

Agrarian Folk Culture in Transition: A Mixed-Methods Study from Rural Assam

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Abstract

Assam, a culturally plural state in northeastern India, harbors one of the subcontinent's most layered agrarian folk cultures spanning traditional agricultural implements, seasonal festivals, ritual customs, folk beliefs, specialized agricultural vocabulary, attire, folk songs, indigenous food systems, and ethnomedical knowledge. The present study examines the multidimensional transformation of this heritage under the combined impact of modern science, technology, and globalization, and systematically identifies its principal determinants. Drawing on a major field-based study conducted across five districts of Assam Lakhimpur, Dhemaji, Dibrugarh, Majuli, and Sonitpur the research employs a mixed-methods design integrating structured questionnaire surveys (450 respondents across 32 villages), 96 in-depth interviews, 18 focus group discussions, participant observation, and transect walks. The study documents: substantial displacement of draft-animal tillage by mechanized implements; progressive detachment of agricultural festivals from their agricultural content; marked erosion of agricultural folk speech and oral tradition; widespread substitution of commercially produced garments and food items for traditional counterparts; and accelerating attrition of indigenous medical knowledge. Primary determinants are analyzed under three categories economic, intellectual-educational, and social. Findings reveal sharp generational discontinuities in cultural knowledge, pointing to a risk of irreversible heritage loss without deliberate conservation measures. Evidence-based recommendations are offered for policy and community action.

Keywords: Agrarian Folk Culture, Assam, Technological Modernisation, Bihu, Mising, Bodo, Folk Tradition, Indigenous Knowledge, Cultural Transformation, Intangible Heritage.

1. Introduction

Folk culture the inherited ensemble of a community's practices, beliefs, material technologies, and expressive traditions constitutes an irreplaceable dimension of human cultural diversity. For agrarian societies, folk culture is inseparable from the rhythms of cultivation. The tools farmers craft, the songs sung at harvest, the rituals performed at sowing, and the beliefs that

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guide planting decisions collectively form what Redfield (1956) termed the 'Little Tradition': a body of practical and symbolic knowledge accumulated across generations of intimate engagement with the cultivated landscape.

Assam, situated in north-eastern India, has sustained this agrarian folk culture across a remarkable diversity of ethnic communities the Assamese-speaking mainstream, the Mising, Bodo, Deori, Sonowal Kachari, Rabha, and Tiwa, among others each with distinct agricultural traditions shaped by specific ecological conditions. Agriculture, primarily wetland paddy cultivation, has been the material foundation of Assamese civilisation since antiquity; the folk culture it generated encompasses implements, seasonal festivals, ritual customs, oral literature, textile practices, indigenous food systems, and an extensive pharmacopoeia of plant-based medicine.

Since the mid-twentieth century, and with sharply accelerating pace following India's economic liberalisation, this agrarian folk culture has faced pressures of transformation without historical precedent. The introduction of mechanised traction, high-yielding seed varieties, chemical inputs, electronic media, and digital connectivity into rural Assam has fundamentally altered the social and material conditions within which agrarian folk culture was produced and reproduced. Although Rajkhowa (2019) conducted a pioneering UGC-sponsored field-based investigation of this transformation, and earlier Assamese scholarship has addressed specific dimensions of the topic (Goswami, 1960; Sharma, N., 2010; Baruah, 2019), comprehensive, multi-community, quantified comparative studies remain scarce. The present paper addresses this gap, drawing on systematic field research across five districts, multiple ethnic communities, and eight dimensions of agrarian folk culture.

This study makes three key contributions: (i) it provides the first large-scale mixed-methods analysis of agrarian folk culture transformation in Assam; (ii) it develops a tripartite analytical framework of determinants; and (iii) it offers empirical evidence of generational discontinuity in cultural knowledge.

2. Literature Review

The theoretical framework of the present study draws on Redfield's (1956) conceptual distinction between the 'Great Tradition' of literate elite culture and the 'Little Tradition' of village folk culture a distinction that highlights the vulnerability of folk culture to the restructuring forces of modernity. Appadurai's (1996) analysis of global mediascapes extends this framework to the contemporary context, foregrounding the role of electronic and digital media in reconfiguring local cultural practice.

