

Overview of Dogs Breeds in India

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ABSTRACT

Dogs have been a part of Indian culture for centuries, serving roles as guardians, companions and working animals. With changing lifestyles and increasing urbanization, the demand for pet dogs in India has seen a significant rise. India is home to several indigenous dog breeds like Rajapalayam, Mudhol Hound, Kombai, Chippiparai and Himalayan Sheepdog, which are well-adapted to local climates and require minimal maintenance. However, these native breeds face the risk of neglect and extinction due to limited public awareness and preference for foreign breeds. Imported breeds such as Labrador Retrievers, German Shepherds, Pugs and Beagles etc., are increasingly popular despite their challenges in adapting to India's diverse climatic conditions. The choice of a suitable breed must consider factors like climate adaptability, living space, lifestyle compatibility and intended purpose. Dog care in the Indian context includes proper nutrition, vaccination, grooming and access to veterinary services, which remain uneven across urban and rural settings. National-level programs, including sterilization drives, anti-rabies campaigns and breed registration & conservation efforts, are in place through organizations such as the Indian Council of Agricultural Research (ICAR) and various state departments. Despite these efforts, the canine sector in India faces several challenges, such as unregulated breeding practices, insufficient conservation of native breeds, rising stray populations and lack of public education on responsible pet ownership. Addressing these concerns requires coordinated policy efforts, greater awareness and a focus on sustainable and inclusive dog welfare strategies. This article provides a comprehensive overview of the canine scenario in India, covering both indigenous and foreign breeds, care practices, institutional programs and future directions.

INTRODUCTION

India is a land of diverse cultures, climates and terrains, and this diversity is beautifully reflected in its native dog breeds. From the snow-clad mountains of the Himalayas to the sun-baked plains of the Deccan, Indian dog breeds have evolved over centuries, adapting to different environments and playing vital roles in the lives of the people. Traditionally prized for their hunting skills, guarding abilities, herding instincts and even spiritual significance, these breeds are not only an integral part of India's heritage but are also symbols of resilience and loyalty. In recent years, however, the spotlight has largely shifted to foreign dog breeds, often overshadowing India's native canine treasures. Imported breeds like Labradors, German Shepherds, Beagles, and Shih Tzus etc., have become popular choices for urban pet parents. While these dogs make excellent companions, many of them are not ideally suited to India's hot and humid climate, often requiring special care and maintenance. In contrast, Indian native breeds are naturally well-adapted to local conditions. They possess strong immunity, require minimal grooming, and thrive on simple diets. More importantly, they have been historically bred for specific purposes whether it's guarding livestock, hunting in rugged terrains, or simply being loyal companions to families.

In 2019, the Indian Council of Agricultural Research – National Bureau of Animal Genetic Resources (ICAR-NBAGR) achieved a landmark by officially recognizing and gazette-notifying the Rajapalayam, Chippiparai, and Mudhol Hound as India's first registered indigenous dog breeds. Building on this effort, ICAR-NBAGR has continued its mission to identify, document, and register more native canine populations across the country. Notably, in 2025, two additional indigenous breeds, the Gaddi (Himalayan Sheepdog) and Changkhi were

formally registered, further expanding the list of recognized Indian dog breeds (NBAGR, 2025). These native dogs are prized for their distinct genetic traits, unique physical characteristics, and rich cultural heritage, making their conservation vital for future generations. Raising public awareness, protecting these breeds through proper conservation strategies, and encouraging responsible breeding practices are crucial to safeguarding India's diverse canine legacy and ensuring these indigenous dogs receive the recognition they truly deserve (Baskaran, 2017). There are 9.43 million dogs in India, and the Kennel Club of India recognizes eight native breeds. States like Uttar Pradesh, Maharashtra, Madhya Pradesh, West Bengal, Rajasthan, Tamil Nadu, and Karnataka are home to the greatest numbers of dogs. However, native Indian dog breeds are still underrepresented and overshadowed by foreign dog breeds. This lack of attention has contributed to a troubling 19% decline in their population, raising serious concerns about the conservation and long-term survival of these indigenous breeds.

The rich diversity of Indian dog breeds reflects the country's cultural and ecological heritage. Despite their historical significance and unique adaptations, native breeds remain underappreciated and face declining populations. Increased awareness, scientific documentation, and conservation efforts are crucial to preserve these valuable genetic resources. Understanding their roles, characteristics, and current status is essential for their revival. This article provides an overview of dog breeds in India, highlighting their diversity, challenges, and conservation needs.

