DNA profiles related to civil matters tested by DNA laboratories will also be included in the DNA Data Banks. Note that the Bill does not specify any indices in the DNA Data Banks for the storage of DNA profiles for civil matters. Further, there are no provisions for removal of DNA profiles for civil matters from the Data Banks.

If DNA profiles related to civil matters were to be stored in the DNA Data Banks, there may be a violation of the right to privacy. The Supreme Court has interpreted the Constitution to include right to privacy as a fundamental right.⁶ It states that this right may be infringed only if three conditions are met. These conditions are: (i) there must be a law, (ii) the law must aim to achieve a public purpose, and (iii) the public purpose must be proportionate to the infringement of privacy.⁶ Since the storage of DNA profiles for civil matters (such as paternity suits) in the Data Banks may not serve a public purpose, it may violate the right to privacy.

DNA profile may include information other than identification

Clause 2(1)(viii) Under the Bill, a DNA profile is defined as the result of analysis of a DNA sample for establishing the identity of a person. A DNA sample can provide additional information about an individual other than his identity. The Bill does not specify that information other than identity will not be included in a DNA profile.

While DNA can establish the identity of a person, its analysis can also reveal information related to his medical and physical characteristics, which could affect his privacy.^{1,2,3} For this reason, DNA profiling to establish the identity of a person is done using a specific portion of the DNA that does not reveal any additional information about the individual. This practice is followed in several countries including the United States of America and United Kingdom.^{7,8} Laws in countries such as South Africa and Ireland specify that the DNA profile will not contain information related to medical or physical characteristics of the individual.^{9,10} Note that the Law Commission in its report on the draft Bill of 2017, stated that *only* the portion of the DNA which provides information on identity will be used for profiling.² However, this is not specified in the Bill.

Removal of DNA profiles

Removal of profiles related to missing persons only on written request

Clause 31(3) The Bill states that the Director of the National DNA Data Bank must remove the profile of a suspect following the filing of a police report or a court order. Similarly, the profile of an undertrial must be removed following a court order. However, the profiles of individuals in the missing persons' index are removed on the basis of a written request to the Director. It may be argued that in addition to a written request, these profiles may be removed once the case is closed by the police. Further, the Bill does not provide for removal of DNA profiles of unknown deceased persons.

Table 1: Removal process for DNA profiles

Index	Removal process
Crime scene index	Written request
Suspects' index	Filing of police report or court order
Undertrials' index	Court order
Missing persons' index	Written request
Unknown deceased persons' index	No provision

Sources: DNA Technology (Use and Application) Regulation Bill, 2018; PRS.

No requirement for DNA laboratories to remove profiles

Clause 31(4) The Bill states that DNA profiles stored in different indices will be removed by the Director of the National DNA Data Bank following a written request, a court order or filing of a police report (see Table 1 for details). Note that DNA profiles are first prepared by laboratories and are then shared with the DNA Data Banks. The Bill does not require DNA laboratories to remove DNA profiles. The criteria for removal of profiles from DNA Data Banks and laboratories have been left to regulations. It may be argued that provisions with regard to removal of DNA profiles by DNA laboratories should be specified in the Bill.

No mechanism for grievance redressal for removal of profiles

The Bill provides that DNA profiles will be removed by the Director of the National DNA Data Bank as per the process described in Table 1 above. However, the Bill does not provide any mechanism for redressal of grievances in cases where the DNA profile is not removed from the data banks by the Director of the National DNA Data Bank.

Written consent for collecting DNA samples on arrest may be inadequate

Clause 21(1) If a person is arrested for an offence that carries punishment up to seven years, investigation authorities must take his written consent before taking his DNA sample. However, the Bill does not include safeguards to ensure that the consent is voluntary. In some other procedures, such as that of obtaining a confession for a crime, the Code of Criminal Procedure, 1973, provides a safeguard that the statement is made to a Magistrate (not the police).¹¹

Collection of DNA samples from photograph or video is unclear

Clauses 23(3)(b), 23(3)(d) DNA profiles are prepared from DNA samples collected from individuals. The Bill provides a list of sources for collection of samples for DNA profiling. This includes biological substances such as blood sample, hair, and mouth swab. However, the Bill also lists photographs or video recording of body parts as a source for sample collection. It is unclear how a DNA sample can be collected from a photograph or video recording.

Comparison of fingerprints and DNA profiling

Currently fingerprinting is used for the purpose of establishing the identity of a person charged with a criminal offence. However, the regulations governing the use of fingerprinting and the provisions related to DNA profiling under the Bill are different. For example, fingerprints can be taken for offences with punishment of rigorous imprisonment of at least one year or more, while there is no minimum threshold of offences for collecting DNA samples. Table 2 below compares the regulations related to fingerprinting with the provisions of the Bill.

Table 2: Comparison of fingerprint law with the Bill

Provision	Fingerprinting law	DNA Bill, 2018
Consent of the individual	<ul style="list-style-type: none"> No provision 	<ul style="list-style-type: none"> Written consent is required for collecting DNA samples for offences punishable with up to seven years of imprisonment. Consent not required for offences with punishment higher than seven years. In case consent is not given, a magistrate can order the collection of DNA samples.
Offences for which collection is permitted	<ul style="list-style-type: none"> Anyone convicted of or arrested for an offence punishable with imprisonment of at least one year or more. 	<ul style="list-style-type: none"> Anyone arrested for an offence under the Indian Penal Code, 1860. No minimum threshold of offence specified.
Destruction or removal	<ul style="list-style-type: none"> Fingerprints of an individual are to be destroyed if they are discharged or acquitted by any court. 	<ul style="list-style-type: none"> DNA profiles of suspects or undertrials will be removed following a court order or police report. Profiles in the crime scene or missing persons' index will be removed on a written request.