In the domain of agricultural systems, Shiva (1993) argues that the displacement of traditional cultivation practices by Green Revolution technology constitutes not merely an agronomic change but a form of cultural dispossession, entailing the loss of accumulated ecological knowledge. Zimmerer and de Haan (2017) demonstrate that the agrobiodiversity maintained by traditional smallholder farming systems represents a form of ecological insurance against climate-related agricultural stress. Scott's (1998) concept of 'metis' the practical, embodied, context-specific knowledge embedded in traditional practices provides a useful framework for understanding what is at stake when agrarian folk culture is displaced.

In the Assamese context, Rajkhowa's (2019) UGC-sponsored major research project report provides the most direct empirical antecedent to the present study, offering field-based evidence of the impact of science and technology on agrarian folk culture across selected districts of Assam. Goswami (1960) remains the foundational study of the Bihu festivals; Sharma, N. (2010) provides a comprehensive account of Assamese folk culture and its varieties; Pegu (2005) documents the folk culture of the Mising community; and Baghlari (2003) offers an authoritative account of Bodo society and culture. Mazumdar (2015) and Misra, P. (2010) address the relationship between science, technology, and society in the Assamese context. The collective contribution of these works provides the interpretive framework within which the present empirical findings are situated.

3. Research Objectives

This study pursues five specific objectives:

- (a) To characterise the principal components of agrarian folk culture across the major ethnic communities of the study area.
- (b) To document, with quantified evidence, the changes introduced by modern science and technology into each component.
- (c) To identify and analyse the determinants of these changes within a tripartite framework of economic, intellectual-educational, and social causation.
- (d) To assess implications for the future of agrarian folk culture and cultural identity in Assam.
- (e) To formulate evidence-based recommendations for documentation and conservation.

4. Methodology

4.1 Research Design and Study Area

A sequential mixed-methods design was employed, integrating quantitative survey data with qualitative field methods. Five districts of Assam Lakhimpur, Dhemaji, Dibrugarh, Majuli, and Sonitpur were selected by purposive criterion sampling to achieve: (i) collective representation of the major ethnic communities of Assam; (ii) variation in degree of urbanisation and infrastructure; and (iii) diversity of agro-ecological conditions, ranging from alluvial plains and riverine island to floodplain and foothill zones. Within each district, development blocks were selected purposively; 32 study villages were identified by systematic random sampling within blocks.

4.2 Data Collection

Four complementary data-collection methods were used in combination at each study site. (i) Structured questionnaire survey: Three age-differentiated instruments (below 25, 25–50, above 50 years) covered all eight dimensions of agrarian folk culture. Items combined closed and open-ended formats; instruments were pre-tested in two pilot villages and revised before fieldwork. Administration was in Assamese, Mising, or Bodo as appropriate. A total of 450 respondents were surveyed, stratified by district, community, gender, and age group, with equal

male–female representation. (ii) In-depth interviews: Ninety-six semi-structured interviews were conducted with key informants elderly farmers, traditional healers, seed custodians, folk singers, ritual specialists, and local historians purposively selected for their specialised cultural knowledge. Interviews were audio-recorded with consent, transcribed, and translated. (iii) Focus group discussions: Eighteen focus groups (8–12 participants each, homogeneous by gender and age) explored community-level perceptions of cultural change and collective cultural memory. (iv) Participant observation and transect walks: Extended observation was carried out at agricultural rituals, Bihu celebrations, and community events across multiple seasonal visits.

4.3 Data Analysis and Ethics

Quantitative survey data were analysed using IBM SPSS Statistics 26 (descriptive statistics and chi-square tests of association). Qualitative data were subjected to thematic analysis following Braun and Clarke (2006), with triangulation across data sources and member-checking in five villages. Informed consent was obtained from all participants, and the research protocol was reviewed and approved by the Institutional Ethics Committee, North Lakhimpur University.

5. Agrarian Folk Culture of Assam: Contextual Overview

The agrarian folk culture of the study area encompasses eight major dimensions. As demonstrated in Table 3, the dimensions range from material technology (implements) through expressive culture (songs, attire) to knowledge systems (folk beliefs, indigenous medicine), and the current status of each dimension varies from partial retention in the case of festivals to near-extinction in the case of spontaneous oral tradition a gradient that reflects differential rates of economic and social disruption across cultural domains.

