

Gone to the Dogs: A Public Health Nuisance on an Educational Campus in India

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Abstract Stray dogs in India contribute to a wide range of societal issues, including a significant number of fatalities, the spread of rabies, and other nuisances such as incessant barking, traffic disruptions, hygiene concerns, frightening and biting pedestrians, trespassing, littering in unwanted areas, and, in extreme cases, human deaths. These problems are perpetuated by the lack of adequate control measures and the inefficiency of existing policies, resulting in their steady escalation across the country, reaching alarming proportions. A detailed analysis of current laws and policies regarding stray dog management reveals considerable gaps and the absence of effective strategies to address the issue comprehensively. A focused study of the IIT Delhi campus, which hosts a daily human population of approximately 15,000 people, further underscores the gravity of the problem, even in a peaceful, academic, and research-oriented institution. Drawing on a review of the campus's current situation, discussions with various stakeholders, and findings from a questionnaire survey conducted among the campus community, this study offers logical and practical recommendations to address these critical and disturbing concerns.

Keywords Stray dogs, Rabies, Animal Birth Control (Dogs) Rule 2001, Dog bites

1. Introduction

1.1. Stray Dogs – A Manmade Disaster

Dogs are the world's most common and widespread carnivores and are present in large numbers across the globe. However, the numbers of stray dogs are particularly large in developing countries due to minimal policies to control their population.

'Stray dog' is defined as any dog found to be unaccompanied by a responsible owner in a public place. To some extent, these stray dogs are fed by people in the community and other genuine animal sympathizers, but are mostly allowed to roam and reproduce freely. Stray dogs are natural scavengers, and they mostly rely on open street garbage for their food. One of the primary reasons for such a large number of stray dogs in India is the presence of open garbage in most cities. Notably, the magnitude of stray dog nuisance in Indian cities is shockingly high. Estimates vary, but some put the total number of stray dogs in India at 70 million in 2023, having risen from a possible 30 million in 2014, and "they present a variety of health and safety challenges." [1], [2] This amounts to about one dog for every 20 people of India's population. To emphasize the problem, the civic authorities in Mumbai made an astounding revelation in the Supreme Court in 2016,

stating that since 1994, 429 people succumbed to rabies and an astonishing 1.312 million people were injured by dog bites. The number killed and injured by dogs in that period was more than the two infamously deadly terror attacks in Mumbai -- the 1993 serial bomb blasts and the 26/11 attack in the Taj Hotel in 2008. [3], [4] One can imagine that these numbers are not approved even by animal lovers who also want a better environment for the dogs.

A man-made disaster can be defined as a devastating event caused directly and principally by one or more identifiable deliberate or negligent human actions. Considering the nuisance created by dogs over the past century and the inefficiency of humans in countering this problem over the years, it is justified to call the stray dog problem in India "a manmade disaster."

1.2. Need for the Study

In India, stray dogs are a common sight, found on city roads, highways, residential areas, bus stops, railway stations, schools, colleges, hotel premises, hospitals, and various other public spaces. These dogs can often become aggressive, attacking people for a range of reasons. When fear between humans and dogs escalates, it frequently results in injury, harm, or even fatalities. Observations show that the most vulnerable to such attacks are typically the poor and disadvantaged sections of society, who often have mixed feelings about stray dogs and may let their guard down. Given their own poverty, the poor people naturally develop sympathy for the dogs. Despite these challenges, India not only tolerates the presence of stray dogs but actively enables it through legal protections.

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While such measures may appeal to animal lovers as fostering a haven for animals, they often overlook the severe and daily struggles faced by millions of people due to this pervasive issue.

Stray dog populations and dog nuisance becomes more severe because of their reproductive capacity. Dogs become sexually mature before they are a year old or sometimes before six months. And the period of gestation in dogs is only approximately nine weeks. Different dog breeds on an average have found to produce four to six puppies per litter. Considering the gestation period of dogs and early maturity age, one can visualize the tremendous growth in dog populations over a particular year or one season if dog population control measures are not implemented properly. Furthermore, most of these dogs remain on the streets as strays and further add to the nuisance. This makes the problem even worse [5].

Presently in India, habitat control and animal birth control programmes are being undertaken to control the dog nuisance. NGOs and government organisations are working on various programmes to control stray dog populations but the resources available to them are limited. Thus, most of these programmes have been ineffective and the growth of stray dog populations has not reduced. However, it is imperative that the population and menace of dogs be controlled as these pose serious threats such as the spread of rabies and other zoonotic diseases. Rabies is prevalent and a major concern in India. In addition, the World Health Organisation (WHO) reports that dogs are the main source of human rabies deaths, contributing up to 99% of all rabies transmissions to humans. The WHO also reports that rabies infection causes thousands of deaths every year in Asia and Africa.

There is no doubt that the State and the Animal Welfare Board should take steps keeping in mind various statutory requirements like Prevention of Cruelty to Animals Act, 1960 and the Animal Birth Control (Dogs) 2001 Rules, which support animal rights. But these should not be grounds for them to neglect their mandatory duty of saving people from the stray dog menace, especially given that India's stray dogs cause as many as an astronomical 20,000 deaths annually due to rabies [6]. However, India has accumulated this problem over many decades, and the situation does not seem to be improving despite the best efforts of the authorities and animal rights groups.

The Constitution of India (Article 21) further assures the right of life to citizens of India, and this right includes the right of citizens to live in an atmosphere free from fear of the stray dog menace. Over the years, India has seen a paradigm shift in the policies from rampant killing of dogs in the British era to extreme "pro-life" policies being adopted in the present. Moreover, India has failed to frame a rational, logical, scientifically valid, and easily implementable dog ownership or population control strategy [7].

The highly renowned campus of IIT Delhi in the national capital, although having a secured and controlled environment, is also not spared by these stray dog nuisances. There were an estimated 250 stray dogs on the campus in March 2022

reported by the IIT Alumni Association. These dogs have been known to disturb the proper working of the campus, including entering classrooms and denying access to professors, entering restaurants and dormitories, entering the mess halls where students eat, and barking at students going to class. Though the IIT Delhi alumni association tried to raise Rs. 600,000 for the nutrition of the dogs on campus, they were only able to reach Rs. 182,000. [8] Moreover, the dog population has increased on campus since 2017 when the estimate was 150 dogs when information was collected from the IIT Hospital, thus representing a 10.76% year-on-year increase, which far outpaces the increase in human population. Despite a few sterilization efforts at irregular intervals, it is difficult to battle the dog menace when a female dog gives birth to litters of 7 to 14 puppies. Consequently, the implementation and control challenges are many and the staff and funding resources for tackling the dog menace have not been increased sufficiently. Thus, the otherwise beautiful campus has literally 'gone to the dogs.'

This study aims to understand the status of dog hazards in India and what we can do about it. Through a detailed analysis of present laws, rules, and regulations, this study tries to identify how much these laws have been successful in controlling stray dog populations. An unbiased and objective approach is adopted. Details were also collected on the IIT campus to find out the consequences of dog hazards. Based on the review of present laws and interaction with concerned authorities in the Institute, recommendations are provided on how this problem can be tackled in the near future.

To justify the notion of dogs serving as the most faithful animal for humans, we should aim towards creating a separate and safe ecosystem for them instead of leaving them abandoned on the streets. Ideally, the street is not supposed to be the dwelling place for a dog — for the benefit of both the welfare of humans and a healthy and loving life for the dogs.

1.3. Methodology

The study is organized as follows:

1. First, the outline is presented, covering the motivation and need for study.
2. Next, we review the extent of stray dog nuisances in India that reviews the cases of rabies and other stray dog related problems faced by citizens, foreigners, and tourists in India. Dog hazard and related cases in the southern-most state of Kerala and the northern-most state of Jammu & Kashmir are also reviewed as samples because every state cannot physically be reviewed. Neither can other countries be reviewed as the focus is on India, and neither do we have other countries whose situation can be considered comparable to India.
3. Later, measures taken by the Indian Government are highlighted, and the effectiveness of these measures in tackling stray dogs is discussed.
4. Thereafter, we get an overview of the existing rules and regulations of India in the context of stray dogs.
5. With that background, campus-specific dog nuisances are then analysed at IIT Delhi by reviewing results of a

questionnaire survey and inputs from the authorities on campus.

6. Then we look at actions taken at IIT Delhi, using 2017 data as examples.
7. Finally, we provide recommendations that can be adopted on campus to tackle this issue.

