

ROLE OF MEDIA IN TACKLING CLIMATE CHANGE ISSUE – A CASE STUDY OF PAKISTAN

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Abstract

Climate change is an unequivocal and scientifically proven reality. Numerous intertwined contributing factors and politics of climate change have made the phenomenon very complex. Most of the factors responsible for this irreversible process of climate change are also known to be anthropogenic in nature. Climate change is an issue of a monumental magnitude and the entire globe is facing a great challenge to its existence. Various stakeholders like governments, scientists, thinkers and policy makers have contending views on the issues related to climate change because they see these from different angles. Awareness and thorough knowledge about climate change is essentially required to tackle its ensuing problems. The paper argues that requisite awareness about climate change is lacking among government, state institutions and general public in Pakistan, which impedes adaptation and mitigation processes. Media can play a very significant role in raising awareness about the causes of climate change and preparing the people to rise for sustainable use of resources.

Keywords: Climate change, Media, Role of Media, Print Media, Electronic Media

Introduction

Climate change is a scientifically proven phenomenon of a monumental magnitude. It is global in nature and affects living and non-living entities on the entire planet earth. It has trans-border character as it does not respect political boundaries of countries and carries serious implications for developed and developing nations. Sufferings of nations having less resilience and coping capacity to adapt and to mitigate the impacts of climate change are however more as compared to innovative and developed nations. Governments, academics and policy makers see the issue of climate change through myriad of angles and have varying views. Since the problem is of apocalyptic nature, pessimists envision a doomsday scenario whereas optimists have great hope in human ingenuity to find out solutions of issues related to climate change. They are of the view that through sustainable use of resources, innovation and global cooperation. Media, through its enormous discursive power can affect public

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opinion, build consensus and manufacture consent.¹ Media through social responsibility can steer the masses to “what to think about”.

The immense power of the fourth estate² can raise right questions to mobilize the population for a cause. The power of media in the prevalent information age is increasing exponentially. Media creates an ‘epistemic community’ as it informs the masses and raises questions on behalf of public being their audience. Thus international action to address climate change can be created through media.³ Media’s prowess to guide actions of governments and institutions has been established and acknowledged.

There is wider consensus that climate change is the greatest threat the world faces today. It is predicted that global phenomenon of climate change besides threat to human life will have very adverse impact on agriculture and the entire ecological system.⁴ It has become clear that most of the causes of climate change are anthropogenic in nature because people’s lifestyles, consumption choices and exploitation of resources are unsustainable. The devastating effects in the wake of climate change can be adapted and mitigated by people when they rally their support for a cause hence public awareness about climate change assumes greater importance.

Pakistan is one of the most affected countries of climate change. Due to its weak state institutions and less coping capacity, climate change poses greater security risk to the country. During the last two decades, Pakistan’s civil society and media have emerged as vibrant organs of the state yet there has been little effort to sensitize masses about future challenges in the wake of emerging non-traditional security threats like climate change. They could have begun to fill the void between public institutions and traditional social structures, informing the public and creating informal mechanism to respond to threats posed by climate change. The role of media in building consensus on monumental challenge of climate change can contribute significantly in tackling the issues. In order to address all these issues effectively, it is essential to raise awareness of the general population regarding climate change and also explore the ways and means that inculcate awareness. Thus, media can play a significant role in tackling the challenges of climate change in developing countries in general and Pakistan in particular.

The paper argues that vitally important awareness about climate change is lacking among government, state institutions and general public. Media can

play an important role in raising awareness about causes and remedies for this highly complex phenomenon. This argument is based on exploration of four questions; firstly, as to what extent Pakistan is vulnerable to climate change-induced disasters? Secondly, how awareness about climate change can contribute to address the problem of climate change? Thirdly, what is the level of awareness about climate change among masses and government institutions in Pakistan? Fourthly, what role media can play to highlight threats posed by climate change and build public opinion for sustainable use of resources and measures for adaptation and mitigation?