Indigenous dog breeds in India

The ICAR-National Bureau of Animal Genetic Resources (NBAGR) in Karnal, Haryana, has

officially registered several native Indian dog breeds to preserve and promote the country's rich canine heritage. Among the registered breeds are the Rajapalayam and Chippiparai from Tamil Nadu, the Mudhol Hound from Karnataka, and the Gaddi dog from Himachal Pradesh. These breeds are known for their unique characteristics and have been integral to the regions they originate from. In addition to these, the Changkhi dog from Ladakh has also been recognized for its strength, alertness, and protective nature. This breed plays a crucial role in safeguarding livestock in the challenging terrains of Ladakh. The registration of these indigenous breeds by NBAGR underscores the importance of conserving native dog populations, ensuring their survival, and maintaining the biodiversity of India's animal genetic resources. The detailed description for native dog breeds is as following:

Rajapalayam: The Rajapalayam dog is a distinctive indigenous breed that originated from the Rajapalayam taluk in the Virudhunagar district of southern Tamil Nadu, India. It is a medium-sized breed with a compact and muscular body, characterized by a tucked-up abdomen, straight top line, and a semi-curved tail. The breed exhibits a uniform white coat colour, complemented by pink skin, nostrils, and eyelids. The ears are pendulous, and the nasal bridge is straight. Rajapalayam dogs possess golden-coloured eyes, contributing to their striking appearance. Morphometric investigation revealed that the average body weight was 24.69 ± 0.43 kg in males and 21.42 ± 0.47 kg in females. The breed shows sexual dimorphism in size and weight.

In females, the age at first estrus ranged from 12 to 15 months, with the estrus period lasting 13 to 21 days. The primary breeding season was observed between November and January, and the average gestation period was approximately 2 months. Age at first whelping

varied from 21 to 27 months, with a whelping interval of 8 to 12 months. A single female could produce up to 10 to 12 litters in her lifetime, with litter sizes ranging between 4 and 10 puppies. Puppies were weaned at around 30 to 45 days of age. Used mainly as guard dogs, Rajapalayam are a unique indigenous breed requiring national-level promotion (NBAGR, 2014–15; Raja *et al.*, 2014, 2017).

Mudhol Hound: The Mudhol Hound, also known as the Caravan Hound, is an ancient and aristocratic sighthound breed native to the Deccan Plateau, particularly in and around the Bagalkot district of Karnataka, India. This breed has been historically valued by local rulers and nomadic tribes for its exceptional hunting ability, speed, stamina, and sharp sight, making it ideal for coursing game in open terrains. Characterized by a long, narrow head, deep chest, tucked-up abdomen, and long limbs, the Mudhol Hound displays a graceful yet powerful physique. Its short, dense coat, which comes in various colours including fawn, brindle, black, and white, is well-suited to the region's arid climate. Highly intelligent, loyal, and reserved with strangers, the breed requires early socialization and consistent handling. In recent years, the Mudhol Hound has gained national recognition for its potential in security and military applications, with the Indian Army even initiating trials to assess its suitability for patrol and surveillance work. Efforts by breeders, research institutions, and government bodies are underway to conserve and promote this unique indigenous breed as part of India's rich canine heritage.

Chippiparai: The Chippiparai dog is a distinctive, medium-sized sighthound breed indigenous to southern India, primarily associated with the Tirunelveli district of Tamil Nadu. This breed is characterized by its fawn-coloured coat, black nostrils, dark eyes, broad chest, and a prominently tucked-up

abdomen—traits that collectively contribute to its elegant and athletic appearance. The present study aimed to evaluate the distribution and morphometric characteristics of the Chippiparai breed. The mean values (\pm SE) for various morphometric traits in adult dogs were as follows: body length (60.90 ± 1.34 cm), head length (21.00 ± 0.39 cm), muzzle length (9.56 ± 0.17 cm), tail length (40.28 ± 0.77 cm), height at withers (59.56 ± 1.30 cm), height at rump (59.84 ± 1.38 cm), chest girth (60.36 ± 1.36 cm), belly girth (39.30 ± 0.75 cm), ear length (10.92 ± 0.23 cm), and ear width (8.10 ± 0.18 cm). Statistical analysis revealed that sex had a significant effect ($P < 0.05$) on body length and a highly significant effect ($P < 0.01$) on height at withers and chest girth. Overall, the Chippiparai is a well-defined, medium-sized indigenous sighthound breed, possessing distinct morphological features that are well-adapted to the climatic and geographic conditions of southern Tamil Nadu (NBAGR, 2014-15; Karthickeyan *et al.*, 2015; Raja *et al.*, 2015).

