

Disaster Communication and Climate Resilience

The Role of Regional Media in Public Preparedness in Telangana

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Abstract—This review assesses how regional media may contribute to public preparedness and climate resilience in Telangana, distinguishing direct state-specific evidence from Indian and South Asian comparisons. The literature suggests that communication operates through a chain: locally meaningful risk information must be translated and disseminated through usable channels, trusted by audiences, interpreted as actionable, and supported by resources and collective capacity. The strongest Telangana evidence is about climate-risk perceptions and agricultural information use rather than disaster preparedness outcomes. Studies in Adilabad and dryland districts identify mass media exposure as relevant to farmers' climate knowledge and perceptions, while a Zaheerabad study finds community media and NGO campaigns more salient than mass or social media for climate-action communication. Hyderabad newspaper research and a recent multilingual heatwave analysis also expose gaps between local-language coverage of weather extremes and explicit climate explanation. Indian cyclone and flood studies, and a stronger mixed-method community-radio study in Bangladesh, make plausible the contribution of local-language and trusted communication to protective action, but they do not establish a Telangana-specific media effect. The evidence therefore supports regional media as a potential preparedness partner—not a stand-alone cause of resilience. The principal research need is longitudinal, district-level evaluation linking actual media exposure and message qualities to verified protective behaviours, while measuring access and differences across language, gender, age, livelihood and connectivity.

Index Terms—Component, formatting, style, styling, insert. (Key words)

I. INTRODUCTION: DEFINING THE PROBLEM AND THE FIELD

Regional media matter to disaster preparedness not simply because they transmit warnings, but because they connect risk information to local knowledge, available resources and the actions residents can take. Early work framed mass communication as central to public education, early

warning, evacuation and relief coordination, and argued for closer working relationships among journalists, researchers and disaster practitioners.(Rattien, 1990) Later resilience scholarship broadened the role from one-way message delivery to reciprocal communication: communities need information, while agencies need feedback about needs, barriers and local conditions.(Nicholls, 2012) Disaster communication is therefore best understood as part of a wider social system, not as a direct media-to-behaviour effect.(Houston et al., 2014)

In Telangana, this issue intersects with semi-arid agriculture, heat and rainfall variability, and differing urban, rural and livelihood exposures. A survey of 240 farmers in four dryland districts found that 41.66% had medium, 33.33% high and 25% low levels of climate-change perception; reported concerns included drought, irregular rainfall, delayed monsoons, rising temperatures, water availability and farm profitability.(Afshan Jabeen, 2026)

A separate content analysis of Indian news items about the 2022 heatwave found climate change mentioned in 14% of English-language coverage and under 10% of Telugu, Hindi and Marathi coverage; emergency response, planning and vulnerability were also recurring themes.(Thaker et al., 2024) These findings matter for preparedness because the public must connect immediate weather or hazard information with locally relevant risk and feasible action. They do not, by themselves, demonstrate that media coverage changes behaviour.

This review follows the communication-to-action sequence: (1) how climate risk is made locally legible; (2) how regional and community media extend warning reach and trust; and (3) when information becomes preparedness, adaptation and resilience. It then compares the study designs, identifies Telangana-specific gaps, and derives an evidence-calibrated conclusion. “Regional media” here includes Telugu-language newspapers and broadcasting, local newsrooms, community radio, and regionally grounded digital communication; these channels are considered alongside interpersonal and institutional messengers because the studies show that audience response is shaped by networks, not platforms alone.

A dated shift is visible in the literature. Rattien’s foundational 1990 account placed media in hazard education, early warning and evacuation.(Rattien, 1990)

A 2009 east-coast India cyclone study shifted attention from receipt of a warning to how people perceive and evaluate it.(U. Sharma et al., 2009)

Hyderabad newspaper research later examined whether local reporting connected weather extremes to climate change.(Reußwig & Meyer-Ohlendorf, 2012) A 2014 review of broadcast preparedness education emphasized that awareness must be joined to motivation, resources and community interaction.(Romo-Murphy & Vos, 2014)