Significance of Media: A Theoretical Approach

A renowned media theorist Niklas Luhmann posits, 'Whatever we know about our society, or indeed about the world in which we live, we know through the mass media'⁵ Media is an omnipresent entity having a symbiotic relationship with society and State institutions. In the contemporary period, especially with coming of new media, mass media's power has increased further. Publication of 'Panama Papers' by an International Consortium of Journalists is an example of boundless power of media. All good or bad news reach to people through media; messages are mediated and politics is said to be 'media-zed'. Also media can construct discourses as the peoples' attention to certain themes is steered by media. Scientists knew about climate change about two centuries ago but because of commercial interests of giant companies, it did not become 'newsworthy'. However, again with the relentless efforts of certain Non-Governmental Organizations and eminent personalities like former US Vice President Al Gore, climate change was not only debated in media but also became a salient public discourse. A number of documentaries like *Inconvenient Truth*, *Years of Living Dangerously*, *Climate Change Politics and the Economy: Rhetoric vs. Reality* etc stirred peoples' conscious regarding an impending threat of apocalyptic nature. In the past, even climate change deniers also used media to solicit support for their point of view. Media was also used for contrarian argument; for instance documentary *The Great Global Warming Swindle* propelled counter narrative of climate change.

According to agenda-setting theory, journalists in particular influence public opinion and according to the salience they give to certain news items. Newspaper stories are selected and ordered in accordance with certain news values. Those stories which are deemed to be the most newsworthy are given front-page coverage and large headlines; less newsworthy stories are placed

further back in the newspaper and given less print space. Agenda-setting theory 'asserts that audiences acquire these saliences from the news media, incorporating similar sets of weights into their own agendas.'⁶ With the introduction and great popularity of new media, it has become relatively convenient to create discourses and build public opinion in favour of 'common good' issues like climate change.

George Gerbner in his cultivation theory posits that media are important sources of information and entertainment and viewers cannot escape its gradual encroachment into their lives. To overcome problems engendered by climate change effectively, mobilization of people is imperative. Media has great influence in creating discourses and building consent on issues of vital importance. The way media covers an issue will affect how effectively societies deal with the problem. As climate change takes hold, people will demand information about what is happening and what they and their governments can do about it. Wise and responsible media managers see that climate change presents an opportunity to grow and better serve these audiences.

Media has many important roles to play in a society i.e. informing, documenting, investigating, acting as watchdogs and campaigning on social issues. Media through an awareness campaign can save lives and affect policy formulation process. Even if media may not affect policies directly, it influences the environment in which policy is formulated. Through its reporting, media can prepare masses for climate change. Coverage of climate change through media builds a social relationship among scientific community, scholars, policy makers and general public. Going a step further, the media of developing countries can inform the international audience, get their attention and ultimately foster cooperation to cope up with the situation. Climate change is not just a story of science but it has many stories of human interest in itself.⁷

Discourse analysis indicates that Pakistan's media has been gripped by two themes during the few years i.e. war on terrorism and political instability. Climate change despite posing existential threat to Pakistan has not become an important theme in Pakistani media. People can assert pressure on the government to act to solve climate change-induced problems. Media can sensitize people about the challenges and need for effective measures. Experts on the subject contend that the challenges of anthropogenic climate change can be

resolved through fostering climate-friendly behaviour for which media can play a significant role.

Pakistan's Vulnerability to Climate Change

According to the Climate Risk Index 2015 prepared by German Watch between 1994 and 2013, more than half a million people have died worldwide besides material losses of \$ 2.17 trillion as a direct result of over 15,000 extreme weather events.⁸ Massive flooding events occurring during the last few years resulting into killing of thousands and displacing millions and material losses of worth billions of rupees in Pakistan are attributed to adverse effects of climate change. Likewise there were spells of extreme heat waves with unprecedented high temperature and every month of 2016 sets a record of being the hottest month since the industrial revolution⁹ signifies that climate change is anthropogenic in nature and poor nations are more susceptible to it.