2. Stray Dogs in India: A Serious Issue of Public Health

We must understand the background that stray dogs in India are not just a nuisance, they are sadly also a public health catastrophe. When certain stray dogs bite humans, they infect those people with rabies, a viral disease that causes acute inflammation of the brain. [9] According to information obtained under RTI, from January to October 2015 there were 77,294 cases of dog bites in New Delhi alone which is nearly one bite every 6 minutes. [10] Consequently, dog bites are a serious concern in India. These are the real facts, even if they sound alarming.

Although known and feared for so many years, rabies remains a real and present threat to thousands of people, especially in India. It so happens that in the case of rabies, India doesn't even know the full extent of the disease. For instance, doctors are not required to report rabies cases, and there is practically no information on how widespread it might be among animals. Even estimates on the number of stray dogs is not reliable, ranging from 30 million to 70 million. [11] For instance, the State of Delhi's first and the only attempt at counting stray dogs was in 2009 but it failed to give a clear picture. [12] Between 2005-2020, the National Health Profile (NHP) reported 2,863 rabies cases in India; Following Pareto's Law, the five states of West Bengal (43%), Andhra Pradesh (10%), Maharashtra (8%), Karnataka (7%) and Delhi (6%) contributed about three-fourths of all the cases. [13]

However, estimates have come in for the top six states for dog-bites in 2024: the State of Maharashtra, whose major city is Mumbai, had 435,136 dog-bites; Tamilnadu in the South came next with 404,488; Gujarat in the West, 241,846; Bihar in the North Central, 219,086; Uttar Pradesh, the most populous state, had 218,379; and Karnataka, the hub of India's silicon valley in the South, had 208,656 dog-bites. [14] Overall, the Central Ministry of Health and Family Welfare reports that dog bites have seen a year-on-year increase of an astonishing **26.5%** between 2022 and 2023, from 2.18 million dog-bites in 2022 to 2.75 million in 2023. [15] With this data, who can say, to emphasize the title, that India has not gone to the dogs!

2.1. Dogs: The Main Cause of Human Rabies

In India, rabies is one of the neglected diseases that predominantly affect poor people such as skilled workers, laborers and farmers. [16] Moreover, populations that live in remote socio-economically poor communities and have poor

knowledge of rabies transmission are more vulnerable to rabies attacks. [17] According to the WHO, roughly 36% of the world's rabies deaths occur in India each year, most of those when innocent children come into contact with infected dogs. Though effective human vaccines are available for rabies, they are not readily available for people in need as most local clinics and hospitals don't carry these vaccines. Also, the treatment of rabies can be a financial burden on affected families in India whose 2023 average daily income is around US\$ 6-7 per person. In contrast, full treatment at a private clinic can cost \$25-50 per case, which is often unaffordable except with additional economic and health suffering. [18] Though government clinics give the rabies vaccine for free, the waiting times and quality of service can be bad enough such that the disease could spread considerably in the human before the afflicted person receives treatment. Hence, this is a grave problem in India.

Through a WHO sponsored epidemiological study of animal bites in India, it was concluded that mostly children and men from poor communities suffered the maximum dog-bites. Most of the bite victims did not apply proper wound care and were mostly dependent on government hospitals for anti-rabies vaccination and majority of them didn't complete the full course [19].

The primary reason for such high rabies deaths in India is the sheer number of stray dogs in India, in an unholy battle of human vs. dog. The seriousness of the issue can be realized by the fact that "No country has as many stray dogs as India, and no country suffers as much from them." Thus, India is particularly unique and has no comparison with any other country. And then,

"Packs of strays lurk in public parks, guard alleyways and street corners and howl nightly in neighborhoods and villages. Joggers carry bamboo rods to beat them away, and bicyclists fill their pockets with stones to throw at chasers. Walking a pet dog here can be akin to swimming with sharks." [20]

Though "Dogs essentially started out as scavengers, they evolved to hang around people rather than to be useful to them." [21] Then in 2001, the Govt. of India outlawed the killing of any dog. Yet, because of the fundamental dog-human relationship, some dogs are fed and cared by residents who value them as guards and as companions, although distant ones. [22]

The Animal Birth Control (ABC) Rules, 2001, barred the killing of dogs in India, and the stray population has increased so much that officials across the country have expressed alarm. Though some efforts have been taken by the Central and State Governments to prevent rabies, India has few large-scale interventions and organizations to deal with stray dogs as these require a lot of resources [23]. According to reports by WHO, experts agree that the main constraint to rabies elimination in India is the lack of coordination and the lack of a comprehensive national program. [24]

India Today highlighted this issue of lack of coordination and lack of a national program. [25]

“The Animal Welfare Board of India (AWBI), a statutory body under the Environment and Forests Ministry, is struggling to rope in NGOs and animal welfare groups to implement the recently-approved National Rabies Control Pilot Project. But due to dearth of funds and out-dated policies the government's two-pronged programme to control their numbers through sterilisation and to prevent the spread of rabies has been hanging fire.”

In a dated study of 2012, a state-wise estimate of rabies deaths in India identified rabies deaths in India to be 11,300

(Table 2.1). [26] A few small states that represent only 7% of India's population were not included in the study. Including those states would only increase the number of rabies deaths by 100 to 500. The North-eastern states on the Myanmar border typically either don't report rabies deaths or else have little to no rabies. They also have large Christian populations. Further, dog meat is consumed in Nagaland, a Christian dominant state, and one hardly sees a stray dog in Nagaland. [27] Consequently, one wonders if religion may be a factor in keeping dog bites and rabies deaths down, since Goa, another state with a sizeable Christian population also has very few rabies' deaths. In other words, all states with a sizeable Christian population have none to very low deaths from rabies.

Table 2.1. Geographic distribution of rabies deaths in Indian states (2012 data)

State	Deaths per 100,000	Estimated rabies deaths
Andaman & Nicobar Islands	no data reported	no data reported
Arunachal Pradesh	0.51-1.5	less than 100 reported
Assam	0.51-1.5	400
Bihar	1.51-3.5	1600
Chandigarh	0.5 or less	no data reported
Chhattisgarh	above 3.5	900
Dadra & Nagar Haveli	0.5 or less	no data reported
Daman & Diu	0.5 or less	no data reported
Delhi	0.5 or less	less than 100 reported
Goa	0.51-1.5	less than 100 reported
Gujarat	0.5 or less	less than 100 reported
Haryana	0.51-1.5	200
Himachal Pradesh	0.5 or less	less than 100 reported
Jammu and Kashmir	no data reported	no data reported
Jharkhand	no data reported	no data reported
Karnataka	0.51-1.5	400
Kerala	no data reported	no data reported
Lakshadweep	no data reported	no data reported
Madhya Pradesh	0.51-1.5	600
Maharashtra	0.5 or less	200
Manipur	no data reported	no data reported
Meghalaya	no data reported	no data reported
Mizoram	no data reported	no data reported
Nagaland	no data reported	no data reported
Odisha	1.51-3.5	800
Puducherry	0.5 or less	less than 100 reported
Punjab	0.51-1.5	300
Rajasthan	0.51-1.5	400
Sikkim	no data reported	no data reported
Tamil Nadu	0.5 or less	200
Tripura	0.51-1.5	less than 100 reported
Uttar Pradesh	1.51-3.5	4300
Uttarakhand	above 3.5	400
West Bengal	0.51-1.5	600
Total Count		11,300.00

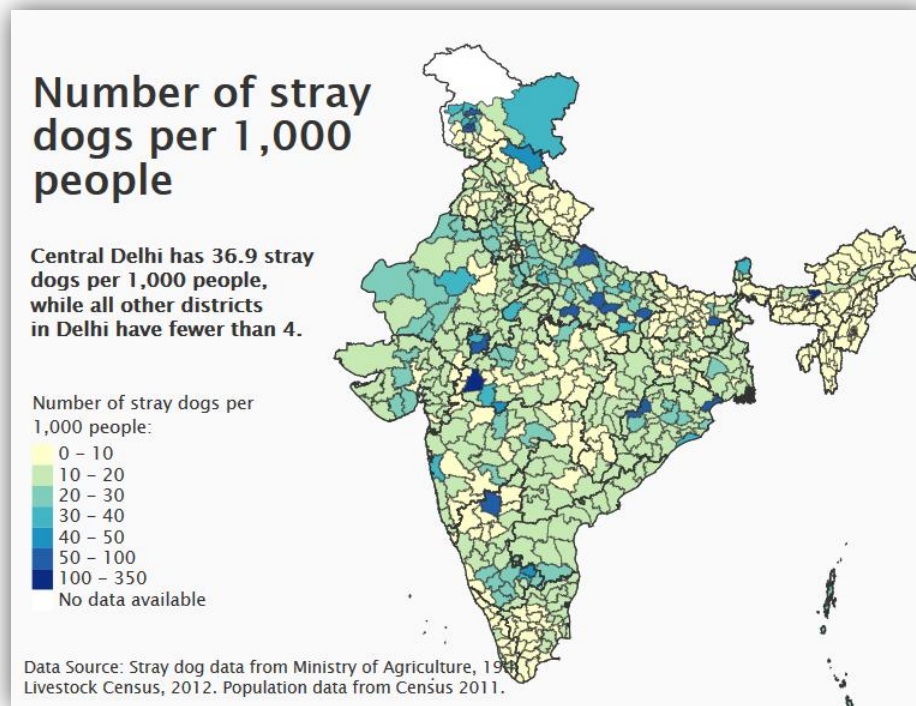


Figure 2.2. Stray dog population distribution across the states of India [34]

But India accounts for 35% of world rabies deaths, [28] and in 2023, the number of rabies deaths was estimated at 21,000. [29] Hence, despite the struggles and efforts of India, the battle is slipping away from Indian authorities, and the dogs are winning the war against the humans. Ironically, the dogs of war in this case are the rampant freedom of the dogs themselves, which is advanced by animal lovers.