By the 2020s, Indian analyses increasingly examined event attribution, local-language coverage, digital advisories and community radio, extending the question from channel reach to message quality, participation and action.(Bhagat et al., 2022; Kanjilal et al., 2024; Painter et al., 2020; Thaker et al., 2024)

II. RESEARCH METHODOLOGY

The review cites 31 distinct works and gives priority to empirical work in Telangana and India, using South Asian and wider comparative research to assess mechanisms rather than to estimate effects for Telangana. The evidence base available for this synthesis consists of abstracts and indexed excerpts rather than full-text articles; method details and findings not stated there are not inferred. Relevant state-specific studies were relatively few and tended to measure awareness, perceptions or agricultural information use, rather than actual household disaster-preparedness outcomes.

III. MAKING CLIMATE RISK LOCALLY LEGIBLE

The first question is whether regional media help audiences recognize climate risk as something connected to their place, livelihood and everyday decisions. The challenge is twofold: a hazard report may convey an immediate event without explaining longer-term climate context, while abstract climate language may fail to signal what action a local household or farmer can take. Indian climate-communication synthesis has described this tension: public recognition of changing local weather may coexist with low familiarity with “climate change” as a concept, and local experience can provide a more compelling entry point than global-scale explanations. (Thaker, 2017)

The Telangana evidence supports the importance of that local entry point, though not yet a tested media effect. A 2026 exploratory quantitative study in Zaheerabad found widespread recognition of climate change but limited exposure to climate-action concepts. Respondents emphasized locally tailored content, local challenges and solutions, dialect, local leaders and community storytelling; community media and NGO campaigns were identified as more prominent sources of climate-action communication than mass or social media. (Anilkumar Sirasani, 2026) The study is directly useful for designing communication but the available abstract does not report the sample size or a behavioral outcome, so it cannot establish whether those preferences translated into preparedness or adaptation.

Earlier Hyderabad newspaper analysis examined two English-language and three Telugu-language dailies and interviewed two journalists. It found frequent reporting of weather extremes but little linkage between local extremes and global climate change; the authors also noted the short observation period and called for research on audience effects. (Reußwig & Meyer-Ohlendorf, 2012)

A separate analysis of 309 Indian heatwave news items found that climate links appeared in only 14% of English coverage and under 10% of Telugu, Hindi and Marathi coverage. It also reported that two event-attribution studies were widely cited but sometimes inaccurately. (Thaker et al., 2024) Together, these content analyses show a gap between reporting weather or heat events and explicitly explaining climate links in those sampled outlets. They do not show that every regional outlet omits climate context, nor do they measure what readers learned.

The language issue is also a question of whose knowledge and concerns become visible. A Sundarbans comparison of vernacular and English-language media argues that English-language analyses alone risk missing local interpretations in vulnerable communities; its approach began with the local socioecological setting rather than searching only for the phrase “climate change.” (Ghosh & Boykoff, 2019) A South India reporting handbook similarly emphasizes scientific accuracy and sustained coverage of slow-onset risks such as drought, which receive less attention in fast-turnaround news. (Arasu & Kumar, 2021) Regional news is not automatically local in the substantive sense: it can use the language of a region while retaining distant frames, episodic coverage or elite sources. The evidence therefore supports place-based Telugu climate communication as a plausible and locally desired strategy, but whether it improves risk understanding or protective action in Telangana remains untested in the retrieved studies.

IV. CHANNELS, WARNING REACH AND TRUST

The second question is how regional media work alongside other channels to make warnings accessible and credible. Early-warning systems are often described as a chain linking risk knowledge, monitoring, dissemination and response capability; a failure in clarity, access or trust can prevent a warning from becoming action. (Marsh et al., 2024) In India, a system description reports an architecture combining mobile alerts, cell broadcast, radio, television, satellite, internet and public-address channels, with support for more than 22 regional languages and use across all states and union territories. (S. Sharma et al., 2024) This demonstrates the breadth of the described infrastructure, not whether every household in Telangana receives, understands or acts on a specific alert.