Developing countries are more vulnerable to the threat of climate change and Pakistan is included among top countries most vulnerable to climate change.¹⁰ University of Notre Dame has a project named as 'ND-GAIN Country Index', which provides details about vulnerability of various countries to climate change and their state of readiness. According to its vulnerability index, Pakistan ranks 115 out of 180 countries (higher number indicates more vulnerability whereas lower number denotes less vulnerability). Despite higher level of vulnerability, Pakistan's state of readiness is very low as it ranks 142 out of 180 countries.¹¹

With every passing year, Pakistan will be facing grave situation due to extreme events induced by climate change. Rising population has to sustain on scarce resources; thus, climate change is like a time bomb ticking for the country. Temperature in the Northern Pakistan has already been estimated to have increased by 1.9 degrees centigrade in the past century resulting in the decline of the glacial cover.¹² For instance the glaciers in the Himalya-Karakuram mountain ranges are desiccating; during the period from 1989 to 2009, Siachin Glacier has lost 17 percent of its mass and its length has reduced by 5.9 kilometres.¹³ Scientific estimates claim that the region's glaciers will be reduced to one fifth of their current size by the year 2035.

Due to climate change, the occurrences and severity of extreme weather events will substantially increase. Torrential floods in the catchment areas would

increase siltation process in water storage dams, thereby reducing their storage capacity and impairing availability of water for agriculture. With the increase in temperature, already water-stressed agriculture especially in arid and semi-arid regions would lead to reduced agricultural productivity. The estimated loss of crop yield with 1 degree rise in temperature is 6 to 9 percent. Climate change-induced rise in the sea level will also increase saline water in Indus Delta, which will result in adversely affecting coastal agriculture and fish breeding grounds. In view of increased health risks and loss of subsistence in the climate affected regions, there is an increased trend of migration to urban areas.¹⁴ The adverse effects of climate change would seriously impact social development goals like alleviation of poverty and improving economy of the country. Some of the extreme events attributed to climate change are as under:

- **Floods:** Almost at every alternate year floods occur in Pakistan and cause colossal damage. A variety of climatic and non-climatic factors influence flooding processes. Apart from the antecedent basin conditions, flood magnitudes depend on precipitation intensity, timing, and spatial distribution. Temperature and wind affect snowmelt, which in turn affects flow of rivers. The projected effects of climate change include changes in atmospheric and oceanic circulation, and many subsystems of the global water cycle are likely to intensify, leading to altered patterns of precipitation and runoff. During her recent history, Pakistan faced the most devastating floods in 2010. It caused death of over 1700 people and displacement of an estimated 19 million people across Pakistan. Official estimates of the economic damage range from \$ 8.74 to \$ 10.85 billion. Over 18000 villages were affected resulting in direct damage to 1.6 million houses. With ensuing adverse effects, there will be sudden onslaught of flash floods in coming years. Various climate model simulations show complex patterns of precipitation change, with some regions receiving less and others receiving more precipitation than they do now.
- **Heat Wave:** Sudden and unprecedented heat waves especially in urban areas have become a common manifestation of climate change. A 13 days long heat wave in Karachi during 2015 took a heavy toll of 1271 lives besides affecting over 35000 people.¹⁵ It was termed as unusual phenomenon due to climate change for which neither the government nor the public was ready. Experts attribute this massive disaster too

many factors prominent among those is climate change. The former Director General of the Pakistan Environmental Protection Agency contended that the heat wave was a symptom of global climate change, which has been aggravated by deforestation, expansion of asphalt super highways, and rapid urbanisation. He maintained that "there has been a rise in the Earth's average temperature from 15.5° C to 16.2° C over the last 100 years, due to which we are experiencing such extreme weather conditions both in summers and winters."¹⁶ Commenting on the lack of resilience among government he said that non-availability of sophisticated weather prediction technology besides inaccessibility of people to brave difficult situation contributed to the casualties as a result of the heat wave.¹⁷ Similar heat wave in an Indian city of Ahmedabad occurred but timely action of the government by adopting awareness plan saved people's lives. Increased public awareness about the dangers of heat waves through community outreach; an early warning system with 7 days forecast, giving advance notice to public about predicted heat waves; and capacity building of the government through training of medical staff and provision of related amenities contributed to resilience in the face of climate change-induced disaster.¹⁸

