CHAPTER – V
CONCLUSION

5.1 Introduction

Karnataka State has achieved notable progress in the field of agricultural development since independence. Natural disasters usually occur in the state and affect the agricultural production and productivity. The Government of Karnataka recognized the importance of managing natural disasters on the basis of scientific innovations and approaches. The Karnataka State Natural Disaster Monitoring Centre is providing advanced services on the basis of new media applications to the officials and farmers on round the clock basis. The present investigation was carried out in the State of Karnataka to assess the new media application of Karnataka State Natural Disaster Monitoring Centre in the management of agriculture in times of natural disasters. The findings of the study, limitations of the study, testing of hypotheses, implications of the study and suggestions for future research are amplified in this chapter.

5.2 Findings of the Study

The findings of the study are classified under different heads namely, demographic features of stakeholders and farmers, communication media association of respondents, new media exposure among the respondents, attitude of the respondents towards natural disaster management, perception of the respondents about agricultural development, uses of new media services of KSNDMC and gratification of new media services of KSNDMC.

Demographic Features of the Respondents

- There was more number of respondents representing the male respondents (76.92%), 29-50 years age group (59.34%), matriculation and pre-university educational background (82.42%), agricultural officials’ category (82.42%), high and middle income groups (82.42%) and Hyderabad Karnataka and Old Mysore regions (53.85%) among the study sample.
There were more number of respondents representing the male respondents (92.48%), 18-39 years age groups (55.88%), matriculation and pre-university educational categories (74.84%), low income group and middle income groups (69.12%) and respondents of Hyderabad Karnataka and Old Mysore regions (52.94%) respectively among the study sample.

Communications Media Association of Respondents

- A majority of the officials (58.24%) and farmers (55.56%) have stated that newspapers were available to them as a source of communication.
- A majority of the officials (73.63%) and farmers (50.33%) have stated that magazines were available to them as a source of communication.
- A majority of the officials (58.24%) and farmers (55.56%) have stated that radio was not available to them as a source of communication.
- All the officials (100%) and farmers (100%) have stated that television was available to them as a source of communication.
- A majority of the officials (58.24%) and farmers (73.83%) have stated that DVD Player was not available to them as a source of communication.
- A majority of the officials (79.12%) and farmers (87.25%) have stated that tape recorder was not available to them as a source of communication.
- A majority of the officials (81.32%) and farmers (88.24%) have stated that radio and tape recorder was not available to them as a source of communication.
- A majority of the officials (68.13%) and farmers (94.12%) have stated that computer was not available to them as a source of communication.
- A minority of the officials (73.63%) and farmers (96.41%) have stated that computer with Internet was not available to them as a source of communication.
- A minority of the officials (74.73%) and farmers (88.24%) have stated that mobile with Internet was not available to them as a source of communication.
- A minority of the officials (70.33%) and farmers (85.95%) have stated that
Smart Phone was not available to them as a source of communication.

- A majority of the officials (65.93%) and farmers (85.95%) have stated that cable/satellite were available to them as a source of communication.

**New Media Exposure among the Respondents**

- A majority of the officials (85.71%) and farmers (53.59%) have stated that they had the benefit of exposure to Internet for the effective management of natural disasters for agricultural production and productivity.

- A majority of the officials (74.73%) and farmers (87.91%) have stated that they did not have the benefit of exposure to Webcasts for the effective management of natural disasters for agricultural production and productivity.

- A majority of the officials (93.41%) and farmers (97.06%) have stated that they did not have the benefit of exposure to Podcasts.

- A majority of the officials (62.64%) and farmers (94.44%) have stated that they did not have the benefit of exposure to Online Farm Publications.

- A majority of the officials (81.32%) had benefit of access to Desktop Computer but a majority of farmers (80.72%) did not enjoy the same privilege.

- A majority of the officials (76.92%) and farmers (96.08%) have stated that they did not have the benefit of exposure to Laptop Computer.

- A majority of the officials (70.33%) and farmers (85.95%) have stated that they did not have the benefit of exposure to Smartphone.

