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Human–wild boar conflict in agricultural landscapes: crop damage, human injuries, and cultural practices

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ABSTRACT

This study examines human–wild boar conflict in agricultural landscapes, focusing on crop damage, direct encounters, retaliatory responses, and associated wildlife mortality. Findings reveal that conflicts frequently occur around cultivated fields and may cause injuries to farmers. Cultural practices, including consumption and the traditional use of tusks, further demonstrate the complex socio-ecological dimensions of conflict.

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Introduction

India's landscapes are characterized by a complex socio-ecological mosaic comprising forests, agricultural lands, grazing areas, and expanding peri-urban settlements. These interconnected landscapes support both human livelihoods and diverse wildlife populations. Although protected areas remain the cornerstone of India's conservation strategy, a substantial proportion of wildlife also occurs outside formally protected areas, particularly within multi-use landscapes that are simultaneously utilized for agriculture, livestock grazing, and natural resource extraction Bisui and Shit, (2023). Nearly 70–80% of India's wildlife may occur outside protected areas, particularly in agricultural and forest-fringe landscapes where interactions between wildlife and human activities are frequent (Karanth and DeFries, 2010). Rural households often depend directly on agriculture, livestock rearing, and forest-derived resources for their livelihoods, resulting in considerable spatial and temporal overlap between human activities and wildlife habitats (Amoako Johnson and Hutton, 2014). Human-wildlife interactions are deeply embedded within long-established patterns of land use, land tenure, and livelihood practices that have evolved over several decades across rural India (Tripathi and Prasad, 2010). Consequently, understanding wildlife conservation in India requires greater attention to these human-dominated and multi-use landscapes, where conservation objectives must be balanced with the livelihood needs of local communities. Crop depredation and livestock losses occur far more frequently than fatal encounters and impose substantial economic costs on rural households, particularly smallholder farmers whose livelihoods depend on marginal agricultural production (Karanth et al., 2012). Central and southern India suggest that annual crop losses from wildlife can reach 5-15% of household agricultural income, with particularly severe impacts on smallholder farmers living near forest boundaries (Ogra 2008). The wild boar (*Sus scrofa*) is one of the most widely spread and highly adaptable ungulate species–referred to as a pest species (Khattak et al., 2022). Herbivorous animals like wild boars (*Sus scrofa*) primarily cause conflict by destroying crops in agricultural areas (Uniyal et al., 2026). Wild boars can cause considerable damage to agricultural production of cereals, such as paddy (*Oryza sativa*), potato (*Solanum tuberosum*), wheat (*Triticum aestivum*), maize (*Zea mays*), oats (*Avena sativa*), and barley (*Hordeum vulgare*); fruits, such as bananas (*Musa paradisiaca*), watermelons (*Citrullus lanatus*), and sugarcane (*Saccharum officinarum*), through consumption and trampling; and to animal production through disease transmission (Massei et al., 2011).

Human–wildlife conflict involving species like the wild pig (*Sus scrofa*) poses significant socio-economic and safety challenges to rural communities in India. Although large mammals such as elephants and tigers often dominate conflict discussions, wild pigs are among the most frequently reported conflict species, with nearly 45% of surveyed households experiencing conflict. From a nationwide study across 11 protected areas in India by Gulati et al. (2021), Wild animals, particularly migratory wild elephants, and less frequently wild boars can depredate crops, leading to a complete loss of income for a rural household and jeopardizing their food security. The incident of killing cattle herds by carnivores or predators can heavily impact the villagers' lives and livelihoods in the forest fringe areas in Jhargram District (Mandal, 2024). Beyond socio-economic assessments, clinical studies from tertiary healthcare institutions provide valuable evidence of the physical injuries associated with wild boar encounters. A retrospective study conducted at AIIMS Bhubaneswar in India by Singh et al. (2021) found that wild boars were responsible for approximately 27% of all injuries caused by wild mammalian attacks reported to the emergency department, making them the second most common source after elephants (Singh et al. 2021). The injuries primarily included deep soft-tissue lacerations of the extremities and maxillofacial injuries, including facial bone fractures (Figure 1).

Figure 1. Bloody encounter

Interestingly, 43.2% of wild boar-related injuries resulted from indirect encounters, particularly road traffic accidents. These findings emphasize the significant risk posed by wild boars to human safety and the importance of considering both direct and indirect encounters when assessing human–wild boar conflict.

The study was conducted in the Jhargram district of West Bengal, India, with an average elevation of 81 meters (265 feet) above sea level. Topographically, the district is part of the Chota Nagpur Plateau. The soil in the study area mostly consists of hard, infertile laterite soil and rocks, along with sandy loam and loamy soils. The area (22°20′16.1″N 87°02′53.9″E.) is covered with dry deciduous forests, mostly dominated by 20 to 35-foot-tall Sal (*Shorea robusta*) trees. Other common trees in the area include Mahua (*Madhuca sp*.), Haritaki (*Terminalia chebula*), Bohera (*Terminalia bellirica*), Kendu (*Diospyros sp*.), Jamun (*Syzygium sp.*), Palash (*Butea sp.*), Tal (*Borassus sp.*), and Khejur (*Phoenix sp.*). The landscape consists of forest patches surrounded by tribal villages. Agriculture is the main source of income for local people. Continuous farming was done almost throughout the year, with main crops including rice (paddy), mustard, sesame (til), potato, and various seasonal vegetables. We have conducted a detailed survey of human-wild boar conflict for the last two years (2025-26) through field visits and interaction with locals.

Results and discussion

Farmers in rural forest-edge areas of West Bengal use crude "bait bombs"—explosives hidden inside food items—to kill or deter wild boars from destroying their crops; Farmers pack crude explosives or local firecracker mixtures into food scraps. The hidden explosives do not just target wild boars; they frequently maim or kill other wandering wildlife, including cattle and feral dogs. Following conflict incidents or retaliatory killings, wild boar carcasses are rarely discarded; instead, community members may consume the meat and retain various body parts for local use (Figure 2).

Figure 2. Wild boar

In particular, wild boar tusks hold cultural significance among some indigenous communities, where they are believed to possess some protective properties. In India, families are not being adequately compensated for damage incurred from human-wildlife conflict. The state government provides an ex-gratia payment of 5,00,000 to the legal heirs of the deceased. In severe conflict clusters (such as parts of North Bengal or Cooch Behar), the state has also extended a promise of a government job to eligible family members of wild boar attack victims. Wild boar meat (Figure 4) is considered a delicacy; they also sell the meat against a moderate amount of money. Amulets or pendants (Figure 3) made from the tusks are traditionally kept for children as protection against the evil eye and other forms of negative energy. The harvesting and cultural use of tusks therefore illustrates the complex interplay between crop damage, human–wildlife conflict, wildlife mortality, and traditional beliefs. These practices demonstrate that wild boar conflict cannot be understood solely in terms of agricultural losses, but must also be considered within the broader socio-cultural context in which local communities interact with wildlife.

Figure 3. Pendants made from wild boar tusks. Pic: Bloody encounter with a farmer

Figure 4. Meat of wild boar ready to cook and sell

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