



EPISTEMIC INEQUALITY IN THE FIELDS: TRIBAL SEED KNOWLEDGE, POWER, AND THE SOCIOLOGY OF AGRICULTURAL CHANGE

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REVIEW ARTICLE



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Abstract

Indigenous seed knowledge among tribal communities in India represents a rich ecological and cultural resource developed through generations of lived experience. However, this knowledge has remained largely marginalized within modern agricultural systems dominated by scientific expertise, market forces, and state-led development policies. Drawing on secondary literature this paper examines tribal seed knowledge as a form of subjugated knowledge that is systematically devalued in dominant development discourse. Using a power-oriented and intersectional framework, the review highlights how control over seeds is increasingly shifted from communities to external institutions, leading to the erosion of local autonomy. The paper further demonstrates that tribal women, who are central to seed preservation and exchange, experience layered marginalization based on gender, ethnicity, and socio-economic position. By foregrounding epistemic injustice and unequal power relations, the study argues that the marginalization of indigenous seed knowledge is not merely a technical issue but a sociological problem rooted in structural inequality. The paper calls for greater recognition of tribal communities as legitimate knowledge producers and for more inclusive agrarian policies that address both ecological sustainability and social justice.

Keywords: *Indigenous knowledge, Tribal communities, Seed systems, Subjugated knowledge, Power, Intersectionality*

Introduction

Seeds occupy a central place in agrarian societies, not only as sources of food but also as carriers of knowledge, culture, and power. For tribal communities in India, seed practices are closely tied to ecological understanding, social relations, and everyday survival. Over generations, tribal farmers have developed sophisticated systems of seed selection, preservation, and exchange based on local soil conditions, climatic variations, and cultural memory. Yet, despite their long-standing effectiveness, these knowledge systems have remained largely invisible within dominant agricultural discourse. Modern agricultural development has increasingly privileged scientific expertise, standardized technologies, and market-based solutions. Within this framework, indigenous seed knowledge is often labelled as “traditional” or “informal,” placing it outside the boundaries of legitimate science. Scholars argue that this is not a neutral process but a political one, where certain forms of knowledge are elevated while others are systematically devalued (Foucault, 1980). Foucault’s concept of *subjugated knowledge* is particularly useful here, as it draws attention to local, experiential knowledges that are buried or disqualified by dominant institutions of power.

In the Indian context, the expansion of commercial and hybrid seed systems has transformed seeds from shared community resources into market commodities. This shift has reduced farmers’ control over agricultural decision-making and increased dependence on external actors such as seed corporations and state agencies (Shiva, 1997). While these changes are often justified in the language of productivity and modernization, they have profound social consequences – especially for tribal communities whose livelihoods depend on ecological balance and collective practices (Scoones, 2015).

The marginalization of tribal seed knowledge also involves epistemic injustice, where communities are excluded from producing or validating knowledge about their own agricultural practices. Tribal farmers are rarely consulted in policy formulation or research design; instead, they are positioned as recipients of expert knowledge rather than as knowledge producers (Nazarea, 2005). This exclusion is further intensified when viewed through the lens of intersectionality. Intersectional theory highlights how multiple axes of inequality – such as gender, ethnicity, class, and geographical location – interact to shape experiences of marginalization (Crenshaw, 1989).

Feminist political ecology has shown that tribal women, who are often the primary custodians of seed knowledge, face layered forms of exclusion. Their ecological labour is undervalued both because it is performed by women and because it is embedded

within indigenous knowledge systems that lack institutional recognition (Agarwal, 1992; Shiva, 1989). As a result, women's seed practices remain largely absent from official data, agricultural training programmes, and development narratives.

Against this backdrop, this paper undertakes a secondary data-based sociological review to examine tribal seed knowledge through the combined lenses of subjugated knowledge, power, and intersectionality. By synthesizing existing literature from sociology, political ecology, and agrarian studies, the paper seeks to move beyond romanticized or culturalist representations of indigenous knowledge and instead foreground the structural forces that shape who controls seeds, whose knowledge is recognized, and whose voices remain unheard. In doing so, the study contributes to broader debates on knowledge inequality, agrarian power relations, and social justice in contemporary India.

Review of Literature

Scholarly work on indigenous and tribal seed knowledge shows that seeds are tied to cultural memory and local livelihoods in indigenous farming worlds (Nazarea, 1998), yet modern seed regimes often devalue or commodify farmers' knowledge and practices (Kloppenborg, 2004). Early sociological and anthropological studies highlight that tribal and peasant communities have historically developed rich systems of seed selection, storage, and exchange based on long-term interaction with local ecology. These systems are usually transmitted orally and through everyday practice rather than written texts. Because of this, they are frequently dismissed as "unscientific" or "traditional," despite being effective and sustainable (Nazarea, 1998; Brush, 2004).