- A majority of the officials (72.53%) had the benefit of exposure to E-mail Application but, a majority of the farmers (81.37%) did not have that privilege.

- A majority of the officials (52.57%) had the benefit of exposure to Social Media but, a majority of the farmers (88.24%) did not have that privilege.

- All the officials (100%) and farmers (100%) have stated that they had the benefit of exposure to SMS.

- All the officials (100%) and farmers (100%) have stated that they did not
have the benefit of exposure to m-ARD apps.

- All the officials (100%) and farmers (100%) have stated that they did not have the benefit of exposure to Mobile Platforms.
- All the officials (100%) and farmers (100%) have stated that they had the benefit of exposure to Hyper Local Services.
- All the officials (100%) and farmers (100%) have stated that they did not have the benefit of exposure to Drum Net.
- All the officials (100%) and farmers (100%) have stated that they did not have the benefit of exposure to Virtual City.
- All the officials (100%) and farmers (100%) have stated that they did not have the benefit of exposure to Hotline Service.
- All the officials (100%) and farmers (100%) have stated that they did not have the benefit of exposure to Trade Net.
- All the officials (100%) and farmers (100%) have stated that they did not have the benefit of exposure to E-Diary.
- All the officials (100%) and farmers (100%) have stated that they did not have the benefit of exposure to Mobile Ecosystems.
- All the officials (100%) and farmers (100%) have stated that they did not have the benefit of exposure to Crowd Sourcing.
- All the officials (100%) and farmers (100%) have stated that they did not have the benefit of exposure to Alternative Revenue Streams.
- All the officials (100%) and farmers (100%) have stated that they did not have the benefit of exposure to Commercial Mobile Applications.
- A majority of the officials (100%) and farmers (92.44%) have stated that they did not have the benefit of exposure to Voice.
- A majority of the officials (100%) and farmers (73.55%) have stated that they did not have the benefit of exposure to Video.
- A majority of the officials (100%) and farmers (94.96%) have stated that they did not have the benefit of exposure to GPS.
A majority of the officials (86.82%) and farmers (97.39%) have stated that they did not have the benefit of exposure to Multimedia.

A majority of the officials (79.12%) had the benefit of exposure to Agricultural Market Information Systems but, a majority of the farmers (79.12%) did not have that privilege.

A majority of the officials (87.91%) and farmers (97.06%) have stated that they did not have the benefit of exposure to ICT Bites.

A majority of the officials (75.82%) and farmers (89.22%) have stated that they did not have the benefit of exposure to Open Data Kit.

A majority of the officials (74.73%) and farmers (93.79%) have stated that they did not have the benefit of exposure to Social Texts.

Attitude of the Respondents towards Natural Disaster Management

A majority of the officials (86.91%) and farmers (84.31%) have stated that Karnataka state was vulnerable to more than one natural hazard.

A majority of the officials (75.82%) and farmers (87.25%) have stated that Karnataka state was facing natural disasters consistently every year.

A majority of the officials (73.63%) and farmers (82.03%) have stated that Karnataka state had lost crores of rupees on account of natural disasters.

A majority of the officials (57.41%) and farmers (67.32%) have stated that Karnataka state had witnessed a paradigm shift in natural disaster management.

A majority of the officials (64.84%) and farmers (64.71%) have stated that Karnataka state had witnessed a paradigm shift from rescue approach to preparedness approach.

A majority of the officials (76.92%) and farmers (83.01%) have stated that Karnataka state received inputs from science and technology to succeed in preparedness approach.

A majority of the officials (69.23%) and farmers (79.08%) have stated that Karnataka state had strengthened the information technology for natural disasters management.
A majority of the officials (74.73%) and farmers (67.97%) have stated that Karnataka state had encouraged hazard mapping and vulnerability studies.

A majority of the officials (58.24%) and farmers (60.78%) have stated that Karnataka state had a well organized human resources development to manage natural disasters.

A majority of the officials (60.44%) and farmers (62.09%) have stated that Karnataka state had a well equipped monitoring and impact assessment system of natural hazards.

