LETTER TO EDITOR

The Forgotten Gatekeepers of One Health

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Dear Sir,

The One Health approach has gained increasing prominence as a framework that recognizes the interdependence of human, animal, and environmental health. It is an integrated, unifying approach to balance and optimize the health of people, animals, plants and ecosystems. It uses the close, interdependent links between these fields to create new surveillance and disease control methods. In India, where biodiversity hotspots coexist with dense human and livestock populations, successful implementation of One Health requires active engagement with communities that live at the human- animal-ecosystem interface. Among these, the Van Gujjars, a semi-nomadic pastoralist community inhabiting the forests of the Shivalik region across Uttarakhand and adjoining states represent an underrecognized yet strategically important stakeholder.(1)

For centuries, the Van Gujjars have practiced transhumant buffalo pastoralism, migrating seasonally between the Shivalik forests during winter and higher Himalayan pastures in summer. Their livelihood has fostered an intimate understanding of forest ecology, livestock health, wildlife behaviour, water resources and seasonal environmental changes in the region. The traditional ecological knowledge and system is increasingly recognized as an important complement to scientific approaches in biodiversity conservation and ecosystem management.

The daily lives of the Van Gujjars unfold at one of the most critical interfaces for emerging infectious diseases; it is the intersection of humans, livestock, wildlife and forests. Their buffaloes share landscapes with wild elephants, carnivores, and numerous other species within and around protected areas such as Rajaji National Park. Consequently, the community is also uniquely positioned to observe unusual livestock illnesses, wildlife mortality, changes in grazing ecology and environmental disturbances that may signal emerging ecological or zoonotic risks in this region.

Evidence from participatory epidemiological studies suggests that although awareness of zoonotic diseases among Van Gujjars may be variable, they possess detailed knowledge of livestock diseases, occurrence of seasonal disease and animal health management acquired through pastoral practice throughout

Generations. Such observations could substantially strengthen community-based disease surveillance if appropriately integrated into public health and veterinary systems. In many low resource areas, local ecological observations have been shown to complement formal surveillance systems by enabling earlier recognition and acknowledgement of disease outbreak and environmental change.

Beyond disease surveillance, the Van Gujjars also embody an often overlooked dimension of One Health i. e. health equity. Conservation policies have historically emphasized on management of protected areas which sometimes resulted in the displacement or marginalization of forest-dependent pastoralists. Restricted access to grazing lands, healthcare, veterinary services, education and social protection may adversely affect the health of both pastoral communities and their livestock. It may also simultaneously weaken the opportunities for collaborative ecosystem stewardship. Contemporary One Health framework increasingly emphasizes sustainable ecosystems. It also recognises that health cannot be achieved without addressing the rights, participation and well-being of Indigenous population and local communities.

The Van Gujjars are renowned for their indigenous knowledge of resource management through a rotational grazing strategy. Recognizing their community as partners rather than passive beneficiaries could yield multiple public health dividends. Community based participatory surveillance, integration of indigenous ecological knowledge into biodiversity monitoring, improved veterinary outreach, mobile health services for migratory populations and inclusion of pastoral representatives in conservation and One Health planning are practical interventions. It aligns with India's National One Health Mission and the broader goals of planetary health as well.

As India continues to strengthen its One Health architecture, greater attention should be directed toward indigenous communities that have inhabited the human-animal-environment interface for centuries. The experience of the Van Gujjars illustrates that indigenous pastoralists are not merely populations at risk but potential contributors to zoonotic surveillance, ecosystem resilience and climate adaptation. They are one of the key stakeholders at the interface between human, livestock and wildlife and therefore could serve as important sentinels and partners for One Health surveillance and conservation. Incorporating their knowledge and lived experiences into One Health policies would not only improve public health preparedness but also advance more equitable and inclusive environmental governance.(2,3,4)

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