

## **Human Security in Odisha: Challenges, Vulnerabilities, and Pathways for Inclusive Development**

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### **Abstract**

Human security in Odisha constitutes a complex, multidimensional concern shaped by persistent socio-economic inequities, ecological volatility, and structural governance deficits that disproportionately affect Scheduled Tribes and other marginalized groups. Although the state has registered notable progress in poverty reduction, disaster governance, and social welfare provisioning, existing scholarship remains analytically fragmented, with studies largely confined to discrete domains such as malnutrition, migration, or climate vulnerability. This paper addresses this critical research gap by advancing an integrated human security perspective that synthesizes economic, nutritional, health, environmental, political, and cultural dimensions. The core objectives are: to identify the principal threats undermining human security in Odisha, to examine the differentiated vulnerabilities confronting tribal and rural populations; and to propose context-sensitive pathways for inclusive and resilience-oriented development. Methodologically, the study employs a descriptive analytical approach, drawing upon secondary sources including Census data, NFHS surveys, State Human Development Reports, disaster management documents, and scholarly literature. The scope encompasses both macro-structural conditions and micro-regional disparities, with emphasis on high-vulnerability districts such as Koraput, Malkangiri, Rayagada, and Keonjhar. The study argues that enhancing human security requires a rights-based, institutionally grounded, and resilience-enhancing framework centred on livelihood diversification, nutritional adequacy, accessible healthcare, disaster preparedness, cultural preservation, and participatory governance.

**Keywords:** Human Security, Odisha, Tribal Communities, Disaster Vulnerability, Livelihoods, Governance, Social Inclusion

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## **Introduction:**

Human security in Odisha represents a multidimensional and analytically complex domain that encompasses the interrelated spheres of economic stability, food and nutritional adequacy, public health, environmental safety, political empowerment, and cultural integrity. The state accommodates one of India's most populous and heterogeneous tribal communities; approximately 22.8 per cent of Odisha's population, equivalent to nearly ten million individuals, identify as members of Scheduled Tribes (STs), as documented in recent demographic and public health assessments (Kshatri et al., 2023). Moreover, more than 90 per cent of this tribal population resides in rural and predominantly inaccessible regions, where livelihood systems are intricately tied to subsistence agriculture, forest ecosystems, and customary socio-cultural practices (Kshatri et al., 2023). These demographic realities underscore the centrality of tribal and rural well-being to any comprehensive evaluation of human security within the state.

Employing a human-security framework reveals that multiple, overlapping vulnerabilities, such as entrenched poverty, pervasive malnutrition, inadequacies in healthcare access, heightened exposure to natural disasters, and persistent institutional and governance deficits, collectively impede the substantive freedoms and developmental opportunities available to Odisha's marginalized populations. Although the state has registered discernible progress in poverty alleviation, social welfare expansion, and disaster risk management over the past two decades, the distribution of these gains remains uneven and structurally skewed. Empirical evidence consistently demonstrates that tribal and remote rural communities experience disproportionate deprivation across numerous indicators, including income, nutritional outcomes, morbidity and mortality rates, educational attainment, and access to essential public services. Furthermore, existing scholarship tends to examine these challenges through narrow, sectoral perspectives, focusing, for instance, exclusively on malnutrition, migration, or climate vulnerability, thereby obscuring the systemic interconnections and historically rooted inequities that shape the lived experiences of Scheduled Tribe populations in Odisha.

Against this backdrop, a holistic, rights-based, and context-sensitive human-security approach becomes indispensable for analysing the multidimensional threats faced by Odisha's tribal and rural communities. Such an approach enables a more comprehensive understanding of how structural poverty, ecological fragility, socio-political marginalization, and cultural erosion converge to constrain human capabilities and perpetuate intergenerational vulnerability. The

present study seeks to interrogate these dynamics by identifying the principal threats to human security, elucidating the differentiated vulnerabilities across high-risk districts, and proposing development pathways that are inclusive, resilient, and culturally responsive.