A majority of the officials (57.14%) and farmers (66.67%) have stated that Karnataka state had speedy collaboration and close cooperation between the stakeholders of natural disaster management.

A majority of the officials (58.24%) and farmers (52.94%) have stated that Karnataka state had the facility of mapping vulnerable areas in times of natural disasters.

A majority of the officials (68.13%) and farmers (69.93%) have stated that Karnataka state had the technical support in identifying various types of natural disasters.

A majority of the officials (64.84%) and farmers (74.51%) have stated that Karnataka state had an updated database on natural hazards.

A majority of the officials (84.62%) and farmers (79.74%) have stated that Karnataka state had a decentralized web enabled system of natural disaster communication management.

**Perception of the Respondents about Agricultural Development**

A majority of the officials (91.21%) and farmers (95.10%) have stated that agriculture was the backbone of economy in Karnataka state.

A majority of the officials (86.81%) and farmers (82.68%) have stated that agriculture provided employment opportunities to the people of Karnataka state.

A majority of the officials (84.62%) and farmers (82.03%) have stated that agriculture generated income for the people of Karnataka state.
A majority of the officials (84.62%) and farmers (71.24%) have stated that agriculture sector should be modernized in Karnataka state.

A majority of the officials (75.82%) and farmers (77.78%) have stated that agricultural innovations, technologies and practices should reach out to the farmers in Karnataka state.

A majority of the officials (89.01%) and farmers (84.64%) have stated that lab to land linkage was essential in Karnataka state.

A majority of the officials (91.21%) and farmers (84.64%) have stated that agriculture sector should be developed in Karnataka state to ensure food security to the people.

A majority of the officials (85.71%) and farmers (84.31%) have stated that agriculturists required financial assistance in Karnataka State.

A majority of the officials (91.21%) and farmers (91.83%) have stated that agriculturists required crop insurance facility in Karnataka State.

All the officials (100%) and farmers (100%) have stated that agriculturists in Karnataka state needed timely interventions of various stakeholders for their development.

A majority of the officials (90.11%) and farmers (83.66%) have stated that agriculturists in Karnataka needed a systematic database for their development.

All the officials (100%) and farmers (100%) have stated that agriculturists in Karnataka needed market research services to receive valuable information on farm management.

A majority of the officials (90.11%) and farmers (86.27%) have stated that agriculturists in Karnataka needed different platforms to facilitate transactions between them and various institutions.

A majority of the officials (90.11%) and farmers (90.20%) have stated that agriculturists in Karnataka state needed hyper local services and support.

All the officials (100%) and farmers (100%) have stated that agriculturists in Karnataka state needed inter-disciplinary services for their sustainable development.
Utility of KSNDMC based New Media for Natural Disaster Management

- A majority of the officials (80.22%) and farmers (67.25%) have stated that the KSNDMC based new media were an important component of natural disaster management.

- A majority of the officials (73.63%) and farmers (66.34%) have stated that the KSNDMC based ‘Help desk’ facilities were offered on 24 hours basis to the farmers in Karnataka state.

- A majority of the officials (67.03%) and farmers (64.38%) have stated that the KSNDMC based web enabled information dissemination took place through help desk on demand.

- A majority of the officials (71.43%) and farmers (65.69%) have stated that the KSNDMC based database management provided timely information to various stakeholders of natural disaster management.

- A majority of the officials (74.73%) and farmers (66.67%) have stated that the KSNDMC based web enabled new media services provided relevant information on round the clock basis.

- A majority of the officials (76.92%) and farmers (67.32%) have stated that the KSNDMC based dissemination of information to various stakeholders was undertaken through e-mail, print media and web portal at appropriate time.

- A majority of the officials (81.32%) and farmers (68.63%) have stated that the KSNDMC based weather forecasts based on various mathematical models provided early warnings.

- A majority of the officials (74.73%) and farmers (66.67%) have stated that the KSNDMC based weather alerts did not help officers and people to effectively manage natural disasters.

- A majority of the officials (64.84%) and farmers (63.73%) have stated that the KSNDMC based rain fall data sharing with the help of telemetric rain gauge stations had facilitated natural disaster management.
A majority of the officials (74.73%) and farmers (66.67%) have stated that the KSNDMC based early warning system through help desk was quite useful in Karnataka state.