Michel Foucault's idea of *subjugated knowledge* helps explain this marginalization. Subjugated knowledge refers to local, experiential forms of knowing that are overshadowed by dominant forms of knowledge produced by institutions such as the state, universities, and corporations (Michel Foucault, 1980). Scholars applying this concept to agriculture argue that indigenous seed knowledge is systematically excluded from policy-making and agricultural planning, even though it has helped communities survive droughts, pests, and climate uncertainty for generations (Scoones, 2015). Feminist political ecology further strengthens this argument by showing how seed knowledge is often gendered and rooted in women's everyday labour. Agarwal (1992) and Shiva (1989) point out that women – especially in tribal and rural communities – play a central role in conserving seeds and biodiversity. Yet, their knowledge is rarely acknowledged in formal agricultural institutions. Instead, development programs focus on productivity and yield, reinforcing a power imbalance between expert knowledge and community knowledge.

Several studies document how the spread of hybrid and commercial seeds has reduced farmers' control over agriculture. Shiva (1997) argues that when seeds become commodities owned by corporations, farmers lose autonomy and become dependent on the market. This shift transfers power from communities to seed companies and the state, weakening traditional systems of sharing and reciprocity. Pionetti (2006) shows that this process not only affects biodiversity but also undermines social relationships built around seed exchange. Research on informal seed systems demonstrates that local seed networks are resilient and adaptive. Sperling and McGuire (2010) explain that farmers often prefer home-saved seeds because they are reliable, affordable, and suited to local conditions. However, these informal systems receive little policy support and are often viewed as backward, reinforcing their subordinate position in the agricultural knowledge hierarchy.

In the Indian context, scholars note that tribal knowledge is frequently included in development discourse only as cultural heritage, not as practical or scientific knowledge. Even recent policy frameworks like the Indian Knowledge System (IKS) initiative emphasize documentation rather than power-sharing or community control. As a result, tribal communities remain knowledge holders without authority (Ministry of Education, 2020).

Overall, existing literature clearly shows that tribal seed knowledge exists within unequal power relations. While it contributes to food security, ecological balance, and cultural continuity, it is often marginalized by state policies, market forces, and dominant scientific narratives. This review builds on these studies to highlight how seed knowledge becomes subjugated and how power operates through modern agricultural systems to reshape who controls seeds, knowledge, and livelihoods.

Methodology

This study uses a qualitative secondary review method based on existing literature. Peer-reviewed articles, books, and policy documents were thematically analysed to examine (i) to understand how tribal seed knowledge is marginalized as subjugated knowledge, and (ii) to find out how power and intersectional inequalities shape control over seeds and knowledge systems. The analysis is interpretive and theoretical in nature, aiming to generate sociological insights rather than empirical generalization. The author also acknowledges the use of ChatGPT as a supportive tool for language refinement, structural organization, and clarity of expression. The core ideas, analysis, interpretation, and academic responsibility for the content remain entirely with the author.

Analysis and Discussion

Indigenous Seed Knowledge as Subjugated Knowledge: Existing literature consistently shows that tribal seed knowledge occupies a *subordinate position* within modern agricultural and development systems. Although tribal communities possess detailed knowledge about seed selection, storage, soil conditions, and seasonal cycles, this knowledge is rarely treated as legitimate or scientific. Instead, it is often labelled as "traditional," "customary," or "informal," which places it outside formal institutions of knowledge production. Drawing on Foucault's concept of *subjugated knowledge*, scholars argue that indigenous knowledge systems are not absent but are actively marginalized by dominant regimes of expert knowledge. Agricultural science,

extension services, and policy frameworks tend to prioritize laboratory-tested, standardized, and market-oriented seeds, while everyday ecological knowledge grounded in lived experience is systematically ignored. This marginalization occurs not because tribal knowledge is ineffective, but because it does not conform to the epistemic language, methodologies, and power structures of modern scientific institutions (Foucault, 1980; Agrawal, 1995; Shiva, 1989). Studies by Nazarea (2005) and Brush (2004) show that indigenous seed practices are based on long-term observation, memory, and experimentation across generations. However, because these practices are transmitted orally and embedded in daily life rather than written manuals, they are treated as culturally interesting but scientifically weak. As a result, tribal communities are positioned as *knowledge holders without authority*.