- **Food Security:** During World Food Summit held in 1996, it was contended that "Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life."¹⁹ As per Global Hunger Index of 2014, Pakistan stood at serious level of 19.3 which is just marginally below alarming level of 20.²⁰ Increase in temperature because of climate change triggers wide range of problems. Salient among these are; reduced crop yield, increase in evaporation, drastic change in rain pattern leading to droughts and desertification. Various studies show that poor nations would face more food insecurity because of climate change.²¹
- Being an agrarian economy, Pakistan consumes 90 percent of its available water in agriculture. Reduction in availability of water for agriculture, decreased crop production because increase in temperature would cause food insecurity, resource scarcity and conflict. Pakistan people's staple food i.e. wheat is grown in all parts of the country but its production is directly linked to availability of arable land and irrigation

water. In Pakistan, 75% of wheat is produced in Punjab, 16% in Sind, 6% in Khyber Pakhtunkhwa and 3% in Balochistan.²² The largest province in terms of area i.e. Balochistan produces the least quantity of food grain because of non-availability of irrigation water. These statistics clearly highlight that wheat production is directly proportional to the availability of water to irrigate the land. It can also be inferred that reduction in availability of water due to climate change would seriously impact country's food security. In view of such a scenario, Pakistan will not be able to achieve objective of "energy, water and food security"²³ due to adverse effects of climate change. Food security is of such a great significance that Michael Kugelman suggests that Pakistan should declare hunger as a national security issue.²⁴ Intrusion of the sea water because of rise in the sea level besides many other problems reduces availability of arable land and affects mangroves coverage, which is habitat of a large variety of fish, thereby affecting food security.

Awareness about Climate Change in Pakistan

There is a wide gap between awareness level of masses about climate change in developing and developed countries. In Japan, Europe and North America more than 90% people have knowledge of devastating effects of climate change comparing with that very few were aware of effects of climate changes in developing countries. Still 40% of adults worldwide are unaware about climate change and this ratio increases to 65% in developing countries.²⁵

Awareness and thorough knowledge regarding an issue is the fundamental step from where actions necessary for the solution of problem begin. Currently the awareness about disastrous effect of climate change and sustainable use of resources in Pakistan is dismally low. Communicating with the general public and engaging stakeholders in climate change related issues is very important to thwart the challenge effectively. Harold Lasswell opines that communication is a persuasive process. Thus as a strong communication tool, media can persuade audience for a cause. It calls for national level outreach campaign for enhancing peoples' awareness about the threats of climate change and measures for adaptation and mitigation. Therefore there is a need to first gauge the opinions and capabilities of key stakeholders and other potential partners through interactive surveys and raise awareness among masses as well as government agencies through mass media.²⁶ On certain occasions like World

Environment Day media persons while reporting from public places ask question from people to gauge their awareness about the environmental issues. People's response and perusal of media carrying news regarding the environmental problems indicate that climate change is still a low politics issue in the country. Education in various institutions can play an essential role in increasing the climate change adaptation and mitigation capacities of communities by enabling individuals to make informed decisions. It helps the people to understand the causes and consequences of climate change, prepares them to adapt to the impacts of climate change, and emancipates the people to adopt more sustainable lifestyles.

In 2008, in line with the prevalent global trends, Pakistan realized the hazards of climate change and constituted a task force to assess the problems related to climate change and formulate a policy. The task force, after deliberation process of 4 years came up with a policy frame work to tackle the future threats posed by climate change. But experts say policy formulation is one thing and its implementation another. Implementation of the policy could have been far more effective, if during the process of policy formulation the people should also been kept on board through public awareness campaign running/launched through mass media.