A majority of the officials (65.93%) and farmers (64.05%) have stated that the KSNDMC based new media facilitated timely and pro-active steps to manage natural disasters and improve farm output.

A majority of the officials (61.54%) and farmers (62.75%) have stated that the KSNDMC based new media had facilitated hazard mapping and vulnerability studies.

A majority of the officials (63.74%) and farmers (63.40%) have stated that the KSNDMC based new media had not facilitated alert recognition and transmission of advisories to the users.

A majority of the officials (68.13%) and farmers (65.03%) have stated that the KSNDMC based services did not provide timely alerts to the people in times of natural disasters.

A majority of the officials (70.33%) and farmers (66.34%) have stated that the KSNDMC based help desk services enabled the farmers to schedule various agricultural activities according to changing conditions.

A majority of the officials (74.73%) and farmers (67.65%) have stated that the KSNDMC based services also provided useful feedback to the administrators in times of disasters.

A majority of the officials (78.02%) and farmers (68.30%) have stated that the KSNDMC based services did not provide participatory and interactive communication services in times of natural disasters.

A majority of the officials (83.52%) and farmers (70.26%) have stated that the KSNDMC based services were problem oriented and solution oriented in times of natural disaster management.

A majority of the officials (76.92%) and farmers (67.32%) have stated that the KSNDMC based new media had not provided advanced access to the methods of natural disaster management.
A majority of the officials (74.73%) and farmers (66.01%) have stated that the KSNDMC based new media were flexible tools of information dissemination on natural disaster management.

A majority of the officials (68.13%) and farmers (63.07%) have stated that the KSNDMC based new media made natural disaster management in a more efficient mode.

A majority of the officials (63.74%) and farmers (61.11%) have stated that the KSNDMC based new media did not add value service for user’s multiple demands in times of natural disasters.

A majority of the officials (60.44%) and farmers (59.15%) have stated that the KSNDMC based new media did not meet a wide range of needs in times of natural disasters.

A majority of the officials (62.64%) and farmers (60.46%) have stated that the KSNDMC based new media provided useful information support to the people at the mitigation phase.

A majority of the officials (62.64%) and farmers (60.46%) have stated that the KSNDMC based new media provided useful information support to the people at the preparedness phase.

A majority of the officials (62.64%) and farmers (60.46%) have stated that the KSNDMC based new media provided useful information support to the people at the response phase.

A majority of the officials (62.64%) and farmers (60.46%) have stated that the KSNDMC based new media provided useful information support to the people at the recovery phase.

A majority of the officials (59.34%) and farmers (59.15%) have stated that the KSNDMC based new media did not provide adequate information on resources mobilization and utilization in times of natural disasters.

A majority of the officials (69.23%) and farmers (61.11%) have stated that the KSNDMC based new media provided adequate information on governmental intervention for natural disaster management.
A majority of the officials (70.33%) and farmers (61.76%) have stated that the KSNDMC based new media did not provide adequate information on non-governmental intervention for natural disaster management.

A majority of the officials (72.53%) and farmers (62.75%) have stated that the KSNDMC based new media did not provide logistical support for coordinating efforts in times of natural disaster management.

A majority of the officials (75.82%) and farmers (63.73%) have stated that the KSNDMC based new media provided useful support to instantly update information even earlier than government and media institutions.

A majority of the officials (85.71%) and farmers (66.67%) have stated that the KSNDMC based new media did not help locate medical facilities and other emergency services.

A majority of the officials (79.12%) and farmers (64.71%) have stated that the KSNDMC based new media provided an open access emergency system to different sections of society in times of natural disasters.

A majority of the officials (81.32%) and farmers (65.36%) have stated that the KSNDMC based new media provided immediate connectivity and valuable time for response in times of natural disasters.

A majority of the officials (58.24%) and farmers (58.50%) have stated that the KSNDMC based new media kept the lines available for emergency crews and help people to post and acquire necessary information.

