NEW TOOL
Will enlarged DNA database help police in crime fight?

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VANESSA LYNCH

The real work starts when the Bill is finally promulgated.

Matching a human being's distinct genetic blueprint, the person's DNA, found on a crime scene, to a profile found on an extensive DNA database of offenders seems like a simple exercise these days. Done on almost every American of any age via television, and at law enforcement agencies in numerous countries around the world, it is hard to believe that it is not such an easy task in South Africa.

Not yet, anyway. Should the Criminal Law (Forensic Procedures) Amendment Bill clear the final hurdle and receive President Jacob Zuma's signature and be promulgated, it will allow for the South African Police Service (SAPS) to finally establish such an extensive DNA database in South Africa.

Working tirelessly for nine years to see this database become a reality, following the murder of her father—a crime where every scrap of DNA evidence was lost—Vanessa Lynch says the President's signature does not mean the job is done.

Lynch spent four years lobbying government to pass DNA-specific legislation and, once that was achieved, it took another five years to pass it through Parliament. As the project leader, she headed a non-governmental organisation. The DNA Project pursued this goal.

"When the Bill is actually promulgated, only then will I breathe a sigh of relief, because that will be when the real work begins," says Lynch.

"While the law may look good on paper, my mission is and has always been to see it turned into actual crime detection and reduction. Only when I see its implementation will I have the confidence that we, as a team, have made a difference."

What is a DNA Database?

The SAPS does have a DNA database, but it is populated by a mere 180,000 profiles. This is far short of the 850,000 forensic profiles from DNA collected at crime scenes.

The current SAPS database consists of two indices: a case work unit containing profiles derived from crime scene samples, and the reference index, containing profiles of known people, such as victims, suspects, arrested convicts and police personnel (used for identification purposes).

There is no current legislation regulating DNA collection by the SAPS, which means it has no mandate to take DNA samples from those arrested for serious crimes, or from convicted offenders.

However, the new Forensic Procedures Bill is set to establish and regulate the administration and maintenance of what will be called the National Forensic DNA Database of South Africa (NFDD). It will make it mandatory for DNA samples to be collected by specially trained police officers from those arrested on Schedule 8 offences, as well as those convicted of Schedule 8 offences.

Schedule 8 offences include treason, public violence, murder, rape, culpable homicide, sexual trafficking, robbery, theft, kidnapping and arson.

The new legislation provides for the conditions under which forensic DNA profiles may be retained or destroyed, explains Lynch. The use of these profiles, she adds, will only be conducted for the purpose of identifying the perpetrator of a crime, proving the innocence or guilt of a person, or for the prosecution or exoneration of persons.

It will also assist in the identification of missing persons and unidentified human remains.

In the end, the NFDD will allow for effective comparative searches between DNA profiles.

"If we increase the number of profiles on our database, we will increase the chances of finding a match and linking a DNA profile found at a crime scene to a suspect, or, at the very least, deriving additional intelligence therefore," explains Lynch.

"The DNA Bill, with its compulsory taking of DNA samples from arrested and convicted offenders, ensures that the database is populated for this purpose."

The DNA database will also allow for the ex post facto identification and conviction of a suspect.

By helping to convict, or rule out a suspect at an early stage, a DNA database saves valuable police and other crime detection resources, leaving them free for other investigations, or to be deployed towards crime prevention," notes Lynch.

New DNA Profiles Will Be Collected

There will be a distinction between bodily DNA samples and buccal DNA samples. Bodily samples are defined as intime and include buccal samples, whereas a buccal sample refers only to a cheek swab.

The Bill defines an intimate sample as a sample of blood or pubic hair, or a sample taken from the genitalia or anal orifice areas of the body of a person.

A police officer may only take a buccal sample, whereas a registered nurse or medical practitioner is authorised to take a bodily sample.

A police officer can be any police officer, or member of the Independent Police Investigative Directorate, who is not the crime scene examiner of the particular case, and who has successfully undergone the training prescribed by the Minister of Health under the National Health Act, in the taking of a bodily sample.

This means that the collection of buccal DNA samples from arrests and convicted offenders is logistically feasible, as it can be done by an authorised police officer, as opposed to relying on medical practitioners or registered nurses to perform this task, says Lynch.

The Department of Health's National Health Laboratory Service (NHLs) proposes that 100,000 police officers be trained in the taking of buccal samples over a five-year period.

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The SAPS will carry the cost of all the training, as well as the cost of the buccal and bodily sample kits.

The Forensic Procedures Bill also provides for the rights of persons in which buccal DNA samples must reach the SAPs forensic science laboratory (FSL) and be processed by a forensic scientist, which the Bill prescribes for the NFDD, says Lynch.

The Database and Its Indexes

The NFDD will have several indexes.

The first is the Crime Scene Index, which will contain forensic DNA profiles derived from biological evidence collected from crime scenes.

The Arrest Index will contain DNA profiles from all persons arrested for, or suspicion of committing, a Schedule 8 offence.

The Convicted Offender (CO) Index will contain DNA profiles from persons convicted of any schedule 8 offence.

The Investigative Index will contain profiles from persons taken with informed consent or by warrant, if necessary, for the purpose of investigating an offence.

The elimination Index will contain the DNA profiles of anyone who attends or processes crime scenes as a part of his/her official duties; people handling, processing or examining crime scene DNA evidence; people who service or calibrate equipment; people entering examination areas of laboratories, and the manufacturing or handling of consumables, equipment, utensils or reagents used in DNA sample collection and processing, and all new NIS personnel.