This process also involves *epistemic injustice*, where tribal farmers are rarely invited to shape agricultural policy or research agendas and are instead positioned as passive adopters of externally produced knowledge. Their exclusion is not only based on knowledge hierarchies but is also structured by *intersectional inequalities* of gender, ethnicity, class, and location. Intersectionality theory emphasizes that systems of power do not operate in isolation; rather, multiple forms of marginalization overlap and intensify one another (Crenshaw, 1989). Ecofeminists highlight that tribal women—who are often the primary custodians of seeds – experience a *double marginalization*: first as members of historically marginalized indigenous communities, and second as women whose ecological labour is undervalued and rendered invisible (Agarwal, 1992; Shiva, 1989). As a result, women’s seed knowledge remains largely absent from official data, agricultural training programmes, and development narratives, reinforcing both gendered and epistemic exclusion within agrarian knowledge systems. Thus, the literature reveals that tribal seed knowledge is subjugated not because it lacks value, but because power determines which knowledge counts as valid. The marginalization of indigenous seeds is therefore a social and political process, not a technical one.

Power, Control, and the Politics of Seeds: The second objective focuses on how power operates through the state, market, and scientific institutions to control seeds and agricultural knowledge. Literature clearly shows that modern seed systems are shaped by unequal power relations that favour corporations, state agencies, and formal science over local communities. The expansion of commercial and hybrid seeds has transformed seeds from shared community resources into market commodities. Shiva (1997) argues that this shift concentrates power in the hands of seed companies and reduces farmers’ autonomy. Once farmers are required to purchase seeds every season, they lose control over production decisions and become dependent on external inputs. This dependency is especially harmful for tribal communities, whose livelihoods are already vulnerable. State agricultural policies often reinforce this power imbalance. Extension programs promote “improved” or “high-yield” varieties as symbols of progress, while indigenous seeds are framed as outdated or inefficient. Scoones (2015) notes that development discourse frequently equates modernization with scientific intervention, leaving little space for local decision-making. As a result, power over seeds moves away from villages and households toward markets and bureaucratic institutions.

Research on informal seed systems (Sperling & McGuire, 2010) shows that despite their effectiveness, local seed networks receive minimal policy support. This selective recognition reflects power dynamics rather than performance. Indigenous practices are tolerated as long as they do not challenge dominant seed regimes, but they are discouraged when they compete with commercial systems. Power also operates through knowledge classification. When tribal seed practices are documented under initiatives like Indian Knowledge Systems (IKS), they are often archived rather than actively supported or integrated into everyday agricultural practice (Sundar, 2016). Documentation without control turns living knowledge into static heritage. Communities are acknowledged symbolically but remain excluded from decision-making authority (Ministry of Education, 2020). Overall, the literature demonstrates that seed systems are deeply political. Control over seeds means control over food, labour, and livelihoods. By marginalizing tribal seed knowledge and promoting market-based systems, dominant institutions reinforce unequal power relations. The struggle over seeds is therefore not only an agricultural issue, but a sociological question of power, authority, and social justice.

Taken together, these analyses show that *subjugated knowledge* and *power* are closely connected. Tribal seed knowledge becomes subjugated precisely because power is exercised through scientific authority, state policy, and market forces. Understanding seed systems sociologically reveals that what appears as technical change is actually a restructuring of social relations and control.

Conclusion

This paper has examined indigenous and tribal seed knowledge in India as a form of subjugated knowledge shaped by unequal power relations within modern agricultural systems. Drawing on secondary literature, the analysis demonstrates that the marginalization of tribal seed practices is not due to their inefficiency or irrelevance, but rather to the dominance of scientific, market-oriented, and state-led knowledge regimes that define what counts as legitimate knowledge. Using Foucault’s concept of subjugated knowledge, the study shows how local, experiential, and orally transmitted seed knowledge is systematically devalued and pushed to the margins of agricultural policy and research.

The review further highlights that control over seeds is closely linked to control over livelihoods, autonomy, and ecological sustainability. The commercialization of seeds and the expansion of hybrid and corporate seed systems have shifted power away from tribal communities toward external institutions, increasing dependency and weakening collective practices of sharing and reciprocity. While initiatives such as the Indian Knowledge Systems framework appear to recognize indigenous knowledge, their

emphasis on documentation rather than community control often reduces living practices to static archives, leaving existing power hierarchies largely unchanged.

An intersectional perspective reveals that these processes are deeply gendered. Tribal women, who play a central role in seed preservation and exchange, experience layered marginalization based on gender, ethnicity, and class. Their ecological labour remains largely invisible in formal institutions, reinforcing both epistemic and social injustice.

Overall, the study argues that the marginalization of indigenous seed knowledge is a sociological problem rooted in structural inequality rather than a technical gap to be solved by modernization. Recognizing tribal communities as legitimate knowledge producers, and supporting their control over seeds, is essential not only for ecological sustainability but also for advancing social justice in agrarian India.

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