A majority of the officials (56.04%) and farmers (57.84%) have stated that the KSNDMC based new media did not help the users to understand the geographical information about disasters inflicted area and the rescue operations

A majority of the officials (53.85%) and farmers (57.19%) have stated that the KSNDMC based new media were direct tool between the government and people for effective management of natural disasters.

A majority of the officials (54.95%) and farmers (57.84%) have stated that the KSNDMC based services enabled the researchers and development
functionaries to take timely decisions in times of natural disaster management

Gratifications of KSNDMC based New Media for Natural Disaster Management

- A majority of the officials (78.02%) and farmers (68.30%) have stated that the inputs for planning and execution of developmental activities in times of natural disaster management provided by the KSNDMC were satisfactory.

- A majority of the officials (73.63%) and farmers (65.03%) have stated that the new media services for cultivation of positive attitude about natural disaster management among the farmers given by the KSNDMC were satisfactory.

- A majority of the officials (83.52%) and farmers (67.97%) have stated that the creation of better linkage between farmers and other stakeholders of natural disaster management by the KSNDMC was satisfactory.

- A majority of the officials (72.53%) and farmers (67.32%) have stated that the new media services for persuading the farmers to manage the natural disasters confidently given by the KSNDMC were satisfactory.

- A majority of the officials (65.93%) and farmers (62.75%) have stated that the new media services provided by the KSNDMC were not satisfying component of agricultural development in times of natural disaster management.

- A majority of the officials (72.53%) and farmers (66.99%) have stated that the new media services provided by the KSNDMC to bridge the communication gap between the farmers and other stakeholders of natural disaster management were satisfactory.

- A majority of the officials (74.73%) and farmers (66.67%) have stated that the new media services provided by the KSNDMC to enable the farmers to understand the ways and means of improving agricultural productivity in times of natural disasters were satisfactory.

- A majority of the officials (65.93%) and farmers (61.76%) have stated that the new media services for the creation of a favorable environment for
agricultural development in times of natural disaster management were satisfactory.

- A majority of the officials (64.84%) and farmers (61.11%) have stated that the new media services offered by the KSNDMC for the motivation of the farmers to acquire practically relevant skills for better farm management in times of natural disaster management were not satisfactory.

- A majority of the officials (57.14%) and farmers (58.50%) have stated that the new media services offered by the KSNDMC to enable the farmers to enhance agricultural productivity and accommodate climatic aberrations were not satisfactory.

- A majority of the officials (70.33%) and farmers (62.09%) have stated that the new media services offered by the KSNDMC to enable the farmers to improve the farm output and reduce the cost of cultivation were satisfactory.

- A majority of the officials (76.92%) and farmers (64.05%) have stated that the new media services offered by the KSNDMC to the farmers at the grassroots level on scheduling of various agricultural activities according to the changing conditions were satisfactory.

- A majority of the officials (58.24%) and farmers (58.50%) have stated that the new media services offered by the KSNDMC to cover maximum farmers across the state and provide holistic services to improve the farming system and operations were not satisfactory.

- A majority of the officials (57.14%) and farmers (58.50%) have stated that the new media services offered by the KSNDMC to the farmers to take suitable steps at different stages of agricultural operations were satisfactory.

- A majority of the officials (72.53%) and farmers (62.75%) have stated that the new media services offered by the KSNDMC to provide technical information and advice to the farmers for increasing profits and reduce losses during natural disasters were satisfactory.

- A majority of the officials (72.53%) and farmers (66.01%) have stated that the new media services offered by the KSNDMC to enable the farmers to adopt scientific methods of cultivation and minimize the ill effects of natural disasters were not satisfactory.
A majority of the officials (59.34%) and farmers (59.15%) have stated that the new media services offered by the KSNDMC to enable the farmers to make proper ground works for implementation of useful agricultural operations during natural calamities were not satisfactory.

A majority of the officials (68.13%) and farmers (62.42%) have stated that the new media services offered by the KSNDMC for income generation through agricultural promotion in times of natural disaster management were not satisfactory.