But it was not easy to acquire accurate data on rabies deaths, as the numbers vary dramatically and reporting is erratic by both private and government hospitals. In contrast to 21,000 deaths estimated above in 2023, only 250 deaths nationwide were reported in 2022. [30] This wide gap is due to the likely reason that reporting rabies deaths is not mandatory in India. However, animal associations have estimated the credible deaths.

The lacunae between legislation and practice leads to information suppression and further thus misleads the public. However, the newspaper reportings of vicious attacks by dogs on children and men has continued to be prominent in India.

2.2. Other Problems Associated with Stray Dogs

Apart from rabies, there are other common problems that can be caused by stray dogs, as follows:

1. Stray dogs often defile and sully the environment and create hygiene issues.
2. They tend to bark and howl, especially when they are involved in a fight with one another, which happens quite regularly as they try to protect their turf, and this disturbs people and birds in the nearby surroundings,

often at night.

3. Street dogs cause traffic safety issues on roads. A street dog can cause a collision with a vehicle when it runs on the road, which might result in injury to people and to itself.
4. Dogs are not always gracious towards human beings and there are high chances that some person might get bitten if the stray dog is not controlled. Female stray dogs that have puppies are often more conscious and aggressive and they tend to attack people who approach towards their family.
5. Stray dogs always prefer to roam around in groups and they cause a threatening feeling among people. They establish territories and viciously defend them against other dogs.

As per a survey conducted in 2003, the cost of treatment alone annually runs to hundreds of crores of rupees, which results in the loss of 38 million man-hours due to around 20 million bite cases in India. [31] Apart from this, stray dogs result in significantly high costs that are associated with direct and indirect fatalities on roads.

The increasing number of the stray dog population in India has further increased the severity of the above-mentioned problems. And thus the severity increases each year rather than be mitigated. Figure 2.2, shows the distribution of dogs in India per 1000 people. Central Delhi alone was estimated in 2017 to have 400,000 stray dogs with nearly 40 stray dogs per 1,000 people [32]. So now, the dog menace in a couple of states in India – one in the very South and one in the very North – will be discussed.

2.3. Dog Menace in the State of Kerala

The Kerala government had been inactive and lethargic in their actions against controlling stray dog populations leading to a huge increase in the stray dog population, which posed grave threats to humans and livestock, thus forcing people to start culling dogs themselves. Moreover, a large number of women have been attacked and bitten by stray dogs in the coastal belts of Kerala. A report presented to the Supreme Court of India revealed that over 100,000 individuals were attacked by stray dogs in Kerala during the 2015-16 period. The stray dog population of Kerala is estimated to be about 250,000 that can primarily be attributed to a large amount of chicken waste dumped from restaurants all over the state without cleanliness. In 2015, 5,948 people in Thiruvananthapuram district and 4,916 people in Palakkad district were bitten by stray dogs. In 2016, a woman was killed by a stray dog attack in Pulluvila village in Kerala. In October, 2016, a 90-year-old man was killed in Varkala by the attack from a pack of street dogs. [33]

Due to this menace, people themselves started killing stray dogs by feeding them poisoned meat. In 2016, a social worker named Jose Maveli was arrested for killing street dogs in large numbers. It was reported that Maveli killed about 25 stray dogs in the Chengamanad panchayat of Ernakulam [35]. The politicians started arranging open culling of stray dogs and expressed willingness even to go to jail. On the other side, animal lovers condemned this move and approached courts regarding these barbaric killings. Thus, the battle lines were drawn.

A Supreme Court appointed committee slammed the Kerala government for their negligence, leading to increases in stray dog populations and the menace caused by them, and asked the government and local bodies to tackle this problem in accordance with legal provisions by conforming to ABC (dogs) Rules 2001 (discussed later in this article). [36]

2.4. Dog Menace in Jammu & Kashmir

The failure of authorities to take measures for controlling the population of stray dogs led to many incidents of dog bite cases. The approximately 100,000 stray dogs on the streets in Jammu Kashmir often attack pedestrians. [37] Health authorities said that above 50,000 people, mostly children and women were bitten by stray dogs in the years 2013-2017, and some of the victims even died of rabies. [38] Citizens complained that during nights, groups of dogs begin barking loudly, which alerts another group of dogs somewhere else, resulting in a commotion of loud noises of constant barking and howling. "As per the survey of the Srinagar Municipal Corporation there is one stray dog for every 13 people, 350,000 pups are born every year as a stray female dog on an average gives birth to 14 pups". Consequently, there was a widespread demonstration against the persistent problem of stray dog bites and government's negligence in handling it. Some civil society groups even threatened to undertake dog culling themselves if the government does not act.

"Get rid of stray dogs, it's not AFSPA" said independent

lawmaker Engineer Rashid who introduced the bill titled 'The Jammu and Kashmir Curbing the menace of stray dogs bill, 2015'. The bill was put to vote in the next assembly session to empower local authorities to sanction killing of the canines in "extreme situations". The bill also had a provision to pay compensation to the "victims of dogs" [39]. However, the bill failed. [40]

"Stray dogs have a right to live", was how the Supreme Court reacted when a submission was made that such canines should be completely destroyed across the country. A bench of Justices comprised of Dipak Misra and R Banumathi observed that though culling of stray dogs was permissible, there has to be a balance and a proper method for this, the bench said "Nobody can destroy stray dogs in their entirety. They also have a right to live". [41], [42], [43] Consequently, the Kerala government started to take proper measures to curb the population by taking the help of animal Welfare Board and local authorities, so that needless killings do not take place.

2.5. Steps taken in India

India has been grappling with the issue of stray dogs for the past two centuries, and there is no doubt that all actions taken towards increasing safety must be acknowledged and credited. During the colonial era, the British addressed the problem by culling stray dogs, a practice that continued until India gained Independence in 1947. However, this approach underwent a significant transformation in 1960 with the enactment of the Prevention of Cruelty to Animals Act. This legislation prioritized the humane treatment of animals, emphasizing the prevention of unnecessary pain or suffering. As a result, the practice of culling stray dogs was gradually curtailed, reflecting a more compassionate approach to managing the issue.

The problem of stray dogs increased considerably from 1960 to 1990. In 1993, the government admitted that its stray dog program was a failure, since both rabies deaths and the stray dog population had increased. Because of this, and after a decade in 2001, the Government of India came up with Animal Birth Control (ABC) Rules 2001 to tackle the stray dog problem. The Government focused on sterilizing stray dogs, vaccinating them against rabies, then releasing the stray dogs back to their original territories instead of killing them. However, this process has not worked well because of the sheer number of dogs and lack of resources.

In its report, a three-member committee headed by former Kerala High Court Judge, Justice S. S. Jagan expressed the gravity of the problem, and wrote -

"There have been incidents of stray dogs chasing, attacking and biting school children, aged persons, pedestrians, morning walkers and two-wheeler riders... More than one lakh people in the state have been bitten by dogs in 2015-16". [44]

Similar issues were raised by other courts. For instance, the Bombay High Court gave judgements to reduce dog population by killing strays as humanely as possible. These

orders faced significant backlash and were eventually overruled by the Supreme Court.

Although, killing of stray dogs has been opposed by animal welfare boards and dog lovers, which is a reasonable and understandable point of view, it is a hard fact that India has considerably failed in tackling the issue of stray dogs from the number of rampant and numerous dog bites that still persist.