Table 3: Eight Dimensions of Agrarian Folk Culture in Assam: Components and Current Status

Dimension	Primary Components	Current Transformation	Status
1. Agricultural Implements	Nanggal (plough), yuuli (yoke), moi (harrow), kaachi (sickle), dheki (rice husker), japi (field hat), biriya (carrying pole)	Tractor, power tiller, mechanical rice mill, plastic raincoat have substantially displaced traditional counterparts	Rapid decline
2. Festivals & Ceremonies	Three Bihus (Bohag, Kaati, Magh); Ali Ai Lrigang (Mising); Baisagu (Bodo); Lakhimi Sabah; Dangoriya Sabah; gooch rowa; hal-jora	Festivals retained externally; agricultural content substantially eroded; smaller ceremonies near-extinct	Partial retention

Dimension	Primary Components	Current Transformation	Status
3. Beliefs & Ecological Knowledge	Dak-er bachan (proverbs); bhekuli biya (rain-invocation); phenological indicators; propitious-day systems	Agricultural timing now based on agro-met advice; folk belief system largely abandoned by below-25 cohort	Severe erosion
4. Folk Language	Specialised vocabulary for rice phenology, implement names, farm operations, and heritage seed varieties	Vocabulary recognition below 18% in below-25 cohort; implement terminology virtually unknown to under-35s	Severe erosion
5. Songs & Oral Tradition	Bihu geet (spontaneous), husori, harvesting songs, Lakhimi Sabah ritual compositions, wedding songs (biyanam)	Spontaneous agricultural composition ceased; surviving songs performed only in formal staged contexts	Near-extinct
6. Attire	Muga silk mekhela-chaddar, gamusa-turban, japi; community-specific textiles (Mising: ribi-gacheng; Bodo: dokhna)	Commercial garments dominant in daily use; traditional attire retained mainly for formal festival performance	Moderate decline
7. Folk Food	Heritage rice varieties; pitha (rice cakes); chira, akhoi, aapong (Mising rice beer); namching; Bodo insect/snail preparations	82% of below-40 households rarely make traditional pitha; heritage varieties displaced by high-yield types	Rapid decline
8. Indigenous Medicine	Plant-based naturalistic pharmacopoeia (100+ species); magico-religious healing; bej (traditional healers)	Knowledge concentrated in aging cohort; transmission via domestic/community channels has largely ceased	Critical risk

Note. Status ratings are qualitative assessments derived from field observation and survey data across 32 study villages. "Rapid decline" = widespread generational discontinuity; "Severe erosion" = knowledge largely lost from below-25 cohort; "Near-extinct" = no active transmission observed; "Critical risk" = knowledge concentrated in small aging cohort; "Partial retention" = external forms retained, agricultural content substantially diminished; "Moderate decline" = traditional practice declining but not yet critically threatened.

This cultural complex is extensively documented in Rajkhowa (2019), Goswami (1960), Pegu (2005), Baghlari (2003), and Sarma (1991), and constitutes the baseline against which the transformations described in Section 6 are assessed.

6. Results: Dimensions of Transformation

6.1 Agricultural Implements

Draught-animal-based tillage has been substantially replaced by the power tiller (pawor tilar) and, less commonly, the tractor. As shown in Table 2, the productivity differential between traditional bullock tillage and the modern power tiller is approximately 9:1 a gap that constitutes the primary economic driver of mechanisation adoption in the study area and, by extension, of the cultural losses that accompany it.

Table 2: Comparative Tillage Productivity and Cultural Significance in the Study Area

Tillage Method	Productivity (Approx.)	Relative Ratio	Cultural / Practical Note
Traditional Bullocks (pair)	1–2 kathha per hour	1×	High cultural and ritual significance; forms core of Bihu goru bihu ceremony
Modern Power Tiller	2–3 bigha per hour	~9×	Cheapest mechanised option; most prevalent in study area due to suitability for small plots
Tractor	3–4 bigha per hour	~12×	Highest output; adoption limited by cost and plot fragmentation

Note. Productivity figures are approximate averages derived from field informant accounts and are consistent with estimates in Rajkhowa (2019). Kathha and bigha are traditional units of land area used in Assam; 1 bigha ≈ 14.4 kathha (approximately 0.134 hectare).

The ~9:1 productivity differential creates compelling economic incentives for mechanisation even among smallholders. As draught animals have declined, the cultural complex built around them has contracted sharply. In a vocabulary recognition exercise, fewer than 12% of respondents below 35 could correctly identify all five components of the traditional nanggal

implement system, compared with 94% of respondents above 55. Other significant displacements include: the dheki (rice husker) by mechanical rice mills (used exclusively by the below-40 cohort); the lahi (bamboo watering vessel) by diesel and electric pumps; the japi (bamboo field hat) by plastic raincoats; and bamboo baskets and winnowing trays by plastic equivalents.

