



## The Role of Media in Weather Communication: A Study of Karnataka and Andhra Pradesh

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### Preamble

Weather forecasting offers multi-faceted benefits to government, civil society, defence forces, industrial organizations, agricultural institutions and mass media. Weather forecasting is a specialized activity which is primarily dependent on technological developments and applications. The use of ensembles and model consensus help narrow the error and pick the most likely outcome. The mass media are widely used to disseminate weather related changes and developments to various end users to weather forecasts. The people use weather forecasts to determine their day to day activities and plan various developmental activities. The present investigation was carried out in Karnataka and Andhra Pradesh states to evaluate the role of media in weather communication.

### Review of Literature

In the age of global warming and climate change, weather forecasting has become a crucial exercise since the economic benefits of more accurate weather forecasts are immense. The subject of weather communication has become an important issue in the present times. Adequate scientific investigations

are required to enrich the status of weather communication in the new millennium. Prominent studies relating to the present topic include – Cowling (1957), Armstrong (1963), Hyatt and Sederstrom (1978), Driscoll (1988), Ayton (1988), Henson (1990), Brooks and Eilts (1997), Westen (2000), Lanzerotti (2001), Brandon (2002), Barnhardt (2003), Cutter (2003), Samarajiva (2004), Vidal (2006), Morss et. al. (2008), Wilson (2008), Doherty and Barnhurst (2009), Giles (2010), Lindell (2011), Yates and Paquette (2011), Chavali et. al. (2013), Zin et al. (2013), Hackbert (2013), Anand and Narayana (2014), Abbasishahkouh (2015), Shilpa (2015), Albuquerque et al. (2015), Byrd (2015), Stein et al., (2015), Kox et. al. (2015), Andrews (2015), Morss et. al. (2017) and Bolton et. al. (2017). The review of literature clearly indicates that not even a single scientific investigation has been carried out in Karnataka and Andhra Pradesh states on the role of media in weather communication.

### Significance of the Study

South India is known for rich cultural and historical legacy in the Indian sub-continent. It is also known as



the natural disaster prone in the Indian sub-continent. Karnataka and Andhra Pradesh have been affected by the natural disasters including climate change. The increasing climate change needs to be addressed seriously by the stakeholders of sustainable development in these two states. The media have a great social responsibility of providing timely and adequate weather communication services in order to safeguard public interest. The review of literature clearly indicates that adequate scientific investigations are not carried out in India on the role of media in the context of changing climate and weather communication. Hence, the study assumes profound academic and social significance.

#### Statement of the Problem

The media have a great social responsibility of sensitizing the policy makers, administrators and other stakeholders of sustainable development. The media provide information, education, advertising, publicity and other services to the people on climate change and other environmental issues and concerns. The media have played a limited role in facilitating collective awareness and action in the age of climate change. The role of media in weather communication with reference to Karnataka and Andhra Pradesh states was considered in the study because:

- a. Karnataka and Andhra Pradesh states have been affected by climate change and other natural disasters.
- b. The media have a great social responsibility in facilitating sustainable development in these two states.

- c. The media provide weather communication services to limited extent.
- d. The role of media in weather communication assumes great significance in these two states.
- e. Tested and tried social media initiatives would go a long way in addressing the issue of the role of media in weather communication in these two states.

#### Objectives of the Study

The present investigation was carried out on the basis of following specific objectives. They include:

- a. To document the development of weather forecasting across the globe.
- b. To understand the status, problems and prospects of weather communication in the media.
- c. To analyze the media use patterns of the respondents.
- d. To examine the media initiatives for weather communication.
- e. To evaluate the strengths and limitations of weather communication in the media
- f. To suggest appropriate media strategies for systematic weather communication in modern times.