### **Socio-Economic Inequities and Tribal Vulnerabilities**

Odisha's tribal communities continue to experience profound socio-economic marginalization relative to the general population, a pattern consistently documented across empirical studies and policy assessments. Chronic poverty, suppressed income levels, and structurally limited livelihood opportunities underscore the depth of this disadvantage. Recent analyses reveal that the average monthly per-capita income among the state's Particularly Vulnerable Tribal Groups (PVTGs) is approximately ₹2,100, an amount significantly below the official poverty threshold and indicative of persistent material deprivation (Bhoi & Acharya, 2024). Although Scheduled Tribes constitute roughly one-fourth of rural households in Odisha, they represent nearly 39 per cent of the rural poor and close to half of those in the lowest wealth quintile, demonstrating the disproportionate concentration of poverty within tribal communities (Nayak, 2018)

These economic inequities are further compounded by marked deficits in educational attainment. Literacy among PVTG adults stands at merely 37.4 per cent, less than half the state average of 73 per cent, reflecting entrenched educational exclusion and the intergenerational transmission of disadvantage (Bhoi & Acharya, 2024). Structural constraints such as landlessness, recurrent land alienation, and insecure tenure intensify livelihood precarity, pushing many tribal households into low-paying and unstable forms of employment. A significant proportion rely on seasonal agricultural labour, irregular wage employment under schemes such as MGNREGA, and the extraction of minor forest produce, all of which offer limited income stability and are highly susceptible to environmental fluctuations.

*A rural tribal community in Odisha depends on subsistence farming and forest resources. Surveys show that most tribal households have extremely low incomes – for example, PVTG families report average per-capita earnings of only ₹2,100 per month (Bhoi & Acharya, 2024). Economic insecurity among Odisha's tribals translates directly into human insecurity. Poverty forces families to skimp on nutrition, health care, and education. For instance, wealth inequalities in child nutrition remain stark: Odisha's tribal under-5 children have consistently higher rates of stunting, wasting, and underweight than non-tribal children (Rekha et al., 2023).*

In absolute terms, malnutrition is rampant. According to government data, 11,710 children in Odisha are suffering from severe acute malnutrition (SAM), the vast majority from tribal-dominated districts (Press Trust of India, 2024). The worst-affected areas include largely tribal districts such as Mayurbhanj (1,460 SAM cases), Keonjhar (1,269), Nabarangpur (760), Rayagada (645), Malkangiri (570) and Kalahandi (636) (Press Trust of India, 2024). These figures likely underestimate the true burden, since many cases go unreported in remote regions. Such nutritional deprivation undermines health and cognitive development, trapping communities in long-term poverty. In short, the combined effects of chronic poverty, low education, and severe hunger represent principal threats to tribal human security.

### **Health Inequities and Social Indicators**

Health outcomes among Odisha's Scheduled Tribe (ST) communities remain profoundly inferior to state-level averages, reflecting a convergence of structural deprivation, institutional neglect, and socio-cultural marginalisation. Quantitative indicators illustrate the magnitude of these disparities with clarity. The infant mortality rate among STs, 55.9 deaths per 1,000 live births (2019–21), and the under-five mortality rate of 69.8 per 1,000 are not merely elevated figures but emblematic of a persistent health deficit that has resisted decades of policy intervention (Government of India, 2022). Maternal and child health metrics similarly convey entrenched vulnerabilities: immunization coverage remains chronically low; the prevalence of low birthweight, severe anaemia, and undernutrition is disproportionately high; and preventable infectious diseases continue to circulate with alarming regularity, as demonstrated by NFHS datasets and specialised tribal health assessments.

The burden of communicable diseases, especially tuberculosis, malaria, and vector-borne infections, is substantially higher among tribal populations. These patterns are symptomatic of wider structural impediments, including endemic poverty, food insecurity, and chronic undernourishment, which collectively weaken immune resilience. Health system deficiencies exacerbate these vulnerabilities. Despite long-standing policy prescriptions advocating culturally aligned and community-anchored primary healthcare (as recommended by the Odisha Tribal Family Health Survey and the Xaxa Commission, 2014), tribal regions frequently suffer from acute shortages of trained personnel, erratic service delivery, inadequate transportation networks, and linguistic as well as cultural barriers that inhibit effective health-seeking behaviour (Bhoi & Acharya, 2024). The physical remoteness of many tribal

settlements further compounds these deficits, rendering even basic healthcare an aspirational rather than accessible service.