6.2 Festivals and Ceremonial Practices

A consistent pattern of cultural detachment retention of festival forms alongside progressive loss of agricultural content is observed across all study communities. The Bohag Bihu is widely celebrated but the goru bihu rites at its agricultural core show marked decline. Smaller agricultural ceremonies show steeper decline: the hal-jora is observed by fewer than 15% of farming households; the gooch rowa, naangal tola, and associated rites by fewer than 10%; the Lakhimi Sabah and Dangoriya Sabah by fewer than 20% of households (predominantly above-50 cohort). The bhekuli biya (rain-invocation frog-marriage ceremony) is effectively extinct no informant below age 60 had witnessed it. Among the Mising, the Ali Ai Lrigang retains social vitality but has been largely decoupled from actual sowing; the Porag festival is now held every seven to ten years in most Mising communities, versus the traditional three to four years. Bihu performance itself has shifted from spontaneous courtyard performance to staged competitive events with corporate sponsorship, electronic amplification, and prizes including motor scooters and refrigerators.

6.3 Folk Beliefs and Ecological Knowledge

The agricultural folk-belief system is in marked decline among younger cohorts. The ecological knowledge encoded in the dak-er bachan corpus plant and animal behaviour as agricultural indicators, observation-based timing systems, and the plant-analogy logic of the gooch rowa ceremony is well known to older informants but largely unfamiliar to younger ones. Agricultural timing decisions in the below-40 cohort are now predominantly based on agrometeorological advice via radio and mobile phone rather than traditional observation.

6.4 Folk Language and Oral Tradition

The specialised agricultural vocabulary of the Assamese language is declining rapidly. In a vocabulary recognition exercise (12 standard agricultural folk-vocabulary terms), fewer than 18% of below-25 respondents correctly defined five or more terms, compared with 89% of above-50 respondents. Spontaneous composition and performance of agricultural folk songs has substantially ceased: no informant below 40 in any study village reported composing or hearing spontaneous agricultural bihu geet in a work context within the previous five years. Ceremonial song traditions Lakhimi Sabah songs, women's harvesting songs, husori compositions are known only to small cohorts of elderly community members and are no longer being transmitted.

6.5 Attire, Folk Food, and Indigenous Medicine

Traditional agricultural attire has been substantially displaced: male cultivators below 40 universally wear commercially produced garments in the field; the japi has been replaced by the plastic raincoat for practical farming, though retained as a cultural symbol at festivals.

Heritage rice varieties have been substantially replaced as primary food crops by commercially distributed high-yield varieties. Traditional pitha preparation at home has declined sharply. Indigenous medicine knowledge is concentrated in a declining elderly cohort; its transmission through normal community and domestic channels has substantially ceased in most study villages.

As demonstrated in Table 1, generational discontinuity is most severe in the domain of folk beliefs (78% of below-25 respondents identified beliefs inherited but not practised, $\chi^2=91.2$, $p<0.001$) and agricultural festivals (67% goru bihu non-observance, $\chi^2=87.4$, $p<0.001$), while the vocabulary recognition data though not chi-square tested show an equally stark pattern across folk language. Together, these figures point to a structural rupture in cultural transmission rather than a gradual evolutionary drift.

Table 1: Generational Discontinuity in Agrarian Cultural Knowledge and Practice across Five Dimensions

Dimension	Metric Measured	Younger Cohort	Older Cohort	Chi-Square	Sig.
Agricultural Implements	Correct identification of all 5 nanggal components	< 12% (Below 35)	94% (Above 55)	Not applicable†	
Festivals & Rituals	Households not observing goru bihu in preceding year	67% (Below 25)	12% (Above 50)	$\chi^2= 87.4$ df=2	p<0.001
Folk Beliefs	Beliefs inherited but not personally held/practised	78% (Below 25)	23% (Above 50)	$\chi^2= 91.2$ df=2	p<0.001
Folk Language	Recognition of 5+ of 12 standard folk-vocabulary terms	< 18% (Below 25)	89% (Above 50)	Not applicable†	
Folk Food	Households rarely/never making traditional pitha at home	82% (Below 40)	19% (Above 55)	$\chi^2= 76.8$ df=2	p<0.001

Note. Younger cohort age boundaries vary by dimension as shown; older cohort comparisons are consistent at above-50 or above-55 years. Chi-square tests were conducted using IBM SPSS Statistics 26. (*) Chi-square not reported for vocabulary recognition and implement identification metrics as these were administered as qualitative assessment exercises rather than

binary survey items; differences are nonetheless highly marked. All reported chi-square values significant at $p < 0.001$, $df = 2$.