The Missing Persons and Unidentified Remains Index will contain profiles...
from unauthorized persons, or unidentified human remains.

Crime scene samples and profiles will be retained indefinitely, says Lynch.

Profiles migrate to the DNA Index database, where they are removed following acquittal, or if charges are dropped. A minor's profile is only retained for a set term after conviction, but remains in the database indefinitely in the case of an uncondemned, unless an order is made.

**But What If...**

Over the years, there have been some concerns around the collection and storage of new, more comprehensive SAPS DNA database.

One of these concerns relates to the implementation of DNA samples at crime scenes to throw the police officer off the scent of the real perpetrator. Lynch says this is a risk that applies to all types of evidence.

"It is important to note that DNA evidence is not a silver bullet - it is one type of evidence and you still have to prove your case in a court of law using all the available evidence. But DNA is a very valuable, reliable and objective form of evidence, which is why it is often used to solve crimes."

Also, should the DNA database be limited to Schedule 8 offenses?

The current policy runs the risk of not capitalising on the potential for numerous detections of other serious offenses, which do not fall under Schedule 8, says Lynch. However, owing to possible capacity demands on the FSL in the initial phase of the implementation of the DNA Bill, the legislation does allow for this provision to be revisited after five years, when the legislation will be reviewed.

Also, is the SAPS able to collect and look after an extensive database such as the one proposed in the Bill?

While the FSL falls under the Department of Police, it is operated by scientists, who will also have custody of the NFPD, notes Lynch.

The FSL also specifically states that the custodians of the NFPD, as SAPS, must ensure that the analysis, custody and disposal of DNA samples at a forensic DNA analysis laboratory, as well as the administration and maintenance of the NFPD, are managed independently of each other.

Further safeguards include 15 year imprisonment or a fine or a fine or any other matter or offense of information on the NFPD.

Currently, no such protection exists in respect of database profiles held by the FSL, which is yet another reason why laws regulating this aspect of the criminal justice system are urgently required, says Lynch.

The database will also have its own watchdog in the form of a National Forensic Oversight and Ethics Board (NFOEB), which will be established in terms of the DNA Bill. The board will consist of several members, five of whom will be members of the public with knowledge or experience in forensic science, human rights law or ethics relating to forensic science. They will be appointed by the Minister of Police and approved by the Minister of Justice.

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Another member will be from the South African Human Rights Commission.

The chairperson will be a retired judge or senior advocate with experience in human rights.

The responsibilities of the board are numerous and include monitoring the implementation of the legislation, oversight of operational processes to ensure best practices and handling of complaints.

The board intends to apply for a position on the NFOEB.

The DNA Project as an organisation will also continue to be involved in the national roll-out of not only forensic and crime scene DNA awareness programs, in conjunction with the FSL and the SAPS, but also legal DNA awareness programming within the criminal justice system, so that all relevant people are made aware of the provisions of the Bill.

Lynch says she would like to see the expanded database reach its full potential in around five years’ time from the Bill’s promulgation.

**Forensic Labs Busy**

Responding to the Parliamentary question in 2012, Police Minister Nathi Mthethwa said the SAPS FSL received 203,668 entries in 2011, with this number increasing by 26% in 2012. This is an increase of 26% from 2011, which was due to a number of government departments, including the Department of Health, Justice and Constitutional Development.

The number of entries at all units, received in 2011/12, grew by an additional 25% to 329,751, and between April 1 and September 30, 2012, 293,421 entries were received - a 26% increase, compared with the corresponding period in the previous year.

The increase in the number of suspects submitted to the FSL was evidence of the increased confidence law enforcement officers had in the ability of the forensic services to contribute to crime investigation, Mthethwa said.

He also spoke of an unsuccessful attempt to attempt to extort R500 000 from a police officer who had been involved in a successful prosecution.

"This is the kind of strategy we are starting to experience a positive turnaround strategy," Mthethwa said. News24 reported at the time that the SAPS had reduced the backlog of cases over the past few years to just more than 3,000.

**Proper Regulatory Regime**

The infamous Mandela effect, serial rapist, Shavani Phohlo, was linked to the rape of a ten-year-old girl through DNA evidence, Minister of Police spokesperson Zoele Mthethwa tells Engineering News.

He was found guilty on six counts of rape, two counts of theft and three counts of robbery with aggravating circumstances. He was given two life sentences.

But in the many of the many which would not have been successful, had it not been for the forensic analysis provided as additional evidence in the case?

He refers to forensic services as the police’s silent weapon.

"Although DNA analysis is a tool in the investigation of crime, it has been used in many cases where there is a need for proper regulatory regime, including our court of law. The use of DNA evidence in criminal cases is an important aspect in law enforcement,“ Lynch says.

"We also believe this Bill will go a long way towards bringing about changes in the way we handle forensic matters, including the possibility of not being charged with a forensic matter, or being able to identify the suspect."

Mthethwa says a cost implementation plan has been developed in tandem with the Bill, which sees the SAPS strengthened with the appointment of more forensic analysts.

"Although it is realised that the implementation of the Bill will be costly, it will, to a large extent, address crimes related to bodies found, which is an important aspect in combating crime," she says.

The SAPS has prepared an estimated cost to implement the Bill over a three-year period, which is based on an average of R500 million per year, in order to meet the costs associated with the implementation of the Bill. The SAPS has been working closely with government departments, including the Department of Health, to ensure that the costs associated with the implementation of the Bill are covered.