#### Theoretical Framework of the Study

The present investigation explored the role of media in weather communication with special reference to Karnataka and Andhra Pradesh states. Multi media approaches are used by the scientific and media institutions for the purpose of weather communication. The role of media in weather communication was examined on the basis of an analysis



of the characteristics of autism spectrum conditions for application to weather communication methods in the weather enterprise in England carried out by Bolton et. al (2017). The advantages and disadvantages of the use of communications media in weather communication were also outlined through a literature review, providing an understanding of recent evaluations of the use of media in weather communication.

### Research Methodology

The major objective of the present study was to understand the role of media in weather communication with special reference to Karnataka and Andhra Pradesh states. The media services were systematically evaluated

from the point of view of weather communication. The present study was planned and conducted in three stages. In the first stage, a pilot study was conducted in order to examine the feasibility and appropriateness of the tools and procedures of the study. In the second stage, interview schedules were developed and perfected in order to collect authentic primary data from the beneficiaries of weather communication in the study areas. In the third stage, appropriate scientific statistical analysis procedures were followed to ensure systematic data analysis and interpretation. Overall, the present study approached the problem through a systematic survey method which fits into the context of the present investigation.

### Distribution of Sample

Name of the State	Name of the District	Study Areas	Study Sample
Andhra Pradesh	East Godavari	Kakinada	46
		Amalapuram	42
	West Godavari	Eluru	40
		Tanuku	36
Karnataka	Dakshina Kannada	Mangalore	38
		Suratkal	36
	Udupi	Malpe	38
		Kota	34
<b>Total</b>	<b>04 Districts</b>	<b>08 Places</b>	<b>308</b>

n=308

### Findings of the Study

#### Demographic Features of the Respondents

- A majority of the study sample represent male respondents (61.69%), younger and middle age

groups (76.95%), graduates' educational group (71.10%), middle income group (51.30%), weather forecasters, weather communicators and civilians groups (82.47%) and Andhra Pradesh (51.90%) respectively in the study sample.



### **Communication Media Association of the Respondents**

- All the respondents (100%) had access to newspapers in the study areas.
- A majority of the respondents (88.31%) had access to magazines in the study areas.
- A majority of the respondents (88.31%) had access to radio in the study areas.
- All the respondents (100%) had access to television in the study areas.
- A majority of the respondents (68.83%) had access to computer in the study areas.
- A majority of the respondents (56.39%) had access to computer with Internet in the study areas.
- All the respondents (100%) have stated that they had access to mobile in the study areas.
- A majority of the respondents (76.62%) had access to mobile with Internet in the study areas.
- All the respondents (100%) had access to cable / satellite connection in the study areas.
- A majority of the respondents (84.42%) had access to social media in the study areas.

### **Perception of the Respondents about Weather Communication**

- A majority of the respondents (77.92%) have stated that weather communication was an essential task encountered by weather forecaster.

- A majority of the respondents (69.48%) have stated that weather communication was a basic need of the people.
- A majority of the respondents (75.0%) have stated that meteorological observation networks had provided weather details.
- A majority of the respondents (73.70%) have stated that scientists constructed weather maps and developed computer models for weather prediction.
- A majority of the respondents (80.84%) have stated that modern computers and weather satellites were the principal tools of weather communication.
- A majority of the respondents (73.05%) have stated that satellites provided precise data about environmental variables and weather conditions.
- A majority of the respondents (76.30%) have stated that the potential economic benefits of more accurate weather forecasts were immense.
- A majority of the respondents (65.91%) have stated that the digital database forecasting provided the capability to meet customer/partner demands for more accurate weather forecasts.
- A majority of the respondents (84.74%) have stated that the rapid increase in the volume of hydro meteorological data had accelerated the process of weather communication.
- A majority of the respondents (71.10%) have stated that



sophisticated diagnostic tools were required to examine the data and highlight meteorological processes.