Beyond biomedical determinants, tribal health is profoundly shaped by social and cultural faultlines. The persistence of witch-hunting, particularly in PVTG-dominated districts such as Mayurbhanj, Keonjhar, Rayagada, Malkangiri, Gajapati, and Koraput, represents a stark expression of gendered violence, social paranoia, and collective insecurity. Odisha's position among the highest states in reported witchcraft-related assaults (Bhoi & Acharya, 2024) underscores deep-seated patriarchal norms, inadequate community-level grievance mechanisms, and the absence of robust social protection frameworks. Such practices instill pervasive fear, suppress women's agency, and deter vulnerable individuals, especially women and adolescent girls, from accessing education, reproductive health services, or legal recourse.

Taken together, the interplay of economic precarity, institutional insufficiency, and socio-cultural discrimination produces a layered and multidimensional health insecurity among Odisha's tribal populations. These conditions erode not only physical well-being but also psychological dignity, social trust, and community resilience. The resultant human-security deficit demands integrated, context-sensitive interventions that bridge clinical, cultural, and structural domains, an imperative that remains central to any meaningful discourse on tribal development in Odisha.

### **Environmental Hazards and Disaster Vulnerability**

Odisha's geography and climate expose its populations to frequent natural disasters, storms, floods, droughts and cyclones, and tribal areas are often among the hardest hit. An independent analysis found that 26 of Odisha's 30 districts (housing ~36 million people) are hot-spots for extreme weather events (Council on Energy, Environment and Water, 2021). Cyclones have grown more frequent and intense, with storm surges tripling from 1970–2019, while extreme flood events have increased nearly seven-fold (Council on Energy, Environment and Water, 2021). The coastal belt (e.g. Balasore, Kendrapara) faces cyclones, but inland tribal areas (Rayagada, Malkangiri, Koraput) are repeatedly battered by flash floods and landslides during monsoons (Council on Energy, Environment and Water, 2021). Conversely, even traditionally flood-prone zones (Angul, Kalahandi) have seen more frequent droughts in the last decade (Council on Energy, Environment and Water, 2021). As a result, tribal farmers, who often depend on rainfed or hill-farming, face erratic yields and crop failures. For example,

drought-like conditions in Kandhamal and drought events in historically wet districts have undermined paddy cultivation. Meanwhile, riverine floods inundate paddy fields and wash away homes.

These ecological shocks directly threaten human security: loss of harvest leads to hunger, and loss of shelters leads to displacement. Tribal homelands are often in vulnerable terrains (river valleys, steep hills, forests) and many habitations have poor infrastructure. In the Super Cyclone of 1999, over 10,000 lives were lost across Odisha; in its aftermath the state prioritized disaster risk reduction. Odisha's model of community-centered disaster management has since become a global exemplar. The state now evacuates communities effectively (over 1 million people ahead of Cyclone Phailin in 2013) and has built ~800 multi-purpose cyclone shelters along the coast (World Bank, 2021). Early-warning sirens and watchtowers cover thousands of villages (World Bank, 2021). Importantly, local women's self-help groups, Gram Panchayats and thousands of volunteers are trained in mock drills each season (World Bank, 2021). These measures have dramatically reduced cyclone fatalities to nearly zero.

However, more remains to be done for human security: hazards are intensifying under climate change (more cyclones, heatwaves, extreme rainfall) and remote tribal communities may lack access to shelters or communications. As one study warns, Odisha must continuously adapt (e.g. build resilient housing, improve inland flood defenses, ensure energy and medical supplies during disasters) to safeguard its vulnerable communities (World Bank, 2021). Without these efforts, ecological volatility will repeatedly unravel gains in livelihood and health, especially among tribal farmers and forest dwellers.