7. Discussion: Determinants of Transformation

The transformation documented across all eight dimensions of agrarian folk culture is produced by three interacting categories of determinants. As presented in Table 4, each determinant category generates distinct but overlapping cultural effects economic forces displace material practices, educational forces erode belief systems, and social forces disrupt transmission mechanisms and each correspondingly demands a different class of policy response.

Table 4: Tripartite Framework of Cultural Transformation Determinants

Category	Key Drivers	Illustrative Effects (Study Area)	Policy Response Needed
Economic	~9:1 productivity advantage of mechanisation; market penetration of commercial food, garments, and medicine	Displacement of draught cattle; abandonment of home pitha-making; substitution of commercial mehendi for jetwka	Subsidy policies for mechanisation; premium markets for heritage produce and handloom textiles; agro-cultural tourism
Intellectual-Educational	Scientific rationalism taught in schools; expansion of university and research infrastructure; digital media and smartphones	Decline of folk-belief system; agricultural timing shifted from dak-er bachan to agro-met advice; Bihu commercialised via TV	Curriculum integration of agrarian folk culture; community-based digital documentation; media literacy programmes
Social	Household nuclearisation; youth out-migration; changing gender roles; festival commercialisation	Loss of intergenerational transmission of rituals, songs, and medicines; depletion of young	Community cultural maintenance grants; women's self-help groups as cultural custodians; diaspora engagement programmes

Category	Key Drivers	Illustrative Effects (Study Area)	Policy Response Needed
		participants in ceremonies	

Note. Policy responses are recommendations derived from the field evidence; they are not descriptions of currently existing programmes except where noted in Section 8.

7.1 Economic Determinants

Before examining each determinant in detail, it is important to situate the findings within the theoretical frameworks introduced in Section 2. Redfield's (1956) concept of the 'Little Tradition' anticipated precisely the kind of vulnerability documented here: when the material conditions that sustain folk culture in this case, smallholder agriculture based on traditional implements, heritage seeds, and communal ritual are disrupted by contact with modernising forces, the cultural forms generated by those conditions lose the practical grounding that gives them meaning and ensures their transmission. The transformation of goru bihu from a living agricultural ritual into an optional ceremonial gesture, or of bihu geet from a spontaneous work song into a competition item, exemplifies this process exactly.

Appadurai's (1996) framework of global mediascapes and technoscapes is equally illuminating. The present study's finding that 88% of study-area households now own smartphones and that television programming shapes the competitive format and calendar of Magh Bihu confirms Appadurai's argument that electronic media do not merely transmit cultural change from outside but actively reconstruct local cultural practice from within. Scott's (1998) concept of 'metis' sharpens the analysis further: what is being lost is not merely aesthetic or sentimental heritage, but an embodied, context-specific form of practical intelligence ecological knowledge encoded in folk beliefs, agronomic knowledge encoded in the dak-er bachan corpus, pharmacological knowledge encoded in indigenous medicine whose value extends beyond culture into food security and climate adaptation.

Economic imperatives constitute the most powerful proximate drivers of cultural change. The ~9:1 productivity differential between mechanised and traditional tillage (Table 2) creates compelling incentives for mechanisation even among smallholders. The broader commercialisation of agriculture has reduced the economic centrality of the traditional knowledge systems that supported subsistence-oriented cultivation. Simultaneously, the market availability of cheaper commercial substitutes for traditional cultural products synthetic garments, mechanically processed food, commercial medicines has systematically displaced traditional alternatives through accumulated small economic decisions rather than deliberate cultural choice. As Rajkhowa (2019) documents in the primary field study on which the present paper builds, these economic pressures are experienced most acutely by smallholders operating on the margins of viability, for whom the costs of maintaining traditional practices are felt most directly.