- A majority of the respondents (79.22%) have stated that the new generation radar systems provided the opportunity to improve severe weather detection and safeguard the interest of people.
- A majority of the respondents (71.10%) have stated that modern now cast system had the ability to generate hydro-meteorological forecast products and disseminate them in a variety of formats.
- A majority of the respondents (85.71%) have stated that the new generation forecast workstations had brought the promise of new methods to assimilate vast amounts of observational data and assist forecasters with data analysis and interpretation.
- A majority of the respondents (76.30%) have stated that modern weather forecast workstations had prepared the forecasts and disseminate weather communication through a host of communication channels.
- A majority of the respondents (86.04%) have stated that the Internet had provided opportunities to enhance and expand weather service delivery.
- A majority of the respondents (66.56%) have stated that forecasts of weather phenomena had become increasingly accurate because of communication technological developments.

### **Attitude of the Respondents about Weather Communication**

- A majority of the respondents (77.27%) have stated that more educated public would make sound weather related decisions based on weather communication services.
- A majority of the respondents (75.32%) have stated that weather communicators were required to disseminate weather information optimally to the largest audience.
- A majority of the respondents (72.08%) have stated that weather communicators were required to understand the demographic information to maximize the benefits of weather communication.
- A majority of the respondents (70.13%) have stated that demographic details enabled the weather communicators to reach out to the specific groups in times of need.
- A majority of the respondents (75.32%) have stated that the individuals with higher levels of anxiety showed tendency to better prepare for weather situations on the basis of weather communication.
- A majority of the respondents (71.43%) have stated that the weather communicators were required to disseminate proper weather terminology used in forecasts in order to avoid misinterpretation of messages.
- A majority of the respondents (69.48%) have stated that miscommunication between forecasters and the general public would lead to unsound judgments in



making critical weather related decisions.

- A majority of the respondents (71.43%) have stated that people's trust in the National Weather Service and source of communication mattered most in weather communication.
- A majority of the respondents (72.08%) have stated that the readiness and planning among the people could be enhanced through proper and timely weather communication services.
- A majority of the respondents (67.53%) have stated that weather communication had become effective on the basis of authentic observational and specific data.
- A majority of the respondents (68.23%) have stated that weather communication had become relevant on the basis of emphasis on quality management procedures.
- A majority of the respondents (76.62%) have stated that weather communication would become credible on the basis of use of new media tools and technologies.
- A majority of the respondents (69.81%) have stated that the capacity building of scientists and communicators had improved the quality of weather communication.
- A majority of the respondents (71.43%) have stated that communication skill development of scientists and communicators had improved the quality of weather communication.
- A majority of the respondents (68.83%) have stated that the

dissemination of social and economic benefits of weather communication had improved the quality of weather communication.

### Media of Weather Communication

- A majority of the respondents (63.31%) have stated that newspaper reports and advertisements were used for the purpose of weather communication in the study areas.
- A majority of the respondents (70.78%) have stated that marine radio was used for the purpose of weather communication in the study areas in the study areas.
- A majority of the respondents (66.56%) have stated that commercial radio was used for the purpose of weather communication in the study areas in the study areas.
- A majority of the respondents (66.88%) have stated that public service radio advertisements were used for the purpose of weather communication in the study areas.
- A majority of the respondents (70.13%) have stated that television broadcasting was used for the purpose of weather communication in the study areas.
- A majority of the respondents (70.13%) have stated that television public service advertisements were used for the purpose of weather communication in the study areas.
- A majority of the respondents (70.13%) have stated that satellite television was used for the purpose of weather communication in the study areas.