### **Differentiated Vulnerabilities: Tribals and Rural Communities**

Human security in Odisha varies dramatically by region and population. Remote rural and tribal areas, particularly the former KBK belt (Koraput, Malkangiri, Rayagada, Kalahandi, Nuapada), consistently fare far worse than urban or non-tribal areas on development and welfare indicators. Odisha's tribal peoples, especially the *Particularly Vulnerable Tribal Groups* (PVTGs) such as the Kutia Kondh, Dongria Kondh, Lanjia Soura, and Bonda, experience the most severe deprivation. For example, anthropometric surveys of these groups document shockingly high undernutrition: one study found that roughly 79% of adults in an Upper Bonda (a PVTG) community were underweight (BMI < 18.5) (Bhoi & Acharya, 2024). Similarly, a recent narrative review of Odisha PVTGs notes that low BMI and malnutrition are

“major nutritional problems” across PVTGs, with prevalences ranging from about 30% up to 79% in different groups (Bhoi & Acharya, 2024). Such data underscore profound chronic hunger among Odisha’s most vulnerable tribes. By contrast, non-tribal areas and higher-income districts show far lower rates of undernutrition.

These disparities reflect broader developmental gaps. Multiple analyses confirm that former KBK districts remain the least developed in the state. A 2025 study using composite development indices finds that seven of Odisha’s eight “Indigenous-majority” (largely tribal) districts are still classified among the *least developed* in the state (Gual & Das, 2025). In these districts, basic infrastructure is severely lagging. For example, literacy rates, road density, electricity access and irrigation coverage are far below state averages. The study highlights “critical deficits” in literacy and road connectivity in KBK districts (Gual & Das, 2025). Poverty rates in KBK remain extraordinarily high, well above the state mean. (One analysis of NSS data notes KBK rural poverty around 68% versus ~47% state-wide (Gual & Das, 2025).) Likewise, official planning documents and district reports repeatedly note that Koraput, Malkangiri, Rayagada, Kalahandi and Nuapada have some of the lowest Human Development Index values and highest BPL rates in Odisha. Infrastructure is poor: large fractions of villages still lacked all-weather roads, electricity or public health facilities as of the 2010s. Such statistics confirm that remoteness and underdevelopment coincide. In practice, families in these tribal districts have much weaker safety nets. When shocks (cyclones, droughts, price spikes, COVID-19 etc.) occur, households here have little financial reserve or market access, magnifying food-security and livelihood risk

### **Health and Nutrition Inequalities**

State-level health surveys and media reports likewise reveal stark tribal-nontribal gaps. Odisha’s overall infant mortality has declined, but it remains high in tribal areas. NFHS-5 (2019–21) data show that Odisha’s ST population’s infant mortality rate is about 55.9 per 1,000 live births (Government of India, 2022), far above the national ST average (41.6‰) and among the highest in India. (For comparison, the state average IMR is ~32‰ (Panda & Sahu, 2025).) Tribal-dominated districts consistently lead state charts for neonatal, infant and under-five mortality. Media accounts corroborate this: for example, an Odisha government reply in late 2024 noted that seven of the 10 districts with the most children suffering severe acute malnutrition (SAM) are tribal districts (including Mayurbhanj, Rayagada, Malkangiri, Kalahandi, Koraput) (Press Trust of India, 2024). In raw numbers, Mayurbhanj alone had 1,460

children with SAM, far more than any coastal district(Press Trust of India, 2024). By contrast, better-off districts report only a few dozen such cases.