Ministry of Climate Change was established and later reduced to a division. Enmeshed in wide range of traditional and non-traditional threats, coupled with institutional incompetence, the Government of Pakistan could not give due importance to climate change. The problems related to climate change did not make important news items in the mass media of Pakistan. Nonetheless, media did highlight in October 2015 that despite being victim of dire consequences of climate change, Pakistan was falling short of her responsibilities regarding climate change.²⁷

No reckonable initiative with regards to implementation of climate change policy was taken despite the heat wave in Karachi, which killed more than 1200 citizens. Such inactivity is an indication that Pakistan has yet not realized the catastrophic issues of climate change neither the masses are ready to face the hazards of these changes nor the government is equipped.²⁸ Climate change adaptation would require \$ 6-14 billion annually till 2050.²⁹ Hence to tackle this issue Government resources are neither sufficient nor government departments are equipped to meet the challenges. Resources can be managed

from international sources that fund the projects, however respective government make practicable plans to solicit the funding. Government of Pakistan has not been forthcoming to convince international institutions to fund certain projects and turn this vulnerability into an opportunity.

Pakistan's Media and Climate Change

In a nation facing violence and an unprecedented energy shortage resulting into slow economic growth, the climate change tends to be relegated to lesser importance.³⁰ After having been liberalized in 2002, the television sector experienced a media boom. In the fierce competitive environment, commercial interests became paramount and quality of journalism gave way to sensationalism. Media's appetite for news was fulfilled by global war on terror stories. Being the battle field and frontline state, Pakistani media's attention was diverted to news regarding terrorism and related stories.

Pakistan's media sector is highly influenced by the ownership structure. There are four dominating media moguls, or large media groups in the country i.e. Jang, Express, Nawa-i-Waqt and Dawn. Due to their dominance in both print and broadcast industries all these media groups are very influential in politics and society. The media of Pakistan has seen a revolution during the last decade, particularly in the electronic media, where a large number of new TV and radio channels have been established.

Electronic Media

Presently, there are around 90 TV channels and 106 FM radio stations operating in the country. Today, there are 86 million viewers of TV in Pakistan, consisting of 38 million cable and satellite viewership and 48 million terrestrial viewership. In a large number of talk shows myriad political and security issues are debated but climate change does not get to due attention of media. However, merely on special days one odd segment is allocated to debate on climate. People between the ages of 26 to 45 years are the major consumers of news channels of televisions.³¹ With exception of one odd segment of talk show programme on environment, television channels do not focus on issues of public interest like environmental issues i.e. climate change, deforestation, pollution etc.

Among the electronic media, Pakistan Television is still the biggest television channel viewed on terrestrial domain. Likewise, radio channels especially FM radio can prove very effective medium for social change and

convincing people about sustainable use of resources. Climate Change must be included as theme by all private media channels. Government should devote a mandatory time on the state run television channel, where trained journalists and experts must hold programmes on climate change. Short documentaries on the theme of climate change will help a great deal. One such maiden Urdu documentary entitled *Pighalta Pakistan*³² (Melting Pakistan) prepared by Pakistan Muslim League (Q) is good initiative. This documentary has been shared to millions of viewers through social media. More such initiatives can create a 'critical mass' of people to engender an action for this issue of national security importance. Radio Pakistan aired a good short programme on environmental issues during first week of November 2016 which though insufficient is a good beginning. Such programmes being an effective communication need to be repeated for better outreach.