Gaddi: The Gaddi dogs are mostly black, with the occasional white marking on the trunk, tail, or feet. Their large, arched neck, which shields them from predators, is one of their primary characteristics. These canines are medium in height, have a muscular body that is robust, and have a harmonious build. The bitches' primary breeding season lasted from September to November, and their ages at first estrus varied from 12 to 18 months. There have been reports of 8–12 whelpings in a lifetime, with a litter size of 4–8 pups. Shepherds typically don't give their dogs the proper vaccinations or deworming schedule, and they don't provide housing either. Shepherds of the Gaddi tribe developed the dog mainly for herding sheep and goats (Sankhyan *et al.* 2022).

Changkhi: The Changkhi dog, recently accorded official recognition as a distinct indigenous breed by the ICAR–National

Bureau of Animal Genetic Resources (NBAGR), exemplifies the strength, alertness, and resilience characteristic of canines adapted to extreme environments. Indigenous to the high-altitude cold desert region of Ladakh, this breed is distinguished by its robust physique, acute vigilance, and strong protective instincts. Historically, the Changkhi dog has played a vital role in safeguarding livestock against predators, particularly in the challenging ecological conditions of the Trans-Himalayan landscape. Its recognition underscores the importance of preserving native genetic resources and highlights the cultural and functional significance of traditional breeds within the broader framework of biodiversity conservation and sustainable livestock management in India (NBAGR, 2025).

Breeds such as the Labrador Retriever, German Shepherd, Golden Retriever, Beagle, Pug, Rottweiler, Siberian Husky, and Shih Tzu are among the most commonly owned pets in urban households. Their adaptability to family environments, trainability, and widespread promotion through media and breeders have contributed to their growing demand. However, many of these breeds are not naturally suited to India's diverse and often harsh climatic conditions, leading to health and welfare challenges. Despite this, the preference for foreign breeds continues to overshadow native Indian dogs, impacting the visibility and conservation of indigenous canine varieties.

Choosing an appropriate breed

Choosing an appropriate dog breed in the Indian context requires careful consideration of multiple factors, including climate, living space, lifestyle, and the purpose of ownership—be it companionship, guarding, or herding. Native Indian breeds such as the Indian Pariah Dog, Rajapalayam, and Mudhol Hound are often better suited to the country's diverse environmental conditions due to their

natural adaptability, disease resistance, and lower maintenance needs. In contrast, while foreign breeds like the Labrador Retriever or Siberian Husky are popular, they may struggle with India's heat and humidity, leading to frequent health issues. Therefore, prospective owners should prioritize breeds that align with their regional climate, daily schedule, and capacity for care.

Effective dog care and management in India involve balanced nutrition, regular veterinary check-ups, vaccinations, parasite control, and appropriate grooming practices. Given the tropical climate in most parts of the country, maintaining hygiene, providing adequate shade, and ensuring constant access to clean drinking water are critical. Exercise routines should be adapted to the dog's breed and energy level, ideally scheduled during cooler hours of the day. Moreover, urban settings demand responsible pet ownership, including leash discipline, waste disposal, and socialization to prevent behavioural problems. Ultimately, responsible breed selection and proper management ensure the well-being of dogs and foster a healthier human-animal relationship.

Research progress in India

Dogs were domesticated approximately 14,000 years ago, primarily for purposes such as hunting and guarding. In contemporary India, exotic dog breeds such as the German Shepherd, Labrador Retriever, Doberman, and Pomeranian are widely popular among pet owners. However, indigenous breeds like the Caravan Hound, Combai, Chippiparai, Rajapalayam, Rampur Hound, Kanni, Mudhol Hound, Indian Mastiff (Bulli), Himalayan Sheep Dog, Bhutia Dog, and Bhakarwal Dog remain relatively underrepresented and underutilized. To address this disparity and support the conservation of native genetic resources, the Indian Council of Agricultural Research - National Bureau of Animal Genetic

Resources (ICAR-NBAGR) has developed a systematic methodology for the phenotypic and genetic characterization of Indian dog breeds (Raja *et al.*, 2016). Utilizing this approach, ICAR-NBAGR has successfully characterized and documented breeds such as Rajapalayam (NBAGR, 2014–15; Raja *et al.*, 2014, 2017) and Chippiparai (NBAGR, 2014–15; Raja *et al.*, 2015). These breeds are traditionally employed for farm guarding and, in certain regions, are symbolically presented as bridal gifts during marriage ceremonies. All three breeds have been officially registered by ICAR and duly notified by the Government of India (Raja *et al.*, 2024).