A lawyer who represents NGO Common Cause said:

"Cases of dog bites in India are increasing. The dogs should be kept away from streets because they stop people from going for walks. Government has largely failed in controlling the population of stray dogs because their sterilisation programme didn't work. Dogs are still multiplying on the streets." [45]

However, the National Rabies Control Project has not been able to take off, because

"[d]ue to dearth of funds and outdated policies, the government's two-pronged programme to control their numbers through sterilisation and to prevent the spread of rabies has been hanging fire." [46]

3. Constituional Acts, Rules, and Regulations

3.1. Introduction

Stray dogs are recognised as a nuisance by many, whereas others consider that they are also living beings whose rights need to be protected. Animal workers realize there are ethical considerations necessary to take into account while finding solutions on how to manage situations where dogs hurt humans. But for dogs to hurt innocent humans is not accepted anywhere. On the other side, people often do not know the ways to handle dog issues due to improper understanding of the existing laws. Current laws contain various provisions that protect the rights of animals, but the safety of human beings should not be compromised, as seems to be the apparent case. In the context of stray dogs, the following sections give a brief overview of the existing laws for a better understanding.

3.2. Legislation in India

3.2.1. Article 51A (g)

Article 51A (g) [47] places a fundamental duty on all citizens

"to protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures."

Thus, stray dogs need to be handled compassionately.

3.2.2. Indian Penal Code, 1860

As per IPC section 428 and 429, killing or maiming any animal, including stray animals, is a punishable offence. The

section 428 states -

"—Whoever commits mischief by killing, poisoning, maiming or rendering useless any animal or animals of the value of ten rupees or upwards, shall be punished with imprisonment of either description for a term which may extend to two years, or with fine, or with both".

Section 429 states

"Whoever commits mis-chief by killing, poisoning, maiming or rendering useless, any elephant, camel, horse, mule, buffalo, bull, cow or ox, whatever may be the value thereof, or any other animal of the value of fifty rupees or upwards, shall be punished with imprisonment of either description for a term which may extend to five years, or with fine, or with both".

This raises an important question: who determines the value of a stray dog, and who is responsible for paying? What happens if the community places no value on the stray dog? Furthermore, it is essential to consider who will pay and to whom the payment should be made. Should it be permissible to euthanize an animal if no one in the community attributes value to it, provided notice is given to the society, club, or agency advocating for the culling of stray or rabid dogs? Another critical aspect is the extent of jurisdiction for payment. For instance, if no one in North Delhi is willing to pay Rs. 10 for a dog, is it reasonable to explore whether someone in Gurugram or Lucknow might be interested? This lack of clarity highlights a significant gap in the law, stemming from its failure to provide precise guidelines on these matters.

3.2.3. Prevention of Cruelty to Animals Act, 1960

Conveying or carrying animals whether in or upon any vehicle, in any manner or position which causes discomfort, pain or suffering is a punishable offence under two Central Acts. The Prevention of Cruelty to Animals Act [48] even prohibits beating, kicking or causing unnecessary pain and suffering to animals including stray dogs. But section 11 (3b) also mentions it will not apply to "*the destruction of stray dogs in lethal chambers by such other methods as may be prescribed*". Thus, provisions of the act indicate killing of stray dogs may be carried out in a prescribed manner if required. The 1960 Act prohibits cruelty to animals, but it should not be misunderstood as a ban on destroying stray dogs that have become a risk to human life. In this regard, Section 9(f) of the Act explicitly states that -

The functions of the Board shall be to take all such steps as the Board may think fit to ensure that unwanted animals are destroyed by local authorities, whenever it is necessary to do so, either instantaneously or after being rendered insensible to pain or suffering.

In the same 1960 Act, Section 9.(d) mentions the functions of the Animal Welfare Board about construction of sheds for veterinary assistance to animals; and Section 9.(e) mentions the functions of the Board to advise on the design and maintenance of slaughter houses, reproduced below.

Section 9(d): The functions of the Board shall be to take all such steps as the Board may think fit for amelioration of animals by encouraging or providing for, the construction of sheds, water-troughs and the like and by providing for veterinary assistance to animals.

Section 9(e): The functions of the Board shall be to advise the Government or any local authority or other person in the design of slaughter-houses or the maintenance of slaughter houses or in connection with slaughter of animals so that unnecessary pain or suffering, whether physical or mental, is eliminated in the pre-slaughter stages as far as possible, and animals are killed; wherever necessary, in as humane a manner as possible;

Section 11.(3) of the 1960 Act empowers any police officer above the rank of a constable or any person authorised by the State Government to decide on the destruction of a suffering animal.

These same points were reiterated by Supreme Court order dated 18th November 2015. [49] The order emphasised Section 9 (f), mentioned above, stating that it is the duty of board to ensure that unwanted animals are destroyed by local authorities, wherever necessary. [50]

Section 38 of the animal protection act allows the central government to make rules from time to time to carry out the stated purpose in the Prevention of Cruelty to Animals act. Based on the power conferred under section 38, the central government has made the Animal Birth Control (Dogs) Rules, 2001.

Considering the above laws and regulations, we understand that there are strong rules for protection of animal rights in India, but provisions also legally allow capturing/killing of animals depending on the case at hand. Apparently, the laws are silent on mass killing of nuisance animals. So, if in the opinion of a constable or higher, a whole community of dogs are generating an unbearable nuisance, it appears possible to construct suitable slaughter houses to catch and exterminate the animals.

At the same time, Article 47 of The Constitution of India recommends that it is the primary duty of the state to improve public health and the standard of living. Article 47 states that: [51]

The State shall regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties and, in particular, the State shall endeavour to bring about prohibition of the consumption except for medicinal purposes of intoxicating drinks and of drugs which are injurious to health.

Hence, it is possible to argue that nuisance dogs so damage the standard of living and so damage public health through dog-bites that slaughter becomes the only reasonable recourse, especially since relocating dogs is also prohibited under other laws. (Though psychotropic drugs are banned in India, alcohol has been allowed for other reasons). A detailed

study of Animal Birth Control (Dogs) Rules, 2001, and a closer scrutiny of its current implementation level will help understand steps that have been taken legally and how successful they have been in ensuring public health standards. This is now discussed below.

3.2.4. Animal Birth Control Rules, 2001

In 2001, the Ministry of Culture framed the Animal Birth Control (Dogs) Rules [52], or the ABC rules, under the Prevention of Cruelty to Animals Act, 1960. Animal Birth Control is stated to be the most humane method of controlling dog populations and rabies. In this method, the dogs are captured, surgically neutered, vaccinated against rabies and re-released to the same area from where they were captured. ABC programs are underway in many places around the world. In India this includes the cities of Bengaluru, Chennai, Delhi, Hyderabad, Jaipur, Kolkata, and Mumbai.

Rule 3 of ABC Rules, 2001, highlights the classification of dogs and their Sterilization. The rule specifies that all dogs are to be classified under pet dogs and street dogs. Pet dogs are to be maintained by licensed owners who will be responsible for controlled breeding, immunisation and sterilisation. Street dogs are to be sterilised and immunized with the joint endeavours of the animal welfare organisation, private individuals, and the public entity. Thus, the rule clearly mandates that it is the duty of local authorities to sterilize dogs that are not owned by private owners. Reports on the high number of stray dogs over the years, and various writ petitions in court, [53] clearly suggest that the concerned authorities have not taken appropriate measures required by statutory provisions, which has had the result of adversely affecting public health and safety.

Rules 4&5 of ABC, 2001, give guidelines on the formation of a monitoring committee to plan and manage dog control programs and lists the committee's functions and responsibilities. But in most Local Authorities, a monitoring committee as referred to in Rule 4 has not been constituted. Rule 5(e) states that the committee should get a survey done of the number of street dogs by an independent agency and should monitor the dog bite cases. However, it is evident from all sources that there is no accurate estimate regarding the number of stray dogs in India. Also, there is a lack of reliable methodology, agreement, and resource constraints to perform stray dog census in individual localities. Since the numbers are not known accurately, the true magnitude and seriousness of the problem is not realized, and control measures are not planned effectively.

Rule 6 of ABC, 2001 speaks to the obligations of the local Authority to provide dog shelters, dog vans, and to ensure sterilisation and immunization of street dogs. Rule 7 provides procedures for capture, sterilisation, immunization, and release of the dogs. As per Rule 7 (3),

“all the dogs caught will be tagged for identification purposes and to ensure that the dogs are released in the same area after sterilization and vaccination.”

Also, Rule 7 (7) states that

“at a time only one lot of dogs shall be brought for sterilization, immunization at one dog kennel or dog pound and these dogs shall be from one locality.”