Print Media

There are approximately 945 newspapers in the country. The print media is published in 11 languages with Urdu and Sindhi as largest language groups. Urdu newspapers are dominant in rural areas, while the English media is mostly focused on urban consumers. Pakistan's English newspapers are mostly available in the urban areas and considered to be elite opinion makers. The readers of English newspapers are relatively more educated and the reporting pattern of English newspapers is also different than that of Urdu newspapers. General perception is that English papers are more balanced, objective and mature as compared to Urdu newspapers. It is because of standard of education and level of awareness of both the journalists and their audience. The print media devote a considerable chunk to economy, global news and other areas of human interest other than politics. The opinion pages of English newspapers are a mix blend of content mostly covering political commentary, war on terror, foreign policy, economy and form analytical view of government policies.³³

Despite having such a vibrant and large media, it has not raised the issue of climate change as it merits. Because of its enormity of the challenge it should have been in the media discourses and getting reasonably major chunk of reporting. Articles on climate change have started appearing in newspapers and journals but still the debate is not equal to the challenges. There are a few journalists like Rina Saeed Khan, who cover news and events related to climate change.

New Media

The new media includes internet and cellular phone. Popular applications among new media users are Twitter, Facebook, Whatsapp, Instagram etc. Dissemination of information through social media is quick and wide ranging. Conventional media consumption habits required in-depth processing of information through a particular form of media. For example, consumers read, watched, or viewed a news report in its entirety, typically within the context of a news publication or programme. Today, information is easier to access, thus more likely to traverse several forms of media. An individual may read an article on a news website and then forward part of it to a friend. That person in turn describes it to a co-worker without having seen the original context.³⁴ In the age of internet story moves faster than anything else. Twitter, Facebook and now Whatsapp have achieved monumental effects in spread of news faster than ever. It is said that the new media is too speedy to outflank. The new media has established its efficacy in case of Arab Spring and continues to attain prominence.

The salient characteristic of new media is innovative use of Information Communication Technology. Albeit, availability of new media depends upon socio-economic conditions and cultural environment of people, yet technology is becoming accessible and affordable. Thus its potential to an agent of change has increased exponentially. Today, there are more than 35 million websites containing word 'climate change', 'global warming' and 'greenhouse effect'.³⁵ This huge resource is available for use through new media, which is interactive method of communication. In Pakistan, there are 132.6 million cellular subscribers out of which 28.6 million have 3G/4G access and 317.7 million broadband connections. Thus new media resources are abundant enough to be exploited to awareness raising and running climate change campaign. Possibility of creating synergy among media, civil society and government to address climate change issue exists.

The general public in Pakistan lacks knowledge about climate change and sustainable use of resources. The public needs to know about climate change in the realm of science, contributing factors and policy with regards to adaptation etc. Media can contribute significantly in this regard. Why it is not happening effectively in Pakistan is because agents of change in media i.e. journalists and media persons are not fully aware of this complex and intertwined issue. Media house owners find it quite unattractive to fund for

journalists' training in climate change. There is no formal mechanism of training of journalists before they practically join media houses and specialize in climate change beat.

Social Media is the quickest way of dissemination and sharing of information as today's world is gelled into one global village due to invention of new technology. The new media has brought a revolution in communities with regard to awareness. The conventional media is also directly linked with social media. A careful and expert crafting of messages and their utilization on social media can be very effective in awareness campaign about climate changes.

Conclusion

Climate change-induced challenges pose an existential threat to Pakistan, which needs a coherent and immediate response at state level to avoid major catastrophe. Climate Change is global phenomenon but Pakistan is among top countries, which are most vulnerable to climate changes. Pakistan has been adversely affected due to climate change in the past few years. The floods and rising temperature are a recurring phenomenon due to climate change; floods of 2010 and heat wave manifested bitter reality of climate change. Pakistan will be one of the most affected countries in next two decades due to climate change. Due to her existing fragility, weak institutions, and lack of awareness, Pakistan is unlikely to cope up with the challenges of climate change. Comparing with threat level, the state of Pakistan is neither ready nor sufficiently equipped to respond to the challenge.

Pakistan's media has emerged as most vibrant and independent media in the world. It has gained massive reach to viewers, readers and listeners across the country. Pakistani media has extreme persuasion effects on government functionaries and masses alike. Given the immense power, increasing consciousness about climate change among the masses is well within the purview of media.