Cytogenetic analysis conducted by Raja *et al.* (2018) revealed that the chromosomal profile of the Rajapalayam breed is distinct from that of East Asian canids such as the Chinese and Japanese raccoon dogs, both members of the Canidae family. These raccoon dogs possess a diploid chromosome number of 78 and lack B chromosomes. Furthermore, in domestic dogs, female individuals (bitches) typically exhibit longer X chromosomes compared to males. Giemsa banding analysis showed that Indian dog breeds, such as the Rajapalayam, display a higher number of chromosomal bands (272 across 38 chromosomes) compared to the Chinese raccoon dog. More recently, ICAR-NBAGR has officially registered two additional native breeds: Gaddi and Changkhi. The Gaddi breed, also known as the Himalayan Sheep Dog, was phenotypically characterized and documented in the Himalayan region of Himachal Pradesh by Sankhyan *et al.* (2022). In a significant advancement towards genomic characterization, ICAR-NBAGR developed a high-density single nucleotide polymorphism (SNP) array tailored to Indian dog breeds. This involved whole-genome sequencing of 48 samples from four diverse Indian dog populations, yielding over 23 million raw SNPs. From these, a custom array

(Axiom_Shwaan) containing 629,597 SNP markers was developed. The array was subsequently validated by genotyping 186 samples representing 11 distinct Indian dog breeds/populations. The high call rate (99%) observed during validation indicates the robustness and suitability of the array for genomic studies of Indian dog populations (Raja *et al.*, 2025).

The Indian Council of Agricultural Research (ICAR) has launched a national initiative titled the “Advanced Research Project on Canines (ARPC)”, aimed at strengthening scientific research in the field of canine health, genetics, and management. The project follows a dual-centre model, with ICAR-Indian Veterinary Research Institute (IVRI), Izatnagar acting as the Lead Centre, and ICAR-National Bureau of Animal Genetic Resources (NBAGR), Karnal serving as the collaborating centre. This initiative seeks to enhance research on breed characterization, genetic improvement, disease surveillance, and welfare of canines in India.

The ARPC was formally inaugurated on 7th November, 2024, at ICAR-IVRI, Izatnagar, by Dr. Raghavendra Bhatta, Deputy Director General (Animal Science), ICAR, New Delhi. The event was attended by Dr. Divakar Hemadri, Assistant Director General (Animal Health), ICAR, and Dr. Triveni Dutt, Director of ICAR-IVRI. The dignitaries highlighted the need for focused research on indigenous canine breeds and emphasized its role in advancing national goals related to animal genetic resources, veterinary health, and service animal utility. Through this initiative, ICAR aspires to place India at the forefront of global canine research and innovation.

Hindrance and future perspectives

The conservation and promotion of native dog germplasm in India face several challenges. One of the primary hindrances is the widespread preference for exotic and foreign

dog breeds, often driven by social status, lack of awareness, and aggressive marketing by breeders. Native breeds suffer from low visibility, inadequate documentation, and limited scientific research on their genetic diversity, health profiles, and utility traits. Additionally, rapid urbanization, habitat loss, and uncontrolled cross-breeding with non-native dogs threaten the purity of indigenous breeds. Policy gaps, lack of breed-specific breeding programs, and insufficient support for local breeders further hamper conservation efforts. Moreover, public perception often undervalues native breeds, considering them inferior to foreign counterparts in terms of aesthetics and temperament, which limits their demand and formal recognition.

To safeguard India's native canine germplasm, a multi-pronged approach is essential. Strengthening breed registration and documentation through institutions like ICAR-NBAGR is critical for preserving genetic diversity. Public awareness campaigns emphasizing the ecological, cultural, and functional significance of indigenous breeds can help shift perceptions. Integrating native dogs into government programs for rural security, herding, or therapy roles can enhance their visibility and utility. Research initiatives focusing on genetic characterization, health resilience, and adaptability of Indian breeds will support evidence-based conservation strategies. Furthermore, promoting responsible breeding practices, offering incentives to native dog breeders, and establishing community-driven conservation models can ensure sustainable preservation. With coordinated efforts from policymakers, researchers, and the public, India's rich canine heritage can be protected for future generations.

CONCLUSION

In conclusion, India's dog breeds represent a valuable part of the nation's cultural and biological heritage, with indigenous breeds

well-adapted to local climates, lifestyles, and functional needs. However, the growing preference for foreign breeds, combined with a lack of awareness and scientific attention, has led to the neglect and decline of native dog populations. Preserving these breeds is not just about conserving biodiversity but also about recognizing their unique qualities and relevance in today's context. To ensure their survival, it is essential to promote indigenous breeds through awareness campaigns, responsible breeding practices, and policy support. Scientific research and documentation, as well as community involvement, can further strengthen conservation efforts. By giving importance to native breeds and encouraging their adoption, India can protect its rich canine heritage while fostering a more sustainable and culturally rooted approach to pet ownership.

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