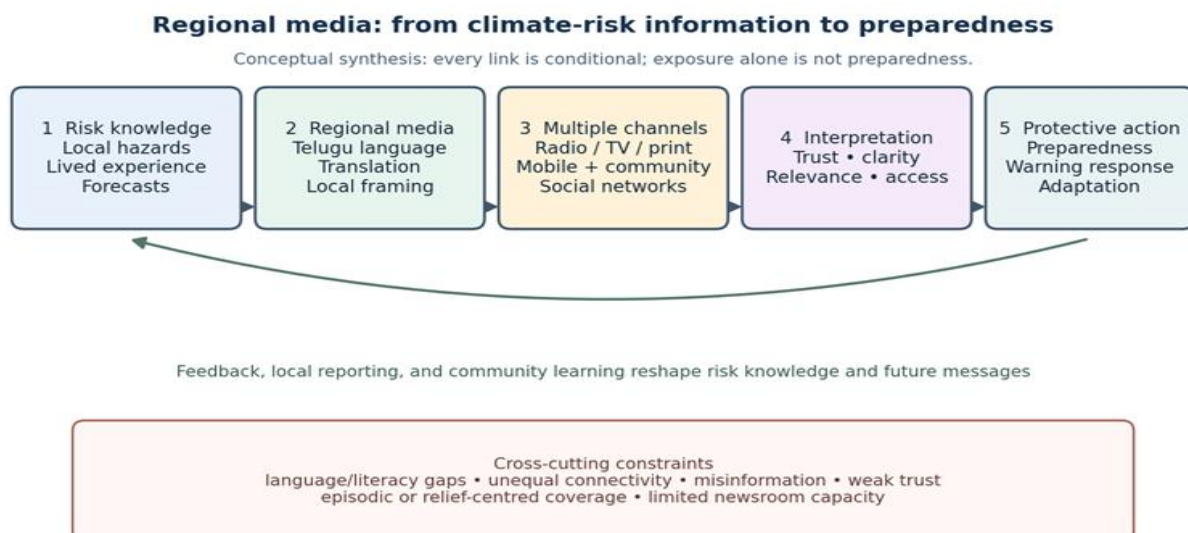
Indian studies show why channel choice cannot be reduced to “traditional versus digital.” In a South Indian survey in Cuddalore, both broadcast and narrowcast technologies were used for cyclone warnings; media access and perceived effectiveness were positively associated with community response, while age and education were related to disaster knowledge. (Kuppuswamy, 2014) In Adilabad, a survey of 120 farmers found moderate knowledge of agrometeorological parameters and identified television, radio, agricultural officers and progressive farmers as useful information sources; education and scientific orientation contributed to knowledge levels. (Kumar et al., 2015) For Telangana farm adaptation, an assessment of mobile FarmPrecise advisories for paddy in Narayanpet during the 2020–21 Kharif and Rabi seasons reported usefulness for weather-based decisions, but also noted that community capacity-building and colloquial-language messages would be needed for uptake. (Bhagat et al., 2022) These studies suggest complementarities: digital delivery can be timely and specific, while radio, television, extension officers and local networks can make information available and intelligible to people with different access and literacy conditions.

Trust and social relationships further condition channel performance. Field surveys in two flood-affected Mumbai slum communities found that higher trust in information sources was associated with greater risk awareness and acceptance of preventive measures; respondents relied on local

authorities for perceived expertise but regarded mass media as especially attentive to community interests.(Samaddar et al., 2012) An exploratory study of cyclone-warning response on India's east coast found that receipt of a warning was not sufficient: risk perception and the evaluation of response options shaped evacuation behaviour.(U. Sharma et al., 2009) A mixed-method study in cyclone-prone coastal Bangladesh offers adjacent, stronger quantitative evidence. It surveyed 430 households and found lower cyclone-related economic loss among community-radio listeners than non-listeners ($z = 3.11$, $p = 0.003$); local-dialect warnings were associated with greater message clarity and reliability.(Ahsan & Khatun, 2020) The latter uses economic loss as a proxy for preparedness and is observational, so the difference cannot be attributed to radio alone. Taken together, these studies support a conditional claim: locally intelligible channels and trusted intermediaries can improve the chances that a warning is noticed and evaluated, but channel exposure is only one element in response.