5.3 Testing of Hypotheses

H1. The officials of agriculture department and farmers in Karnataka state have not gained adequate communications media exposure.

The data which are presented in the tables 4.3.1 to 4.3.12 clearly reveal that the officials of agriculture department and farmers in Karnataka state had not enjoyed the benefit of adequate communications media exposure. Hence, the above hypothesis stands proved according to the data analysis.

H2. The officials of agriculture department and farmers in Karnataka state have not gained adequate new media exposure for better agricultural productivity in times of natural disaster management.

The data which are presented in the tables 4.4.1 to 4.4.30 clearly reveal that the officials of agriculture department and farmers in Karnataka state had not enjoyed the benefit of adequate new media exposure for better agricultural productivity in times of natural disaster management. Hence, the above hypothesis stands proved according to the data analysis.

H3. The officials of agriculture department and farmers in Karnataka state have not cultivated a positive attitude towards natural disaster management.

The data which are presented in the tables 4.5.1 to 4.5.15 clearly reveal that the officials of agriculture department and farmers in Karnataka state have cultivated a positive attitude towards natural disaster management. Hence, the above hypothesis stands disproved according to the data analysis.
H4. The officials of agriculture department and farmers in Karnataka state have not perceived the significance of agriculture in a positive manner.

The data which are presented in the tables 4.6.1 to 4.6.15 clearly reveal that the officials of agriculture department and farmers in Karnataka state have perceived the significance of agriculture in a positive manner. Hence, the above hypothesis stands disproved according to the data analysis.

H5. The officials of agriculture department and farmers in Karnataka state have found that the services rendered by the KSNDMC are not absolutely useful.

The data which are presented in the tables 4.7.1 to 4.7.39 clearly reveal that the officials of agriculture department and farmers in Karnataka state have perceived that the services rendered by the KSNDMC are useful for agricultural production and productivity in times of natural disaster management. Hence, the above hypothesis stands disproved according to the data analysis.

H6. The officials of agriculture department and farmers in Karnataka state have not derived any gratification from the services rendered by the KSNDMC.

The data which are presented in the tables 4.8.1 to 4.8.18 clearly reveal that the officials of agriculture department and farmers in Karnataka state have derived considerable gratification from the services rendered by the KSNDMC. Hence, the above hypothesis stands disproved according to the data analysis.

5.4 Limitations of the Study

It was not practically possible for the researcher to enjoy the benefit of accessibility of data to all the stakeholders of natural disaster management and agricultural development in the state of Karnataka. It was not practically possible to contact all the officials of the agricultural department and farmers who are the beneficiaries of the services rendered by the Karnataka State Natural Disaster Monitoring Centre due to lack of time. The usual limitations of the survey method such as time, human inadequacies, resource constraints, recollection and communication were experienced by the researcher. Incidental, purposive and
stratified sampling methods were followed in selecting the respondents. Though much care has been taken to collect the primary data, the memory bias on the part of the respondents cannot be completely ruled out.

5.5 Implications of the Study

The implications of the findings of the study in general terms are given below.

5.5.1 Government of India

Agriculture is indeed the backbone of national development in India. The investigation reveals that it is imperative to formulate a National Policy on Natural Disaster Management in the new millennium. The Government of India should implement the recommendations of Yokohama Roundtable Conference-2014 which called upon the various national governments to educate, warn, inform and empower people to take practical steps to protect themselves from natural hazards. The national policy should be formulated in consultation with the seasoned administrators, subject specialists and activists who are committed to national development cause. This policy may consider devoting a separate section on agricultural management in times of natural disasters with reference to active community participation and state intervention. Public-Private-Partnership is essential for the development of agriculture and rural development sectors in times of peace and disasters.