Pakistan's media though independent and effective but has to travel a long way to fulfill its social responsibilities and use its power for the development of the country. Due to existing phenomenon of war on terror, social problems and political instability in the country, media is more focused on these instead of other issues of great importance. Pakistani Media is not sufficiently trained and equipped to conduct debate on the issues like climate change and its

effects on human life. It needs training and collaboration with the State institutions as well as with international community for capacity-building for journalists to fully gear up for the challenge. Journalists need to be more educated about climate change environment to have better understanding of the subject. Illuminating works of prominent journalists and scientists on climate change are available, which may be put to use for the benefit of the country.

Climate change brings with it dreadful consequences and with every passing day new records of high temperature, drought leading to human insecurity are being reported. It is being seen as an existential threat to Pakistan. Thorough awareness and holistic consciousness about climate change is necessary for any successful policy to tackle the issue. Like most of the developing countries, the people of Pakistan are not sensitized enough to cope with the problem. The actions of Pakistani government to address the problem of climate change and formulation of National Climate Change Policy is not being implemented effectively. Reasons for ineffective implementation of National Climate Change Policy are many but the chief among these is strong will on the part of the government, the state institutions and the people. Favourable public opinion is vital for reaching at pragmatic solutions of this common good problem. If the policy is to be implemented by people, who do not support the cause whole heartedly, the efforts are least likely to be efficacious.

In the contemporary era, public opinion has assumed greater importance; people have to be convinced about various policies, strategies and actions. Media has enormous power to make essentially important public opinion to steer masses towards making and implementing policies. The awareness level about climate change varies in developed and developing countries about climate change. Generally 40% of the world has been categorized as the one aware of this new phenomenon, which is the most threatening for the world community. The countries, which have adopted preventive measures through awareness about climate change have suffered less fatalities and loss to property.