This procedure is followed to ensure that dogs are released in the same area after sterilization and vaccination as from where they were captured. However, this process has a limitation that authority can only target a few localities at a time based on availability of dog kennels with them. Because of this, there is always a chance that the unsterilized dogs in groups will spill over into areas where sterilisation has been done and they might not be sterilized or attended to until or unless all other localities are covered.

Rule 9 provides details about euthanasia of incurably ill and mortally wounded stray dogs after diagnosis by a qualified veterinarian. Subsequently, Rule 10 enumerates procedures to be adopted for furious or dumb rabid dogs. Thus, Rules 9 & 10 provide procedures to be followed for dealing with stray dogs that fall under these categories. There is no mention about treatment of stray dogs that are a menace or cause public nuisance and that do not fall in the categories of Rule 9 & 10. However, a few states like Karnataka have provisions for these in their Municipal Corporation Act., which allows action on dogs that are a threat to public health and life. The Karnataka Municipal Corporation (KMC) Act of 1976 is produced below:

Dogs which do not come within the scope of Rule 9 or 10, but which are a menace or cause nuisance irrespective of whether there is evidence of such dogs having mauled or bitten children or adults could be exterminated in the manner specified in Rule 9 of the ABC Rules, 2001 under the orders of the Commissioner of the BBMP as per the provisions of the KMC Act, 1976.

Rule 10 states that the dogs should be captured based on specific complaints from the individuals and a dog squad shall capture, sterilise and release at the same place from where it had been captured. Practical implementation of this procedure certainly raises several doubts regarding the efficiency of this method. Given a situation, when a person suspects a rabid dog, he would be required to call the concerned authority. The authority will need some time to react and then arrive at the incident location; during this time, the complainant is expected to keep a track on the movement of the dog, which could potentially result in the dog being frightened by the complainant and launching an attack. If the authority arrives after 4-6 hours or the next day or after 3-4 days, as often happens, it is nigh impossible to keep track of the dog. It will be highly optimistic on our part to believe that such a process is successful in real life, and that the authority will capture this dog. There is a higher chance that the suspected dog will get away and disappear or maul other dogs.

3.3. Summary of the ABC Laws and Rules

Upon review we understand that India, with the third highest dog population in the world, has some confusing legislation to deal with its dog problem [54]. As stated in

ABC Rules, the stray dog population should be controlled using sterilisation surgeries and these dogs are to be released from where they are caught. However, this strategy has failed for reasons of poor implementation, lack of resources, and lack of reality. Neither the government nor local authorities have taken sufficient steps for implementation of ABC Rules, often instructed by the courts [55]. Local authorities and State Governments have not given due importance to the stray dog menace that is increasing day by day. Although, these issues were identified by State Courts of Kerala, Mumbai, and Srinagar, and the courts there passed orders to make the locality free of stray dogs, these orders were challenged before the Supreme Court, which put a stay on these orders. Thus, the rules and regulations in India continue to be ambiguous for dealing with the stray dog problem. Political interference on both sides of the fence, but usually on the side of animals' rights is commonly known. Additionally, competing objectives and political aims are known to usually stall and impede progress. It is not out of context to mention the following extract from an article published in one of the prominent newspapers of India highlighting this issue. [56]

ABC Rules contravene the PCA Act in several places. Take Section 2(f) of the PCA Act, for instance, where an owner of an animal “...includes not only the owner but also any other person for the time being in possession or custody of the animal, whether with or without the consent of the owner.” This means that once municipal authorities and animal welfare organisations pick up free roaming dogs from the streets (and these dogs are unclaimed by anyone), they lawfully become the owners of those animals.

Further, Chapter 3, subsection 11 of the PCA Act clearly lists the responsibilities of owners and makes it an offence to “abandon any animal in circumstances which render it likely that it will suffer pain by reason of starvation or thirst”, or “wilfully” permit any animal that is “affected with contagious or infectious disease or, without reasonable excuse, permits any diseased or disabled animals... to die in any street.”

By the logic of this subsection, the biggest offenders under the PCA Act are the state and animal welfare organisations themselves as they capture and then release dogs back on the streets. While the ABC Rules are silent on who is ultimately responsible for these animals, the PCA Act is clear.

To summarize, we can say that traditional methods of eliminating harmful dogs are considered barbaric by the animal welfare activists and government. However, at the same time the capture-neuter-release strategy also has proved to be ineffective due to a really large population of stray dogs on the streets, and the costs accompanying such operations in a relatively poor country such as India. To tackle this issue, what is needed is a concerted effort no less committed than it took for India to eliminate polio.

We can also clearly speak that common law has evolved that is self-contradictory, especially with the Supreme Court

judging in favour of doubt and animal activists, thereby making impossible a lasting solution to this terrible nuisance in India. Essentially, it simply means that the laws are simply not tight enough.

4. Review of Stray Dogs on the IIT Campus

4.1. Introduction

Indian Institute of Technology (IIT) Delhi is a vibrant campus where the brightest minds from across the country come with a mission and a vision to make an impact on society and aim to develop a productive life for themselves. By all counts, this is where the brightest brains of India come to learn engineering. At any point of time, there are around 15,000 people on the campus that comprises of students, faculty, supporting staff, families, children, and visitors who collaborate for various academic and research purposes. This is equivalent to a small city. Along with these enlightened minds on campus, there is one more intelligent creature that can be easily spotted in campus – the ubiquitous dog. The number of dogs on campus is visibly high and one can easily spot 3-5 dogs in his/her vicinity at anytime from anywhere, in some direction or the other. There have been instances related to dogs on campus that has disturbed the normal functioning of the Institute and posed threats to the living standards of students, staff, and faculty. The dogs have harassed and bitten all groups – students, staff, faculty, workers, and visitors on campus. The author feels the situation does not make for a conducive work atmosphere. But, the safety of people on campus and providing them with an appropriate environment is one of the primary objectives of any campus administration. [57] Now we'll zoom in on the specific nuisance on the IIT campus in New Delhi.

4.2. The Dog Nuisance on Campus

The presence of dogs on campus is a serious issue and causes several problems. To understand the seriousness of the problem, a campus survey was conducted by circulating a questionnaire (Appendix 1). These problems are broadly summarised below:

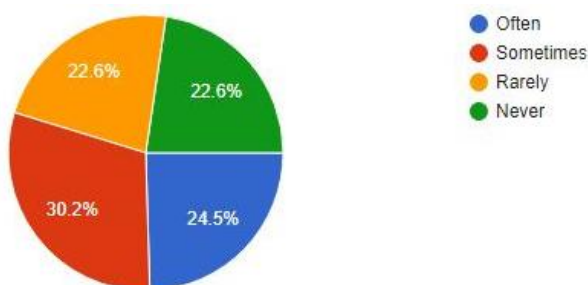
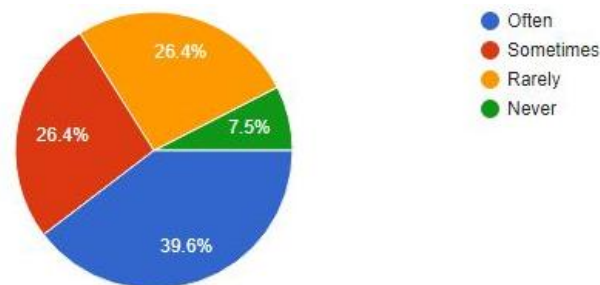
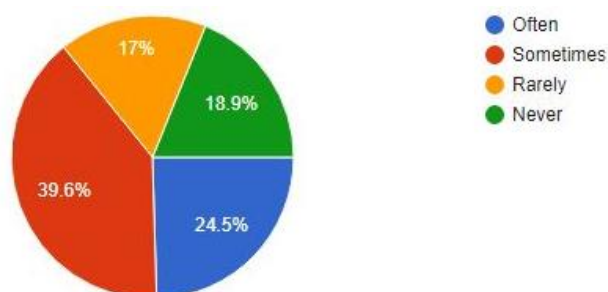
- According to sources in the IIT Hospital, there were as many as 52 animal bite cases in the period July to November 2017. But no one on campus wishes to live in such conditions of potential danger. Also, staff at the hospital believe that the number of dog-bites is actually higher as there are many unreported incidences and sometimes patients, especially non-IIT Delhi members, go to other nearby medical facilities. Meticulous study of hospital records conveyed that in the period 2013-2017 (both inclusive), about 38 rabies vaccines were given on average to patients each month, which is much too high a number for any educational campus. Table 4.1 gives details on the number of vaccines

provided in each month from 2013 to March 2024. As per a nurse practitioner at the IIT Hospital, it is standard to provide five vaccines per dog bite irrespective of intensity of biting or licking. In rare circumstance, when a person has been bitten twice in the same year, the second bite might result in marginally more than five vaccines. However, as second bite cases within a year are far and few between, it is safe to assume that the number of dog bites were 171 in 2023. The dog-bite numbers clearly suggest that dog-bite cases have been getting worse at IIT Delhi by increasing 7.4% yoy for the ten years between 2013 and 2023. [58]