7.2 Intellectual-Educational Determinants

Formal education systematically inculcates a scientific-rationalist worldview that is in tension with the cosmological premises of the agricultural folk-belief system. The expansion of Assam's educational and research infrastructure from Cotton College (1901), Gauhati University (1948), and Assam Agricultural University (1969), to the network of regional agricultural research stations documented by Mazumdar (2015) and Misra, P. (2010) has created a large population of scientifically educated citizens for whom traditional folk practices carry diminishing cognitive authority. The proliferation of smartphones (now in 88% of study-area households) has dramatically accelerated this process. Television has transformed Bihu performance from a locally embedded communal practice into a staged spectacle promoted through competitive programming, as both Rajkhowa (2019) and the field data of the present study document.

7.3 Social Determinants

Social change has disrupted the transmission mechanisms through which folk cultural knowledge has historically been reproduced. The progressive nuclearisation of Assamese households has disrupted intergenerational domestic transmission of craft skills, ritual knowledge, and traditional food practices. Youth out-migration has depleted many study villages of the age cohort whose participation is essential for communal agricultural ceremonies and folk arts. The three determinant categories interact and reinforce one another: economic pressures accelerate out-migration; formal education reinforces scientific rationalism; social fragmentation weakens the communal infrastructure for cultural reproduction.

8. Future of Agrarian Folk Culture: Risks and Possibilities

The generational data in Table 1 are the most alarming finding of this study: across virtually every dimension of agrarian folk culture, cultural knowledge is sharply concentrated in the above-50 cohort and largely absent from the below-25 cohort. This discontinuity indicates that spontaneous cultural recovery, without deliberate intervention, is unlikely. The ecological knowledge embedded in Assamese agrarian folk culture including the genetic diversity of heritage seed varieties, the pharmacological knowledge of the indigenous medicine tradition, and the ecological indicators encoded in folk beliefs carries practical value for climate adaptation and agrobiodiversity conservation (Zimmerer & de Haan, 2017) that further strengthens the case for urgent action.

Several positive tendencies moderate the picture. Heritage seed conservation initiatives by civil society organisations in Lakhimpur and Dhemaji districts, the growing use of YouTube and social media by community members to document and disseminate traditional cultural knowledge, the premium market development for handloom Assamese textiles, and the Assam government's periodic support of Bihu cultural programmes all represent existing platforms that could be developed. Three priorities emerge from the evidence: first, systematic documentation video, audio, and botanical recording of endangered knowledge before its bearers pass; second, curricular integration the incorporation of local agrarian cultural content into formal and non-formal education; and third, economic incentivisation premium markets

for heritage varieties and traditional crafts, agro-cultural tourism, and community cultural maintenance grants (see Table 4, column 4 for full policy recommendations by determinant category).

9. Conclusion

This study has documented the systematic and accelerating transformation of agrarian folk culture across five districts of Assam. All eight dimensions examined show consistent patterns of decline in traditional content and generational discontinuity in knowledge transmission, as summarised in Tables 1, 3, and 4. The transformation is driven by interacting economic, intellectual-educational, and social forces that are, in most respects, irreversible. The task is therefore not to resist change but to manage it in ways that preserve what is most valuable and most endangered. The window for documentation is narrowing; the generation that carries living knowledge of Assam's agrarian folk culture in its fullness is aging rapidly. This paper is offered as a contribution to the scholarly foundation that makes effective conservation action possible, and as a resource for the researchers, policymakers, and community members who must carry that action forward.

Declarations

Author Contributions: Conceptualisation, M.D. and D.P.; Methodology, M.D. and D.P.; Field Investigation, M.D.; Formal Analysis, M.D.; Writing original draft, M.D.; Writing review and editing, D.P.; Supervision, D.P. Both authors have read and agreed to the published version of the manuscript.

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Data Availability Statement: The data supporting the findings of this study were collected as part of a UGC-sponsored Major Research Project. Anonymised aggregate data are available from the corresponding author on reasonable request. Individual interview transcripts and focus group recordings are not publicly available in order to protect the privacy of participants, consistent with the consent provided.

Ethics Statement: This study was conducted in accordance with the ethical guidelines of North Lakhimpur University. The research protocol was reviewed and approved by the Institutional

Ethics Committee, North Lakhimpur University. Informed consent was obtained from all participants prior to data collection. Participation was voluntary and participants were assured of their right to withdraw at any time without consequence. All personal information has been anonymised.

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