A National Commission for Agriculture Development should also be constituted for the expansion, modernization and development of agriculture. This commission may consider the need for planning and executing suitable programmes at national, regional and grassroots level as effective instruments of agriculture development. A high powered planning body is required to bridge the gap between farmers and other stakeholders of agriculture development across the country. The national mission may advise the Government of India and Planning Commission on agenda setting, budgetary allocation, infrastructure development, institutional arrangements, strategy making, program implementation, monitoring and evaluation of agricultural development and natural disaster management endeavors in the country.
The government should also develop research, training, extension, publication and other activities which can improve the status of natural disaster management and agricultural development in India. All states and union territories should have regional level natural disaster monitoring centers to provide round the clock services on the basis of technological innovations and multimedia applications. Adequate budgetary allocations, institutional arrangements, human resources management, technological resources mobilization, community participation, program implementation, scientific evaluation and other aspects of natural disaster management should be addressed by the government.

5.5.2 Implications on Karnataka State Government

The Government of Karnataka has emerged as a model state from the point of view of natural disaster management. It has established the regional level natural disaster monitoring centre for the first time in the country to prepare grounds for implementation of various development programmes in times of natural disasters. The government should equip the centre with the state of the art technologies and infrastructural facilities. The centre should be enabled to function independently and effectively on the basis of adequate funds and facilities. The agriculture department should be modernized and strengthened in terms of human resources, infrastructural facilities and technological advancements. Close collaboration between agriculture department and KSNDMC is essential to improve agricultural productivity in times of natural disaster management in Karnataka state.

5.5.3 Implications on Media Institutions

The media institutions are required to play a responsible role in times of natural disaster management on the basis of corporate social responsibility. The Yokohama World Conference (2014) called upon the media to play a pro-active role in the process of natural disaster management. The recommendations of the conference should be implemented without compromising the independence and integrity of the media in order to facilitate more humane uses of communications to save lives, reduce damage to property and the environment. The communications media should play a vital role in educating the public about disasters, warning of hazards, gathering and transmitting information about affected areas, alerting
government officials, relief organizations, and the public to specific needs, and facilitating discussions about disaster preparedness and response, according to the recommendations of the conference. The media should provide constant and conscious communication services based on mutual trust and the recognition of differing characteristics, goals, and needs. The media institutions should also assume the role of angel guardian of public interest and provide useful services to the mankind in times of disasters.

5.5.4 Implications on Non-Government Organizations

The non-government organizations namely – farmers’ associations, workers’ unions, youth clubs, women’s associations, writers unions, environmental clubs, self-help groups and other agencies are required to play a vital role in the process of natural disaster management. These bodies should also sensitize the various stakeholders of natural disaster management and facilitate proper implementation of developmental activities in times of natural disasters. These organizations should also expand the schemes and programmes of sustainable development in modern times. The government and non-government organizations should be brought under a common umbrella to launch awareness campaigns and enlist active participation of people in the natural disaster management.

5.5.5 Implications on Corporate Houses

The corporate houses have a great social responsibility in the process of natural disaster management. They should contribute funds and services for the development of agricultural sector and strengthen the foundations of national development. They should also contribute meaningful services for the rehabilitation of the affected persons in times of natural disasters.

5.5.6 Implications on Karnataka State Natural Disaster Monitoring Centre

The KSNDMC is the first organization in the country which has made a good beginning in the field of sensitizing the officials and farmers in times of natural disasters for better management of agricultural production in the state. The centre has provided certain services which have benefitted the farmers undoubtedly. In the course of investigation, the officials and farmers have suggested certain measures which would go a long way in improving the delivery system. They include:
The KSNDMC based weather alerts should help officers and farmers to effectively manage natural disasters on the basis of authentic data base.

The KSNDMC based new media should facilitate alert recognition and transmission of advisories to the users in a precise manner.

The KSNDMC based services should provide participatory and interactive communication services to the officials and farmers in times of natural disasters.

The KSNDMC based new media should provide advanced access to the methods of natural disaster management to the officials and farmers.

The KSNDMC based new media should add value service for user’s multiple demands in times of natural disasters.

The KSNDMC based new media should meet a wide range of needs in times of natural disasters.

The KSNDMC based new media should provide adequate information on resources mobilization and utilization in times of natural disasters.

The KSNDMC based new media should provide adequate information on non-governmental intervention for natural disaster management.

The KSNDMC based new media should provide logistical support for coordinating efforts in times of natural disaster management.