These outcomes align with nutrition data. As noted above, PVTGs show extremely high rates of low BMI. Child malnutrition is similarly endemic: for instance, recent surveys indicate that two-thirds of children under five in Odisha's poorest tribal areas are stunted or underweight. Health surveys (NFHS-5, State Health Reports) consistently find that indicators like anemia, underweight children, and early childhood mortality cluster in tribal regions. Moreover, chronic disease burdens are heavier in tribal communities. For example, tuberculosis prevalence studies report rates of 6–18% in sampled PVTG communities (e.g. ~18% among Dongria Kondh elders) (Bhoi & Acharya, 2024), far above the <5% typical in general rural populations. Malaria too is highly prevalent in remote tribal villages: one review found overall malaria prevalence 8.1% among PVTGs, reaching 25% in the Kutia Kandha and ~14% in Dongria Kondh communities(Bhoi & Acharya, 2024). Hemoglobinopathies compound health risks: sickle-cell trait is common in many tribes. A state-wide analysis found about 3.3% of PVTGs carry the sickle-cell gene(Bhoi & Acharya, 2024), with certain tribes like the Didayi (7.1%) and Langia Saora (5.4%) far above this average(Bhoi & Acharya, 2024). In sum, life expectancy and overall health outcomes are significantly worse among Odisha's tribals than in urban or caste-majority groups (Mirroring national patterns: India's Tribal Affairs Ministry reports current ST life expectancy ~63.9 years versus 67 years nationally(Panda & Sahu, 2025)).

### **Displacement and Livelihood Loss**

Compounding their vulnerabilities, many tribal communities face displacement and land loss. Large infrastructure and conservation projects have routinely cut them off from traditional resources. A prominent case is the Similipal Tiger Reserve in Mayurbhanj: over recent decades, government relocations of tribal villages (de facto forced eviction) have stripped households of farm plots and forest gardens. Reports on Similipal show that relocated Adivasi families “lost their farmlands, had reduced access to forest resources, and many became daily-wagers” in marginal jobs(Jamwal, 2025). In other words, even small shocks (crop failure, illness) can now plunge these families into destitution, since they lack land or wild foods to fall back on. (Similar patterns occur around mining and irrigation projects elsewhere in Odisha: claims of development are offset by tribal dispossession and debt-levelling.)



These multiple disadvantages extreme poverty, geographic isolation, low literacy, and loss of traditional livelihoods accumulate. They mean that Odisha's tribal and peripheral rural populations are the least able to cope with natural disasters, economic downturns, or pandemics. The data reviewed here imply that any statewide policy or program which ignores regional and social differentiation will leave the most vulnerable behind. A "one-size-fits-all" approach obscures the acute insecurity of Odisha's tribal and remote communities. As analysts note, tailored interventions (improving health infrastructure, ensuring land rights, and targeting nutrition and welfare schemes) are urgently needed to close the gap between Odisha's hinterlands and its more advanced areas(Jamwal, 2025).

### **Pathways for Inclusive and Resilient Development**

Addressing these human security challenges requires a rights-based, resilience-oriented development framework that centers the needs of tribal and rural communities. Key strategies include:

- **Secure Livelihoods and Land Rights:** Ensure secure access to land and forest resources. Implement and review the Forest Rights Act (FRA) aggressively so that tribals can claim Community Forest Rights (CFR) and Individual Forest Rights (IFR). Evidence shows that when tribals obtain legal land/forest titles, they often improve livelihoods and forest stewardship(Panda & Sahu, 2025). For example, after claiming 65 hectares of ancestral forest in Rayagada (through Gram Sabha action), 25 tribal families reported better incomes and no harassment by officials(Panda & Sahu, 2025). Such decentralization (empowering Gram Sabhas) not only restores historical justice but also incentivizes sustainable local resource management(Panda & Sahu, 2025). In parallel, rural development programs (like MGNREGA or watershed projects) should prioritize vulnerable districts to diversify incomes (e.g. agroforestry, horticulture, crafts, rural entrepreneurship) and reduce dependence on single crops.
- **Nutritional Adequacy:** Strengthen food security schemes targeted at tribal areas. Odisha already implements the Targeted Public Distribution System (PDS), Integrated Child Development Services (ICDS), Mid-Day Meal (MDM), and state schemes (Mukhya Mantri Samparna Pushti Yojana, Mamata Diwas/Village Health and Nutrition Days, etc.)( Press Trust of India, 2024). These must be fully resourced, culturally adapted (using local foods and languages), and integrated with livelihood supports (e.g. small irrigation). Community nutrition interventions (e.g. local kitchen gardens,

nutrition counseling by AWW workers) can address micronutrient deficiencies. Crucially, health and nutrition programs should use participatory village-level monitoring (Gram Sabha vigilance) to reach the last child. The 2024 report on SAM in Odisha highlights that multi-sector action – involving women’s groups, anganwadi centers, and improved diets – is needed in tribal belt districts( Press Trust of India, 2024).