- All the respondents (100%) have stated that telephone was commonly used for the purpose of weather communication in the study areas.
- A majority of the respondents (81.17%) have stated that websites were used for the purpose of weather communication in the study areas.
- All the respondents (100%) have stated that satellite phone was used for the purpose of weather communication in the study areas.
- All the respondents (100%) have stated that National Meteorological and Hydrological Service web page was used for the purpose of weather communication in the study areas.
- A majority of the respondents (82.47%) have stated that broadband Internet facilities were used for the purpose of weather communication in the study areas.
- A majority of the respondents (86.36%) have stated that satellite phone was used for the purpose of weather communication in the study areas.
- A majority of the respondents (79.22%) have stated that RANET was used for the purpose of weather communication in the study areas.
- All the respondents (100%) have stated that public weather services were used for the purpose of weather communication in the study areas.
- A majority of the respondents (73.38%) have stated that public information booths were used for the purpose of weather communication in the study areas.
- All the respondents (100%) have stated that operational video conferencing was used for the purpose of weather communication in the study areas.
- A majority of the respondents (75.32%) have stated that public information booths were used for the purpose of weather communication in the study areas.
- All the respondents (100%) have stated that research and networking was used for the purpose of weather communication in the study areas.
- A majority of the respondents (75.32%) have stated that training programmes/ workshops were not used for the purpose of weather communication in the study areas.
- A majority of the respondents (74.68%) have stated that non-government organizations were not used for the purpose of weather communication in the study areas.
- All the respondents (100%) have stated that linked data systems were used for the purpose of weather communication in the study areas.
- A majority of the respondents (75.97%) have stated that animations on television were used for the purpose of weather communication in the study areas.
- A majority of the respondents (74.03%) have stated that specialized media liaison staff was not used for the purpose of weather communication in the study areas.
- All the respondents (100%) have stated that direct radio links to radio stations was used for the purpose of



weather communication in the study areas.

- A majority of the respondents (77.27%) have stated that radio broadcast booths were not used for the purpose of weather communication in the study areas.
- All the respondents (100%) have stated that direct video links to radio stations was used for the purpose of weather communication in the study areas.
- A majority of the respondents (74.03%) have stated that online connectivity to TV channels was not used for the purpose of weather communication in the study areas.
- A majority of the respondents (72.73%) have stated that meteorological training to media persons was not used for the purpose of weather communication in the study areas.
- All the respondents (100%) have stated that Geographical Information Systems (GIS) based forecasts and information was used for the purpose of weather communication in the study areas.
- A majority of the respondents (77.27%) have stated that advanced telecommunications was used for the purpose of weather communication in the study areas.
- A majority of the respondents (78.57%) have stated that automated communications procedures were used for the purpose of weather communication in the study areas.
- A majority of the respondents (72.08%) have stated that face to face communication was used for the

purpose of weather communication in the study areas.

- All the respondents (100%) have stated that liaison with emergency management agency's was used for the purpose of weather communication in the study areas.
- A majority of the respondents (68.18%) have stated that increased frequency of media interactions was used for the purpose of weather communication in the study areas.

### **Suggestions for Future Research**

This study attempted to evaluate the role of communications media in weather communication with special reference to Karnataka and Andhra Pradesh states. The study has revealed the strengths and limitations of various communications media in the process of weather communication. But, during the course of the study, it is understood that there are many areas which could be considered for research by the future generation of researchers. Further research is needed in order to better determine the best uses for multimedia, and how different scientific organizations and government bodies responding to weather communication needs can capitalize on multimedia benefits. More research should be conducted on the types of multimedia messages that should be disseminated throughout the region.

### **Conclusion**

The present study reveals that various communications media have the capacity to deliver timely and adequate weather communication services in times of need. The multimedia have the potential to be powerful tools coordinating various operations in times of climate change and fluctuating





weather conditions across the globe. The study has demonstrated that new media and social media have gained an upper hand over traditional print and electronic media as channels of weather communication in the study areas. The study also provided insight into how advanced communication tools and technologies can be utilized as effective means of weather communication. The stakeholders of weather communication and natural disaster management are using advanced new media and social media tools and techniques for the purpose of weather communication. The strengths of new media and social media are enormous from the point of view of weather communication. These advanced media have the capacity to reach a broad audience, and direct communication between service providers and beneficiaries. These strengths are compared to the its limitations, such as certain demographics not using new media and social media, the speed with which rumors can spread, and the unrealistic expectations people may have of communications media for weather communication. The present investigation emphasizes that new media and social media are indeed an invaluable tools in weather communication and natural disaster management in South India.

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