The KSNDMC based new media should help locate medical facilities and other emergency services.

The KSNDMC based new media should help the users to understand the geographical information about disasters’ inflicted area and the rescue operations.

The KSNDMC based new media should enable the officials and farmers to enhance agricultural productivity and accommodate climatic aberrations.

The KSNDMC based new media should cover maximum farmers across the state and provide holistic services to improve the farming system and operations.

The KSNDMC based new media should enable the farmers to adopt
scientific methods of cultivation and minimize the ill effects of natural disasters.

- The KSNDMC based new media should enable the farmers to make proper ground works for implementation of useful agricultural operations during natural calamities.
- The KSNDMC based new media should help the beneficiaries to avail toll free services.
- The KSNDMC based new media should enable the desk members to obtain knowledge about agriculture, crops and weather conditions of each region.
- The KSNDMC based new media should provide relevant information about changing weather conditions and need based agricultural operations.
- The KSNDMC based new media should provide relevant information one week before to ensure disaster preparedness and planning of agricultural activities.
- The KSNDMC based new media should ensure meaningful inter-disciplinary coordination and measures.
- The KSNDMC based new media should disseminate the messages through SMS in the right time.
- The KSNDMC based new media should provide area-specific and time-specific information services to the users.
- The KSNDMC based new media should enable the farmers to understand the weather information disseminated to officials.
- The KSNDMC based new media should ensure proper networking at the grassroots level.
- The KSNDMC based new media should also involve the village panchayat and provide adequate information about agricultural operations in times of natural disasters.
- The KSNDMC based new media should ensure meaningful human resources management, information management and operations management on the basis of proper integration of various stakeholders of agricultural development and natural disaster management.
5.6 Suggestions for Future Research

This study attempted to evaluate the role of Karnataka State Natural Disaster Monitoring Centre, Bangalore in the process of agricultural development in times of natural disasters. The study has revealed the strengths and limitations of this organization in this regard. 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. Natural disaster management is a vast area of research. There are several agencies which are conducting research, publication and extension activities in the field of agriculture development in Karnataka and elsewhere. The future researchers are called upon to investigate the natural disaster management policy, natural disaster management process, role of state in natural disaster management, role of NGOs in natural disaster management, role of media in natural disaster management, role of social work education in natural disaster management, social mobilization for natural disaster management, political mobilization for natural disaster management, community organization for natural disaster management, social media for natural disaster management and other aspects which warrant research support in India.

Media intervention for natural disaster management is another broad area of research. The role of newspapers, magazines, radio, television, film, new media, social media, multimedia, non-government organizations, directorate of information and public relations and other channels of communication could be studied exclusively with reference to agricultural development and natural disaster management in modern society. It is clearly emphasized that media intervention for agriculture development and natural disaster management is an enduring area of research in India and other developing nations. Hence, a combination of quantitative and qualitative research is strongly advocated for understanding the role of media in agriculture development with reference to natural disasters in future.

5.7 Epilogue

The importance of agriculture development forming the core of sustainable national development strategies is realized by the stakeholders of national development. Media intervention for agriculture development and natural disaster
management assumes significance in the new millennium in a developing nation like India. Active, willing and voluntary participation of various stakeholders of natural disaster management is solicited in modern society. Communication strategy should be considered as a sub-system of integrated development of the country in general and natural disaster management process in particular. The media institutions are required to sensitize the various stakeholders of natural disaster management. The media and disaster mitigation organizations should take advantage of opportunities to work together and provide need-based services to the mankind to enhance disaster preparedness, mitigation and relief efforts. The disaster mitigation organizations and the media should identify and communicate to the public specific measures that have either succeeded or failed to reduce the impact of natural hazards in modern times. Timely, adequate and relevant media services are required to facilitate appropriate individual and community action for better agricultural production and productivity in times of natural disasters. The present study reveals that Karnataka State Natural Disaster Monitoring Centre has made a good beginning in extending advanced services for agricultural promotion in times of natural disasters. The institution has to go a long way in fulfilling the aspirations of the founders and people of Karnataka through better strategies, technologies and services.