Community media offer a particular bridge between broadcasting and participation. Two Odisha community-radio station cases during Cyclone Yaas describe community organizations using radio to support early warning, preparedness, response and recovery, with local social relationships facilitating participation.(Kanjilal et al., 2024) Case-study evidence from Odisha also describes media's role in awareness, displacement and rehabilitation after the 1999 super cyclone, but does not isolate media's independent contribution to the reported "zero casualty" goal.(Nahak, 2021) The relevant lesson for Telangana is not to assume that community radio or district-level news has the same effect in an inland state, but to test local intermediaries and partnerships against actual communication access and preparedness needs.

Figure 1: Regional Media Exposure to Climate-risk



Conceptual pathway from locally grounded risk knowledge through regional-media translation, multiple channels and audience interpretation to protective action. The conditional links synthesize evidence on local climate messaging, trust, warning response and community

communication.(Anilkumar Sirasani, 2026; Marsh et al., 2024; Samaddar et al., 2012; U. Sharma et al., 2009)

V. FROM AWARENESS TO PREPAREDNESS AND CLIMATE RESILIENCE

The third question is whether better communication changes preparedness beyond knowledge or awareness. Preparedness involves actions and capacities—such as moving to safety, protecting assets, adopting climate-resilient practices or coordinating with neighbors—not simply seeing a story or receiving an alert. Indian newspaper analysis of the 2013 Uttarakhand floods found that four widely read English dailies focused largely on rescue and response, with much less attention to preparedness, mitigation and pre-event education.(Giri & Vats, 2018) Analysis of 11 newspapers covering Cyclone Amphan found a similar relief-centred frame: personal accounts foregrounded vulnerable people, but coverage presented the disaster as “natural” and tended to privilege response and recovery over prevention, infrastructure and climate adaptation.(Parida et al., 2021) These studies identify a journalistic agenda problem, not an audience effect. Their combined implication is that visibility during a disaster can support urgent relief while still leaving the longer preparedness cycle under-covered.

Audience studies offer a more direct but still qualified picture. In a survey of 688 people in Hangzhou, China, media exposure was positively related to risk perception and preparedness behaviours; risk perception mediated the relationship between media exposure and cooperation, and prior disaster experience changed the strength of some relationships.(Hong et al., 2019) In a nationally representative Indian survey, media use and trust in information sources were examined in relation to global-warming beliefs, risk perceptions and policy support; the authors concluded that consistent, accurate reporting through trusted sources could increase public engagement.(Thaker et al., 2017) Neither abstract establishes that exposure alone caused action, and the Indian survey addresses climate engagement rather than household disaster readiness. A US survey experiment comparing local and national newspaper coverage found that local newspaper climate coverage increased climate-mitigation willingness among Republican participants, while local coverage of a regional hurricane was received more positively.(Andrews et al., 2023) This experimental evidence supports a possible local-source mechanism, but the political context and outcome are not directly transferable to Telangana.

The action gap is also evident in studies of farming and advisories. In dryland Telangana, farmers’ mass-media exposure was among the socio-economic and informational factors associated with climate-risk perceptions, but the cross-sectional design does not establish whether exposure caused perception or whether more informed farmers sought more media.(Afshan Jabeen, 2026) In Suryapet and Khammam, a study of 200 farmers found that mass-media exposure, education, access to water and other factors were associated with attitudes toward climate-resilient agricultural technologies under the NICRA project.(Naik et al., 2024) The Narayanpet advisory study further

suggests that mobile advisories can support farm-level climate decisions, while explicitly identifying the need for community training and colloquial communication to encourage uptake.(Bhagat et al., 2022) This body supports integrating regional media with extension systems and local capacity-building, but it does not support a claim that media alone produces adoption or resilience.

There are plausible pathways from coverage to action: messages can build knowledge and perceived risk; trusted sources and social norms can make action seem feasible and expected; local networks can relay, verify and adapt advice. Flood-risk communication modelling found that people-centred communication including practical protective advice could outperform generic top-down information in simulated preparedness, even when it reached fewer people.(Haer et al., 2016) A multi-country climate-risk communication study that included India emphasized locally relevant language and co-generated knowledge as foundations for shared understanding and collective action.(Padgham et al., 2013) Evidence from the 2017 Bihar floods likewise describes radio-delivered health and sanitation information and psychosocial content as part of a broader communication response, based on 449 face-to-face citizen interviews; the authors stressed pre-disaster coordination and resilient communication infrastructure.(Anand & Romo-Murphy, 2022) These sources converge on meaningful design and social support, but differ substantially in method and outcome: modelled responses, qualitative case findings and survey associations should not be treated as a single causal estimate.