Sources: The Identification of Prisoners Act, 1920; The DNA Technology (Use and Application) Regulation Bill, 2018; PRS.

1. "DNA Technology in Forensic Science", Committee on DNA Technology in Forensic Science, United States of America, 1992.
2. "Report No. 271: Human DNA Profiling- A draft Bill for the Use and Regulation of DNA-Based Technology", Law Commission of India, July 2017, <http://lawcommissionofindia.nic.in/reports/Report271.pdf>.
3. "Nothing to Hide, nothing to fear?", Human Genetics Commissions, United Kingdom, November 2009.
4. Statement of Objects and Reasons, DNA Technology (Use and Application) Regulation Bill, 2018.
5. Long Title, DNA Technology (Use and Application) Regulation Bill, 2018, <http://www.prsindia.org/uploads/media/DNA/DNA%20Bill,%202018.pdf>.
6. Justice K. S. Puttaswamy and Ors. vs Union of India and Ors, AIR 2017 SC 4161.
7. Maryland vs King, Supreme Court of the United States, October 2012.
8. National DNA Database, NDNAD Strategy Board, Annual Report 2007-09, United Kingdom.
9. Section 36A(1)(fC), Criminal Procedure Act, 1977, South Africa.
10. Section 2(1), Criminal Justice (Forensic Evidence and DNA Database System) Act, 2014, Ireland.
11. Section 164, Code of Criminal Procedure, 1973.

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Annexure

The table below compares provisions of the DNA Technology (Use and Application) Regulation Bill, 2018 with the DNA laws of other countries.

Table 3: International comparison of DNA laws

	USA	UK	South Africa	Ireland	India (proposed Bill)
Purpose for collecting DNA	<ul style="list-style-type: none"> ▪ Criminal investigations. ▪ Identification of missing and deceased persons. 	<ul style="list-style-type: none"> ▪ Criminal investigations. ▪ Identification of missing and deceased persons. 	<ul style="list-style-type: none"> ▪ Criminal investigations. ▪ Identification of missing and deceased persons. 	<ul style="list-style-type: none"> ▪ Criminal investigations. ▪ Identification of missing and deceased persons. 	<ul style="list-style-type: none"> ▪ Criminal investigations. ▪ Identification of missing and unknown persons. ▪ Civil matters.
Process of collecting DNA samples from suspects	<ul style="list-style-type: none"> ▪ For federal offences, sample can be taken when charged with an offence. ▪ Process varies across states. 	<ul style="list-style-type: none"> ▪ Cheek swab can be taken when charged with an offence. ▪ Intimate samples require consent and authorisation. 	<ul style="list-style-type: none"> ▪ Cheek swab can be taken on arrest. ▪ Intimate sample can be taken only by medical practitioner. 	<ul style="list-style-type: none"> ▪ Cheek swab can be taken on order of inspector. ▪ Intimate samples require consent. 	<ul style="list-style-type: none"> ▪ Written consent required for collecting sample. ▪ Magistrate may order collection of samples. ▪ Consent not required for offences with penalty above seven years.
Removal/Retention of profiles	<ul style="list-style-type: none"> ▪ Profiles of individuals whose convictions are overturned are to be removed. ▪ Profiles of those arrested are removed if charges are dismissed. ▪ Varies across states. 	<ul style="list-style-type: none"> ▪ Profiles of individuals not convicted can be retained up to three years. 	<ul style="list-style-type: none"> ▪ Profiles must be removed in case of acquittal. ▪ Profiles cannot be retained beyond three years. 	<ul style="list-style-type: none"> ▪ Profiles are to be removed in three months in case of acquittal. 	<ul style="list-style-type: none"> ▪ Profiles of suspects or undertrials to be removed on court order or police report. ▪ Profiles in crime scene or missing persons' index to be removed on written request.
Information apart from identity contained in DNA profile	<ul style="list-style-type: none"> ▪ No provision. 	<ul style="list-style-type: none"> ▪ No provision. 	<ul style="list-style-type: none"> ▪ Profile cannot include physical or medical information. 	<ul style="list-style-type: none"> ▪ Profile to be derived from that part of DNA relating to identity. 	<ul style="list-style-type: none"> ▪ No provision.
Regulation of database and DNA science	<ul style="list-style-type: none"> ▪ DNA database managed by the Federal Bureau of Investigation. ▪ DNA Advisory Board recommends standards for forensic labs. 	<ul style="list-style-type: none"> ▪ Forensic Information Database Strategy Board governs the National DNA Database. ▪ Forensic Science Regulator ensures standards in forensic science services. 	<ul style="list-style-type: none"> ▪ Database maintained by an authorised officer. ▪ National Forensic Oversight and Ethics Board oversees DNA Database and processes related to DNA profiling. 	<ul style="list-style-type: none"> ▪ Director of Forensic Science Ireland (FSI) operates the DNA Database System. ▪ FSI responsible for processes related to DNA profiling. ▪ DNA Database System Oversight Committee that oversees operation of the DNA Database. 	<ul style="list-style-type: none"> ▪ Director to maintain the National DNA Data Bank. ▪ DNA Regulatory Board to supervise labs and provide advice on DNA Data Banks.

Sources: **United States:** DNA Identification Act, 1994, "DNA Arrestee Laws", National Conference of State Legislatures; **United Kingdom:** Police and Criminal Evidence Act, 1984, Criminal Justice and Public Order Act, 1994, Protection of Freedoms Act, 2012, National DNA Database Strategy Board Annual Reports; **South Africa:** Criminal Procedure Act, 1977, South African Police Service Act, 1995; **Ireland:** Criminal Justice (Forensic Evidence and DNA Database System) Act, 2014; **India:** DNA Technology (Use and Application) Regulation Bill, 2018; PRS.