- There were only one to two category III [59] dog bites at the IIT campus per month, which can be life threatening. But the patient had to be shifted to rabies speciality hospital for specialized treatments like immunoglobulin, as government clinics typically don't carry specialized treatment facilities. As per information provided by hospital staff, the cost of treatment for category III dog bites in New Delhi was nearly ₹ 50,000 per patient, which is equivalent to US\$ 630. Category II and lower bite cases were provided treatment for free in IIT Hospital itself. Records found at IIT Hospital clearly suggest that the issue is pressing, but no lasting solution has been implemented by the administrators to be rid of the dog menace. [60] A sample alert notice issued by the authorities regarding the presence of a rabid dog is given in Appendix 2.
- Apart from the threat of rabies, dogs also create hindrances to daily outdoor activities that the people on campus must bear and suffer. Most of the residents, especially students, have to walk to class and playing fields on campus as motorized vehicles are not permitted for the students. So, the presence of stray dogs in large numbers often terrify people and students and restrict their free movement. As per the survey conducted, 77.4% respondents acknowledged that they have seen someone being chased or attacked by a dog while on campus (Figure 4.1). Dogs also tend to chase bicyclists and other moving vehicles. Sometimes they come in the way of vehicles and cause traffic safety issues. As many as 65.5% respondents reported that they have been interrupted by stray dogs while bicycling or driving on campus (Figure 4.2).
- Apart from these, there have been numerous complaints about dogs snatching food items from the hands of residents and attacking them for food. This makes it impossible for students to carry any food item with them while walking around campus. The authors saw dogs come to the table of outdoor restaurants and to class while following students. These acts often terrify people and they compromise one's personal health and safety. Two-thirds of respondents felt intimidated by the presence of stray dogs. These results give a clear picture of the problems faced by the residents owing to unrestricted roaming by stray dogs.

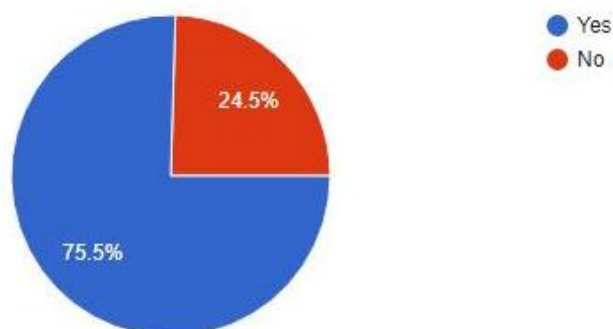
Table 4.1. Number of Dog Bite Vaccines provided at the IIT Delhi Hospital

Month	YEAR											
	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
January	36	51	48	34	36	36	43	32	29	64	61	110
February	28	49	51	57	38	28	27	67	43	63	50	102
March	40	46	35	38	69	58	51	37	28	90	79	95
April	54	52	23	37	58	40	40	18	40	121	95	-
May	70	30	21	29	33	46	23	27	34	57	75	-
June	30	71	35	29	44	49	47	21	37	48	61	-
July	23	51	37	32	21	21	29	29	25	41	32	-
August	30	35	35	24	35	48	33	25	33	70	66	-
September	38	22	35	44	19	40	41	7	57	71	96	-
October	35	19	36	23	26	31	46	14	54	92	88	-
November	11	43	21	26	103	53	35	21	55	66	91	-
December	24	41	21	49	61	59	20	34	85	58	63	-
Total	419	510	398	422	543	509	435	332	520	841	857	307

**Figure 4.1.** Response to “Have you seen anyone being chased or attacked by stray dogs?”**Figure 4.3.** Response to “Have you been disturbed by barking of dogs?”**Figure 4.2.** Response to “Have you faced any interruption when bicycling or driving on campus?”

- Barking of dogs is another serious problem and annoys people to extreme levels. Dogs bark loudly and continuously for extended periods, which disturbs and annoys people on campus, especially during the nights when faculty and students try to sleep or study. Almost 93% people complained that they been disturbed by the barking of dogs while on campus (Figure 4.3). Stray dogs sometimes even enter the classroom and academic blocks. As many as 75% respondents stated that they have encountered dogs entering their classroom. (Figure 4.4). Responses strongly indicate that the barking of dogs and their movement in academic areas has affected life quite strangely within the campus, in an unwelcome way.

- These stray dogs can be often seen freely moving in and around food outlets and thus become a cause for compromise on hygiene. Of course, dogs will be dogs, and will pursue food wherever and whenever they can. Often these stray dogs start eating from the unattended plates, and unknowingly these plates are hand-washed by the attendant labourer, and food is re-served on them. So, this becomes a direct health issue. Such dog nuisances cannot be tolerated by most of the people at IIT Delhi. Around 57 % residents strongly feel that the stray dogs cause serious trouble around various night canteens. 74% respondents believe that stray dogs create hygiene issues around food outlets.

**Figure 4.4.** Response to “Have you seen dogs entering the classroom?”

Many times, some animal lovers say that dogs also have the right to live freely and thus they should be allowed to freely roam at any place. But this cannot be made an excuse for tolerating dog nuisance on a campus which is supposed to ensure the highest standard of health and hygiene. There can be designated places for the animals and they should be restricted to those areas and should not cause any threat to human beings. In recent times it has been found that the number of dogs on the campus is rising and a large number of puppies can be seen at various locations on campus. This indicates some urgent steps need to be taken to protect the residents of the campus. As an example, the actions taken on campus using 2016-17 data is now presented. Appendices 2 to 4 represent these actions. However, despite those and other actions taken continuously there has been no reduction of the nuisance on campus by 2024.

4.3. Actions taken on Campus

In order to understand steps taken by concerned authorities on campus to tackle dog nuisance we contacted them during our study. A gist of the discussion including past steps taken by them, future plans, and recommendations are summarised below.

4.3.1. Measures and Recommendations from Sanitation Department

Due to continuous complaints and increased concerns from the residents of campus, the sanitation department conducted a campus level survey during the month of December in the year 2012. The main motive of this survey was to understand the status of stray dogs and their condition, which would in turn help management quantify the seriousness of this issue. Moreover, the survey proved to be an important input to recommending necessary steps and control measures. The outcomes of that survey were accessed from the sanitation department. The details regarding quantification of stray dog conditions in the campus, as stated by report of that survey are as follows:

- Total number of dogs in the campus as on 28th Dec 2012: 142 (Excluding puppies)
- Percentage of sterilized and vaccinated dogs was 75%

The sanitation department then came up with some recommendations and submitted those to the concerned authorities on the campus. The suggestions and recommendations were based on the outcomes of the survey conducted and other general observations. Outcomes of the survey, recommendations made by the sanitation department, and subsequent actions taken are summarized below.

The report in its first point itself categorically states their inability to just relocate stray dogs to some other far off location, as it is legally prohibited. Simultaneously, it also states that the dogs could be relocated given that a person takes responsibility for their rehabilitation. Furthermore, the presence of stray dogs within the campus was quantified at zonal level; i.e., by dividing the campus into various zones. The idea behind doing so was not only to clearly understand

localized issues within various zones, but also to frame necessary actions in a decentralized manner. It was observed that most of the stray dogs were concentrated in the new campus area. Initially it was proposed that these dogs be chased away to other relatively secluded zones within the campus, as the residents of new campus were troubled by the disturbance due to barking of dogs.

But in due course of time, it was observed that this approach gave rise to a set of new concerns. It was noted that most of the dogs present in that zone initially were sterilized and vaccinated. The sanitation department claimed that vaccination of these dogs made them look healthier. These healthy dogs were observed to be ferocious by nature and were highly intolerant to trespassing into their area by other foreign dogs. Once steps were taken to chase away ferocious dogs, that zone started to face a sudden increase in the ingress of foreign dogs. Most of these foreign dogs were unsterilized and unvaccinated. The sanitation department had to stop their approach of chasing ferocious dogs away, as that led to an increase of foreign dog settlement in the area. It was observed that settlement of unsterilized foreign dogs in the area was even more dangerous.