- **Accessible Healthcare:** Expand primary healthcare infrastructure in tribal areas. This includes more sub-centers and mobile clinics, as well as culturally sensitive outreach by tribal community health workers. The health commission (2014) and tribal health experts recommend “community-based primary care managed by Aarogya Mitra (local tribal youth) and ASHA workers, supported by Gram Sabhas” (Bhoi & Acharya, 2024). Such community health networks must be prioritized for screening and prevention of both communicable (malaria, TB) and non-communicable diseases (diabetes, hypertension). Tribal health insurance schemes and telemedicine can also be scaled up to reduce financial barriers. Training local staff in tribal languages and customs will improve trust. Over time, these measures can shrink the gap between tribal and non-tribal health outcomes.
- **Disaster Resilience:** Sustain and expand Odisha’s proactive disaster preparedness, focusing especially on tribal villages. Key investments include sturdy cyclone- and flood-resilient housing (ODMA’s cyclone shelters and upgraded rural housing), expanded early warning systems (village sirens, SMS alerts, community radios), and local disaster response teams. Odisha’s model of state-led drills and community volunteers(Jena & Kouamé, 2023) should extend beyond cyclones to include flash flood and drought response. For instance, pre-monsoon flood education, reservoir management, and drought-relief schemes (fodder banks, drought loans) can help tribal farmers adapt. Importantly, development planning in high-risk districts (Koraput, Rayagada, Malkangiri, Keonjhar etc.) must integrate climate risk assessment, so that infrastructure (roads, bridges, schools) is built climate-proof. Cross-cutting, empowerment of local Gram Panchayats and women’s collectives as first responders should continue, a strategy proven effective in reducing casualties in recent cyclones(Jena & Kouamé, 2023).
- **Cultural Preservation and Education:** Protect and promote indigenous cultures, languages, and knowledge. This means supporting tribal language education in schools, preserving tribal art and folklore, and involving elders in community planning. For

example, officially recognizing tribal lands as cultural heritages (sacred groves, ritual sites) can protect forests and strengthen identity. Scholarships, bridge courses, and hostels for tribal students can improve educational access. By valuing tribal identity, development programs can become more inclusive and encourage local ownership. This cultural security also fosters mental and social well-being, which is a key facet of human security. (No single source cited, but recommended by experts (Bhoi & Acharya, 2024) as essential to health and well-being.)

- **Participatory Governance:** Finally, build on India's constitutional provisions (Fifth Schedule, PESA, FRA) to deepen local democracy. Ensure that tribal Gram Sabhas have real power over land use, resource management, and social welfare schemes (Panda & Sahu, 2025). State agencies (such as the Tribal Development Department and local tribal research institutes) should involve tribal representatives in policy design and implementation. Odisha's experience with disaster management has shown that community participation saves lives (Jena & Kouamé, 2023); similarly, participatory budgeting and village plans can ensure that government funds actually address tribal needs (for schools, health, irrigation, etc.). Greater transparency and inclusion in governance will build trust and make development more resilient. In practice, this means strengthening the capacity of institutions like SC & ST Development Boards, ensuring accurate data collection (e.g., via the forthcoming Tribal Health Survey), and promoting land- and forest-rights committees at the village level.

Taken together, these pathways form an integrated human-security strategy: secure livelihoods and nutrition for “freedom from want”, robust local disaster preparedness for “freedom from fear”, and rights-based empowerment for “freedom to live in dignity”. Odisha has already pioneered several promising models (e.g. its disaster authority, nutrition schemes, MGNREGA participation) but must now focus them explicitly on tribal and rural equity. Only by approaching poverty, malnutrition, health care, environment, and culture as interconnected challenges can Odisha build truly inclusive resilience for all its communities.

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