For Telangana, the safest overall judgment is that regional media can contribute to preparedness when it connects hazard and climate information to actionable local advice, travels through channels people use, and is reinforced by trusted institutions and community networks. Whether the effect is larger for Telugu than English communication, for radio versus mobile advisories, or for particular social groups has not been established by the evidence reviewed here.

VI. COMPARISON OF METHODS AND STRENGTH OF EVIDENCE

The evidence forms three tiers. First, direct Telangana studies measure climate perceptions, information sources and technology attitudes among farmers or local communities. These provide the most geographically specific evidence in this review, but most use cross-sectional or exploratory designs and report associations rather than causal impacts.(Afshan Jabeen, 2026; Kumar et al., 2015; Naik et al., 2024) Second, media-content analyses in Hyderabad and across Indian language press measure what news outlets say, not what audiences understand or do.(Giri & Vats, 2018; Parida et al., 2021; Reußwig & Meyer-Ohlendorf, 2012; Thaker et al., 2024) Third, comparative surveys, experiments and community cases illuminate mechanisms such as local-language clarity, trust, social networks and tailored protective advice, but require caution when transferred across hazard regimes and institutional settings.(Ahsan & Khatun, 2020; Andrews et al., 2023; Haer et al., 2016; U. Sharma et al., 2009)

Table 1 Comparative Literature Analysis

Study and setting	Design/sample stated in abstract	What it contributes—and what it cannot establish
Hyderabad newspaper analysis (Reußwig & Meyer-Ohlendorf, 2012)	Content analysis of 2 English and 3 Telugu daily newspapers; 2 journalist interviews	Frequent weather extremes but limited climate linkage; measures reporting, not audience response.
Adilabad, Telangana (2015)(Kumar et al., 2015)	Survey/knowledge test, 120 farmers	TV, radio, agricultural officers and progressive farmers were useful sources; education and scientific orientation related to knowledge. Cross-sectional.
East coast India cyclone warning (2009)(U. Sharma et al., 2009)	Exploratory warning-response study; sample not given in abstract	Highlights risk perception and evaluation in evacuation decisions; warns against treating message receipt as sufficient.
Cuddalore, Tamil Nadu (2014)(Kuppuswamy, 2014)	Survey; sample not given in abstract	Broadcast/narrowcast access and perceived effectiveness positively related to response; age/education related to knowledge.
Coastal Bangladesh (2020)(Ahsan & Khatun, 2020)	Mixed methods; 430 households, regression and qualitative material	Local-dialect community-radio listening associated with lower economic losses; observational proxy, not causal assignment.
Dryland Telangana (2023–24)(Afshan Jabeen, 2026)	Multistage survey, 240 farmers; 24-item perception scale	Documents heterogeneous climate perception and association with mass-media exposure; does not measure media-led preparedness.
Telangana NICRA districts (2024)(Naik et al., 2024)	Ex-post-facto study, 200 farmers	Mass-media exposure associated with technology attitudes alongside education, water access and other factors; not a media intervention trial.
Multilingual heatwave coverage(Thaker et al., 2024)	Media content analysis, 309 news items	Quantifies limited explicit climate attribution in Telugu and other regional-language coverage; no audience measures.
Zaheerabad, Telangana (2026)(Anilkumar Sirasani, 2026)	Exploratory quantitative survey; sample size not in abstract	Community media/NGOs and localized framing were salient for climate-action communication; behavioural impact not reported.
Narayanpet, Telangana (2020–21 advisories; published 2022)(Bhagat et al., 2022)	FarmPrecise mobile advisory assessment; sample size not in abstract	Reports utility for crop-specific decisions and need for colloquial-language messaging and community capacity-building.