Instructions were given to the security guards of the gates near the zones with high stray dog density to be vigilant regarding entry of outside dogs. Simultaneously, a sterilization and vaccination drive was launched, with the help of an NGO, Neighbourhood Woof (Appendix 3). In this way they aimed at curtailing any further growth in the number of dogs. Sterilized and vaccinated dogs were each given an identity number, which was tagged to each one of them by means of a nylon collar. This was done to make it easy to identify sterilized dogs and also to create confidence among the concerned residents. This was again not successful, as the dogs happened to lose their collars within a few days. Alternatively, the right ear end was cut, which is allowed, before leaving a vaccinated and sterilized dog into the campus.

It was further proposed that chain link fencing be erected around the academic area. The sanitation department was of the view that curtailing the access of stray dogs to the core academic area was very important. But this proposal was not implemented as the final decision-making authority deferred their view regarding this. They claimed that this would not only be ineffective but also could lead to a major impact on the aesthetic value of this area. Furthermore, a proposal was made regarding establishment of centralized feeding points. They recommended that such feeding points should be placed at relatively secluded locations, to promote confinement of stray dogs to such areas. This proposal was immediately accepted and about sixteen centralized feeding points were notified homogeneously throughout the campus in 2016 (Appendix 4). But when the feeding location instructions were violated, a follow up memo was sent in 2017, this time by the security officer, expressly saying that -

“It is also seen and reported by our security guards that students are offering food to the dogs in academic areas. This practice is required to be stopped immediately.

All residents and students are once again requested to feed the dogs only at the designated places mentioned below.” [61]

It was also suggested that a sanctuary for stray dogs be developed within the campus premises. The idea here was to confine the dogs within an enclosure of suitable area. This would not only reduce various disturbances created by stray dogs throughout the campus but also help in creating a single point of access for dog lovers, where they could spend time with dogs. This would also help with veterinarian services for dog health. Moreover, a point of ingress of outside dogs was identified. It was an outlet point of a *nallah* (drain), which was left open. This point was reported to the concerned authority for immediate blockage. A proposal was also made to the management for creation of an online portal with details of all the puppies present in the campus. This was aimed to encourage and simplify the process of adoption. But none of these were reported as implemented.

4.3.2. Inputs from ‘The Working Group to Tackle Dog Menace on Campus’

Due to a sudden rise in stray dog attacks on campus, during the start of 2015, a few like-minded residents including students and professors came together to work on this issue of dog menace. A group named ‘The Working Group to Tackle Dog Menace on Campus’ started working in this regard. The following is a summary on discussions the researchers had with them. The information and data quoted below were not backed by any official record but were stated in the interview.

This group started their work during July 2015. The group initially worked on building a base for future steps to be effectively implemented. The group’s idea here was to build the framework which would be necessary once the sterilization drive begins. They also coordinated with the NGO involved in the sterilization drive on campus. The framework steps taken during these initial stages were preparing a dog shelter within the campus where post-surgery care could be provided to the sterilized dogs. Furthermore, steps were taken regarding coordination with National Service Scheme (NSS) team on campus to acquire the required food for dogs during post-surgery care period.

Once these pre-requisites were in place, they invited ‘Neighbourhood Woof’, an NGO which works on vaccination and sterilization of stray dogs. The NGO also worked on educating the residents regarding various aspects of stray dogs. They also held a special awareness campaign for the guards on campus. The NGO accepted to work on establishing a figure for the number of stray dogs on campus. The NGO started a sterilization drive on campus during September 2015, during which they would sterilize about 25 dogs. In the successive month about 10 dogs were sterilized. This NGO, being a small group of people, couldn’t work at a pace that was required to work on a large, 325 acre campus like IITD. This led to ineffectiveness and failure of meeting the targets set.

During the summer of 2016, it was observed by the working group that there were about 150 unsterilized dogs on campus. They invited ‘Animal India Trust’ (AIT) to carry out a sterilization drive on campus. During the first phase of the sterilization drive, AIT was successful in neutering about 40 to 50 dogs. Their aim was to complete the sterilization drive completely by October 2016. On side-lines, the group also took steps regarding creation of awareness about the feeding points. The feeding points, though notified years ago, were not well-implemented. Hence, a request was made to the concerned authorities to physically mark these feeding points using sign boards, for which the authorities responded positively.

During our interaction with the group, they were satisfied with the response and support from the administration of the campus. They were both monetarily and technically supportive at all levels, throughout the process of working. As of now, the group coordinated with AIT and administration, whenever necessary. The sterilization and vaccination process of stray dogs on campus is on complaint basis now. Whenever a complaint is filed with the administration regarding identification of unsterilized dogs on campus, the AIT team is called upon and they get the dog sterilized as soon as possible.

4.4. General Observations

Residents and visitors on campus walk most of the time and spend a lot of their time in cafeterias and shops along these roads in campus. Stray dogs form packs and chase residents, bikes, cars and often enter food joints. They fight territorial battles, generally in the night, making it difficult for students to sleep and often disturb academic activities on campus due to their high-decibel fights. Stray dogs defecate all over the place, especially on footpaths and lawns, making it worse for the majority of residents on campus, lest they step on dog poop. Authorities on campus recognise these issues and have taken a few steps in the past. Moreover, they suggested a few recommendations to tackle the problem. However, those steps have proven to be inadequate and ineffective, and often without teeth, so to say, as dogs and their menace on campus has only increased. To tackle the situation in an effective manner it is required that strict policies are developed and promptly implemented. Section 5 will discuss a few recommendations in this regard.

5. Recommendations

After reviewing current rules, laws, and regulations, existing policies, and magnitude of the prevailing problems, and concluding that the problem in India, and the IIT Delhi Campus, in particular, is convoluted, the following recommendations are suggested for IIT Delhi within the laws, rules, policies, and regulations. Thus, there is no legal violation if these recommendations are implemented. Though there is perceived resistance to every small thing by various groups and animal rights activists, because of the inherent democratic spirit in India, the solutions offered here are

viable, do not cull dogs, feed them and vaccinate them, controls the access of dogs to campus, manages the animal waste produced by the dogs, and removes the fundamental nuisance the dogs cause. Moreover, the incidence of dog bites could reach zero, which is the only worthwhile target to have. Among the recommendations, animal lovers can also adopt dogs within shelters and feed them.

The solutions presented here would make the situation safer for dogs, see they are well fed, vaccinated, and taken care of. Hence, the opposition from animal rights groups should be none to minimal.

1. Establishment of a central dog shelter

Given the legal restrictions to relocate stray dogs of the campus to a far-off location, the best way to overcome various related problems being caused by stray dogs would be to regulate their access and activities. A dog shelter, as earlier recommended by the sanitation department, could be developed. This is within the rules and laws and seems like a humane solution that addresses the rights of dogs as well as the menace on campus. Thus, appropriate nutrition and feeding can be carried on here. The sanctuary can be located within the campus at a relatively secluded location, given that the campus is 325 acres in size and there are many areas available. The management could support the functioning and effectiveness of this dog shelter by providing for a helper, dog trainer, or other personnel required. Such an establishment would further encourage the interested residents to render their help to stray dogs. Suggestions from NGO's working in the domain of betterment of stray dog conditions would further help in designing a dog shelter that would meet its purpose in a better manner. Regular visits by a veterinary doctor could be enabled that would help to maintain the health of the stray dogs living there. This solution would act towards betterment of conditions of both residents and dogs. It would control unorganized dog movement and in turn eliminate all associated problems, like traffic hindrance, barking, deterioration of hygiene, dog bites, etc. It would also result in betterment of stray dog living conditions, as they are under constant supervision and care. A dog trainer would further bring in holistic development of these stray dogs. Finally, dog lovers could adopt some dogs and feed them at the dog shelter. A good architectural design will be needed to manage dogs that fulfils the functions desired. But it is perceived that the freedom from fear and a relaxed campus are worth the \$1-2 million required to construct such a shelter.

2. Awareness drive regarding the centralized feeding points

Centralized feeding points were identified all over the campus with an aim to curtail their activities to relatively secluded locations within the campus. Initial efforts were made by the authorities to publicize these locations among the residents, but it was not continuously done. Continuity of this publicity process is very important given that each year about 2,000 new residents are inducted into the campus. Discontinuity of the awareness campaign resulted in functional

failure of these feeding points. Though the authorities show they have good intentions, their implementation has much to be improved. The survey conducted showed that 54.7% of the respondents did not know any of these feeding points. An even more serious issue as observed from the survey was that 64.3% of the respondents who liked feeding stray dogs on campus did not have any knowledge about these feeding points. This signifies the level of importance necessary to publicise these locations among residents.