NOTES

- ¹ The term has been borrowed from Noam Chomsky's book entitled *Manufacturing Consent*, in which he opines about media's role in building and moulding public opinion.
- ² John Locke used the term fourth estate i.e. fourth pillar of the state, for media as explained in book Eric Louw's book entitled *The Media and the Political Process*.
- ³ Neil Carter, "Climate Change and Politics of Global Environment" in *Issues of 21st Century World politics*, Mark Beeson and Nick Bisley, eds. (New York: Palgrave Macmillan, 2013),
- ⁴ John Vidal, "Climate change: how a warming world is a threat to our food supplies", *The Guardian* 13 April 2013, <http://www.theguardian.com/environment/2013/apr/13/climate-change-threat-food-supplies>, accessed on May 31, 2016.
- ⁵ Dan Laughey, *Key Themes in Media Theory*, (Berkshire: Open University Press, 2007), 2.
- ⁶ Ibid, 22.
- ⁷ Climate Change in Africa, <http://unesdoc.unesco.org/images/0022/002254/225451e.pdf>, accessed on May 31, 2016.
- ⁸ Global Climate Risk Index 2015, <https://germanwatch.org/en/download/10333.pdf>, accessed on June 6, 2016.
- ⁹ 2016 Likely Hottest Year-to-Date in Modern Era, *Newsweek*, 18 November 2016, <http://newsweekpakistan.com/2016-likely-hottest-year-to-date-in-modern-era/>, accessed on 18 November 2016.
- ¹⁰ Pakistan among top two countries most affected by climate change, <http://www.thenews.com.pk/print/122169-Pakistan-among-top-two-countries-most-affected-by-climate-change>, accessed on June 2, 2016.
- ¹¹ ND-GAIN Country Index Ranking, <http://index.gain.org/>, accessed on 9 July 2016.
- ¹² Pakistan's Ticking Time Bomb: Climate Change, <http://thediplomat.com/2016/04/pakistans-ticking-time-bomb-climate-change>, accessed on May 28, 2016.
- ¹³ Ghulam, Afzal, Maida and Bukhari, *Climate Change in Pakistan* Pakistan Meteorological Department, Technical Report No. PMD-25/2012, 24.
- ¹⁴ Climate Change in Pakistan: Focused on Sindh Province, http://www.pmd.gov.pk/report_rnd.pdf, accessed on May 31, 2016.
- ¹⁵ "What to Expect during Karachi Heat Wave", *Daily Dawn*, 26 April 2016, <http://www.dawn.com/news/1254330>, accessed on 26 April 2016.
- ¹⁶ Shehrish Wasif, "Heat wave: Under scorching sun, Pakistan swelters", *The Tribune* 21 June 2015, <http://tribune.com.pk/story/907232/heat-wave-under-scorching-sun-pakistan-swelters/>, accessed on May 31, 2016.
- ¹⁷ Ibid.
- ¹⁸ Ahmedabad Heat Action Plan 2014, <https://www.nrdc.org/sites/default/files/ahmedabad-hap-evaluation.pdf>, accessed on May 31, 2016.
- ¹⁹ Sustainable Development Institute, *Food Security in Pakistan: Recent Trends and Way Forward*, http://www.sdpi.org/sdc/presentation-sdc/Abid-Krishna_Food-Security-in-Pakistan-Issues-and-way-Forward.pdf, accessed on 8 June 2016.
- ²⁰ Ibid.
- ²¹ John Vidal, "Climate change: how a warming world is a threat to our food supplies", *The Guardian* 13 April 2013, <http://www.theguardian.com/environment/2013/apr/13/climate-change-threat-food-supplies>, accessed on May 31, 2016.
- ²² Sustainable Development Institute, *Food Security in Pakistan: Recent Trends and Way Forward*, http://www.sdpi.org/sdc/presentation-sdc/Abid-Krishna_Food-Security-in-Pakistan-Issues-and-way-Forward.pdf, accessed on 8 June 2016.
- ²³ Ibid.
- ²⁴ Michael Kugelman, *Hunger Pains: Pakistan's Food Insecurity*, (Washington D.C: Woodrow Wilson International Center for Scholars, 2010), 21.
- ²⁵ Climate Change Awareness and Concern in 119 Countries, <http://climatecommunication.yale.edu/publications/analysis-of-a-119-country-survey-predicts-global-climate-change-awareness/> accessed on 1 June, 2016.
- ²⁶ National Climate Change Policy, http://www.lead.org.pk/cc/attachments/Resource_Center/NAP/pakistan.pdf, accessed on May 31, 2016.
- ²⁷ Sherry Rehman, Missing out on Climate Diplomacy, *The Express Tribune* 31 October 2016.

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- ²⁸ National Climate Change Policy, <http://www.mocc.gov.pk/gop/index.php> , accessed on May 31, 2016.
- ²⁹ Climate Change: A Snapshot, United Nations Information Centre Islamabad, www.ambafrance-pk.org/Climate-Change-and-COP21-a-snapshot-3442, accessed on June 3, 2016.
- ³⁰ Pakistan's climate change 'time bomb' is already ticking, <http://tribune.com.pk/story/976105/pakistans-climate-change-time-bomb-is-already-ticking/>, accessed on May 28, 2016.
- ³¹ Ibid.
- ³² *Pighalta Pakistan*, <https://www.youtube.com/watch?v=spCpMb4PwZo> , accessed on May 25, 2016.
- ³³ Gulmina Bilal Ahmed et al, *Conversation with and on the Media*, http://www.individualland.com/index.php?option=com_rokdownloads&view=file&Itemid=399, accessed on June 1, 2016.
- ³⁴ Media Effects, <http://2012books.lardbucket.org/books/mass-communication-media-and-culture/so5-media-effects.html> , accessed on June 1, 2016.
- ³⁵ Saffron O' Neill and Maxwell Boykoff, *The Role of New Media in Engaging the Public with Climate Change*, http://sciencepolicy.colorado.edu/admin/publication_files/2011.04.pdf, accessed on May 7, 2016.