The comparison clarifies why a single pooled estimate would be misleading. Studies vary by hazard, population, channel, outcome and design; some count media stories, others survey perceived knowledge or compare self-selected listeners. Even within Telangana, climate perception and agricultural-technology attitudes are not equivalent to flood evacuation, heat protection or household emergency readiness. On this review's own comparison, the Telangana studies are the most geographically direct evidence, while the observational and content-analysis designs offer limited leverage for causal attribution. The evidence is more persuasive for communication as a condition that can support awareness and decision-making than for a claim that regional media independently increases preparedness or resilience.

VII. RESEARCH GAPS

1. Direct preparedness outcomes in Telangana. The state-specific evidence identified here measures climate perceptions, information sources or agricultural attitudes more often than verified preparedness actions.(Afshan Jabeen, 2026; Bhagat et al., 2022; Naik et al., 2024) Future evaluations should track concrete household and livelihood behaviours before and after heat, flood, drought or severe-rainfall events rather than treating awareness as a proxy for preparedness.
2. Causal evaluation of regional-media interventions. The available local evidence is mainly cross-sectional, exploratory or descriptive. A district-level panel, randomized or quasi-experimental campaign evaluation could compare locally tailored Telugu messaging, standard warnings, mobile advisories and combined media-community approaches, while documenting exposure and baseline risk.(Anilkumar Sirasani, 2026; Kumar et al., 2015; Reußwig & Meyer-Ohlendorf, 2012)
3. Audience equity and last-mile communication. Existing findings point to age, education, digital access and language as relevant, but do not map who in Telangana misses warnings or cannot act on them. Evaluation should disaggregate by gender, age, disability, caste/social position, livelihood, literacy, connectivity and district, and include low-tech pathways and feedback from excluded groups.(Bhagat et al., 2022; Kuppuswamy, 2014; Marsh et al., 2024)
4. Journalism quality and the full climate-risk cycle. Hyderabad and the 2022 heatwave content study identify weak or infrequent links between extreme events and climate change; Amphan and Uttarakhand coverage suggest response can crowd out prevention. Longitudinal Telugu-language content analysis should examine source accuracy, actionable advice, uncertainty, local causal context, pre-event education and follow-up, then link these features to audience comprehension.(Giri & Vats, 2018; Parida et al., 2021; Reußwig & Meyer-Ohlendorf, 2012; Thaker et al., 2024)
5. Institutional coordination and trust. The literature points to complementarities among media, local administration, agriculture extension, health workers and community organizations, but the Telangana studies do not yet compare formal and informal messengers systematically.(Anand & Romo-Murphy, 2022; Kanjilal et al., 2024; Samaddar et al., 2012) A Telangana research programme should test misinformation correction, alert consistency, trusted

intermediaries, newsroom-government protocols and community reporting across the disaster cycle.

VIII. CONCLUSION

Literature supports a conditional, not automatic, role for regional media in Telangana's public preparedness. In state-specific farmer studies, mass-media exposure is associated with climate perceptions and attitudes toward climate-resilient agricultural technologies.(Afshan Jabeen, 2026; Naik et al., 2024) The Zaheerabad study identifies locally grounded and community-based climate-action communication as salient; its available abstract does not report behavioural outcomes.(Anilkumar Sirasani, 2026)

In sampled Telugu coverage, Hyderabad and multilingual heatwave analyses show gaps between reporting weather extremes and explaining climate links.(Reußwig & Meyer-Ohlendorf, 2012; Thaker et al., 2024) Indian and neighboring-country warning studies suggest that trust, message clarity, protective advice and local-language delivery matter, but their outcomes cannot be assumed to transfer unchanged to Telangana.(Ahsan & Khatun, 2020; U. Sharma et al., 2009)

Accordingly, regional outlets are best treated as one component of a people-centred preparedness system that combines accurate climate and hazard information, accessible multilingual delivery, community feedback, institutional coordination and feasible action guidance.(Anilkumar Sirasani, 2026; Marsh et al., 2024; Samaddar et al., 2012) The crucial unresolved question is under what locally specific conditions that communication leads different Telangana communities to prepare and adapt. Answering it requires evaluations that measure actual protective behaviour and resilience outcomes rather than stopping at message reach, awareness or stated preference.

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