3. Installing door closers at various entry points (Main Blocks Area)

Stray dogs on the campus seamlessly move all around the campus to such an extent that sometimes they even enter the classrooms. A survey conducted by this study showed that 75.5% of respondents have seen dogs entering their classrooms. Classrooms are the core areas of a campus, where the attention of students on lecture proceedings is of utmost importance. Disturbance in such areas by acts like stray dog entry is unacceptable. So, it is recommended that the academic area, at least the main blocks be sealed from stray dog entry. An easy way to achieve this would be to install door closers at all entry points. A door closer is a mechanical device which closes the door automatically whenever someone opens it. Furthermore, a door installed with door closers would require relatively higher force to open, which a dog would not be capable of. This would be a cheap and effective way to curtail stray dog entry into the main academic blocks, and would not pose any significant management, funding, or implementation challenge.

4. Control access of stray dogs in and around night canteens and eateries

Another major problem being faced by the residents of campus, students in particular, is the interference of stray dogs in and around various night canteens and eateries. A survey conducted showed that 51.9 % of respondents faced this problem near night canteens, which are popular among students. This problem should be tackled by addressing two aspects. First, controlling stray dog access to such areas is very important. This could be achieved by working with the owners of various night canteens and encouraging them to take various actions, such as fencing, controlled entry, and security. The fencing and controlled entry is fairly inexpensive [62], already existing to a partial extent, while the security staff already exist. Their duties have simply to be expanded even though they sometimes shoo away the dogs on their own. The campus management could provide for necessary support to facilitate implementation of plans worked out. Second, care should be taken that the stray dogs are well fed. This could be achieved by establishing a centralized platform like dog shelter, which would act as a single point of access for all dog lovers and animal rights groups on campus.

5. Waste management and proper garbage disposal

Proper disposal of garbage is the most important action necessary to control stray dog populations. Most of the stray dogs live on leftovers from garbage. Actions directly aimed

to reduce stray dog population, like relocating them to dog shelters, would be unsuccessful till proper garbage disposal is given priority. This should be considered a core item of interest. Apparently, the dog problem has bludgeoned because citizens don't live a clean life with proper waste disposal. If no action is taken towards proper garbage disposal, ingress of dogs from other nearby areas would take place. Moreover, there is a fair possibility that new problems like growth of the rat population takes place. So, it is understood that any action towards the control of stray dog nuisance would be useless unless proper garbage disposal is given priority. Though garbage bins at many points within the campus are designed to avoid stray dog access, there are many locations that are to be taken care of. The idea here would be to design garbage bins in such a way that stray dogs cannot access them. Also, garbage bins should never be allowed to overflow and hence frequent pickup should be arranged. For smaller garbage collection points, mounted bins that are covered can be used; and for bigger garbage collection points, well-locked cage systems have to be constructed all around.

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Appendix 1. Survey Questionnaire

CAMPUS SPECIFIC SURVEY

- Did you ever see someone being chased/ attacked by a dog in the campus?
 - Never
 - Rarely
 - Many times
- How often have you been disturbed by barking of dogs?
 - Never
 - Rarely
 - Many times
 - Please mention specific area within the campus, where you experienced such disturbance (If any)
- Dogs seem to stay around various night canteens causing disturbance to students. On a scale of 1 to 10, how do you score this problem?
1.....10
- Have you ever seen dog entering into your classrooms?
 - Yes
 - No

- Did you ever face interruption by a dog while bicycling or driving in campus?
 - Yes, Very Often
 - Yes but Rarely
 - Never
- Do you think dogs create hygiene problem in our campus?
 - Yes
 - No
- Do you like feeding stray dogs in campus?
 - Yes
 - No
 - No Comments
- Do you know any of the designated feeding points within our campus?
 - Yes
 - No
- Have you seen dogs being fed at places other than designated feeding points identified by administration?
 - Yes
 - No
- Do you feel scared/ uncomfortable due to presence of stray dogs?
 - Yes
 - No
- Any particular instance you would like to share?

ATTITUDE TOWARDS CONTROL OF STRAY DOGS:

- Are stray dogs a problem?
 - Yes
 - No
- Stray dogs are a problem because:
 - They bark and create nuisance
 - Attack and bite people
 - Not a problem
- Can vaccination prevent rabies in dogs?
 - Yes
 - No
 - Don't know
- What will you suggest about the dog which develops symptoms of rabies?
 - Kill the animal
 - Capture and send it to laboratory
 - Chase away the animal
 - Others _____
- Which is the best method to control the stray dog population?
 - Immunization of dogs
 - Animal birth control
 - Killing them
 - Others _____
 - Don't know

6. Who do you think is responsible for control of the stray dog population?
 - Government only
 - People in the community/NGOs only
 - Government + People in the community/NGO
 - Don't know

Appendix 2. Sample Alert Notice Regarding Rabid Dog

Date: Thursday 23rd November 2017, 12:14

Subject: Alert Notice regarding stray rabid dog noticed in the campus

Dear Sir/Madam,

As per the communication received from IIT Hospital, a stray rabid dog has been noticed in the Campus near Adchini Gate yesterday. It is rabies infected and if it bites any person it will be dangerous.

Necessary action is being taken by the Security and Sanitary units to track down the rabid dog.

The rabid dog was looking big, reddish brown colour and behaving abnormally.

All are requested to kindly be alert and if any dog is noticed with the above behaviour they should immediately inform the IIT Security Unit Control Room (1000)/Mobile: 8510958400 and the Sanitary Inspector (Mr. Adinarayan Rao, 7197 / Mobile: 9818425688) so that it can be caught.

Cooperation of all is solicited.

For any further details/assistance, please contact the Security Control Room and the Head, Hospital Services.

Thanking you,
Yours sincerely,
XXXXXXX
Assistant Registrar
Health Unit

Appendix 3. Sample Circular: Campus Dog Sterilization Drive

Date: 4th October 2016

Subject: Dogs on Campus - Sterilization Drive

Hello,

The sterilization drive is in full swing on campus. In the first phase with Neighbourhood woof we managed about 43 sterilizations. In the second phase which started on the 28th September, 2016 already 26 dogs have been neutered. This time Animal India Trust is helping us out. We hope to complete the entire sterilization in the month of October with AIT.

A few things to note:

1. Please, under no circumstance, interfere with the working of AIT team. They are professionally trained to do their job. Let them do it. We need to coexist with the animals and this step is a must for that. One of our community members went to their office to claim a pup. They will put the pups back in the original locations. If there is any problem, please email us.
2. Feeding locations have been notified in an earlier email. Also, these are marked. Please feed the dogs here. And feed them well so they are satisfied and do not bother chewing on other mortals. Also if you see other people feeding outside, request them to move towards these feeding locations.
3. The neutered dogs have their right ear vertically clipped. If you notice some dogs have not been sterilized, please do send us an email at the end of the month.

And, thanks to everybody for their whole hearted support.

Best regards,
XXXXXX

Appendix 4. Sample Circular: Designated Feeding Locations for Dogs on Campus

Date: 12th September 2016

Subject: Designated Feeding Locations for Dogs on Campus

--Working Group to Tackle Dog Menace on Campus Designating Feeding Locations on Campus

The Working Group to Tackle the Dog Menace on Campus has marked the following feeding spots for dogs on campus that are away from populated areas, shopping areas and eating areas, with the help of the NGO, Neighbourhoodwoof.

East Campus

1. Mother dairy Gate (behind Mother Dairy)
2. On southern boundary road just after staff quarters end and before The entrance to LHC
3. On southern boundary road to the right of the Dhobi opposite

West Campus

1. Behind IP apartments 1 and 2 (near boundary wall)
2. Before JNU gate to the left side in the maidan
3. Patch between CPWD office and nala (between Vishvakarma Bhavan and Vikramshila)
4. Behind Vishvakarma bhavan (to the right and behind the exit of steps coming down from New Campus)
5. Behind New Campus houses near the nala facing Katwaria Sarai
6. In the tree / shrub area between SAC entrance and SAC circle

Boys' Hostel Area

1. Between Aravali and Karakoram hostel near boundary wall
2. Behind Jwalamukhi hostel near boundary wall (behind railway counter)
3. To the right of hostel gate (behind Kumaon hostel)
4. Opposite the old lipton shop (behind badminton courts)

Academic Area

1. To the right of Synergy building (in the corner of green patch near parking)
2. Behind visitor parking lot in corner near Kailash circle
3. At grass triangle opposite Bharti Building and facing Library

The Security Unit will be responsible for ensuring that feeders do not feed dogs in any place other than these designated spots. Kindly inform the security unit (1000) or the dog-issue helpline (9811028373) for any problems in this regard.

--The Working Group to Tackle Dog Menace on Campus

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