

Assessing Print Media Coverage on Environmental Issues in Pakistan: A Study of Major Newspapers in Pakistan

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Abstract

Nowadays, Pakistan faces severe environmental problems in spite of existing laws willing to defend the sustainable environment. In today's environmental crisis, print media has a unique role to play among various stakeholders which consists of policy makers, Government, NGO's and the public at large level. No one can deny from the role of print media as a source of information about education for millions of readers. There are many newspapers such as national Urdu, English and regional published daily in Pakistan. In Pakistan, media is also divided language with series of media in vernacular languages including Sindhi, Punjabi and Pashto. In this research, the content analysis of three newspapers Daily Dawn, Daily Jang and Daily Kawish was done of 2016, year to check the Length and Frequency of five major environmental issues Water Crisis, Agriculture Crisis, Pollution, Climate change and Deforestation. The data of following issues were analyzed by using tabulations month wise and finally year wise. English newspaper Dawn has given more coverage to these concerned issues, while secondly Urdu Jang newspaper has given coverage and Kawish has covered less number of stories regarding five major environmental issues.

Keywords: Environment; Print Media; Newspapers; Communications; Pakistan.

1. Introduction

Environment surrounds our livings. Environment comprises of the physical, chemical, ecological, biological and other natural surroundings. Thing lives in their own environment. They frequently act together with it and adjust themselves to circumstances in their environment. In the environment, there are the various communications between ecosystems and non-living things. Media coverage on environment and its impacts on human beings are necessary because it affects human life. Science journalism or environmental communication plays the vital role in coverage on environment. Weak management, ill financial conditions; illiteracy rate growing in Pakistan and over populations has hazardous impacts on country's environment (Yousif, et

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al 2013). Media has participated in situation observation and creating consciousness on environmental issues. In the precedent decades, supporting long term and environmental consciousness have expanded media concentration. Due to rising media exposure, our society is becoming more conscious of the property that our activities put on the health of the environment. In this regard, the media has a giant function to cooperate in making people aware of environment problems. Media has forever enclosed public and environmental issues thus it is the mainly innovative mechanism for scattering perception to environment defense.

The function of media is one of the mainly significant aspects and basic knowledge of environmental problems, that only be true on the circumstances firstly, mass media are available to huge extent of the population, second, are contributing some time on environmental issues and third, public are paying attention in information on environmental issues presented by the media so that they observe or listen to the equal agendas and read newspaper articles or other written journal dealing with environmental issues. In communicating regarding environmental issues and their awareness the society's sensitiveness are not stable and the organizations are still showing lack of interests on environmental journalism, in context of environmental issues while Pakistan comes in more vulnerable countries in world record. Pakistan is facing environmental issues like natural resource deprivation, contamination of renewable fresh water resources, use of dangerous insect killer, toxic waste of all kind, solid waste, soil deprivation, desertification, and defeat of diversity, industrial devastate improper management and others. Due to Inadequate planning's from Concerned public private Organizations pollution has raised as main issue concerned to environment in Pakistan (Gabol & Ahmed, 2011).

2. Problem Statement

Environmental issues are very extensive, and have a collision on every characteristic of life. No one is unaltered by the force full contact of environmental problems. Though, the stage of susceptibility different from place to place and sector to sector. Pakistan is in the list of environmental vulnerable countries. The environmental problems and Obstacles being faced by Pakistan are very serious and needs research in that sense Print media have important role by contents Publications, Newspaper Media can have essential role in framing and covering environmental stories for better development awareness.

3. Review of Literature

Moreover, Pleasant, Good, Shanahan & Cohen (2002) conducted research on literature of environmental communication or issues and collected all matching research papers contents in the field of Public science journal text from related index from 1945 to 2001. Their results as shown that research in communication environment certainly started to rotten in 1985, when the

number of environmental editorial Articles got twice. Their study concluded that, significant numbers of an educational literature on environment and communication spread in diverse journals of Media and Communication science and threat, there should be a particular periodical present negotiation on issues concerned to environment.

Huma (2018) indicated that most of the reporters have required the theme of environment and climate change knowledge about embarrassment of indefinite stories. Media is remembered as fourth pillars of state it helps governments to shape its policies and brings the issues towards notice of governments. Climate change and other environmental issues are getting the significance in Pakistani media because of rising climate change calamities and challenges in Pakistan, and indeed due to increasing capacity. Media played an active function in fighting climate change hazards in the past. Likewise, the media is providing good information and aware the public regarding climate change on heat waves issue in 2015, and smog in 2016-17, is also considerable work. The timely coverage weather forecast by media assists the farmers in far-off areas to take defensive measures in Pakistan, much of news focused on personalities not on issues.

According to Funk Houser et al., (1973) conducted study trend in media coverage issues of 60's has resulted that environmental problems were largely talked about the coverage of environmental news stories that still stay behind short in the nearly 1960s partially because the field of environment was quite a fresh area for reporters. Not from 1969, did the beat of atmosphere which developed into one of the mainly commonly, and it was showed that most of the Canadian and American newspaper published news stories. For instance, the quantity of environmental stories in time extended from time wise four articles in 1961, to 14 in 1969, and 19 in 1970.

Ali (2012) studied the Issues faces environment in Lahore and their exposure and concluded that environmental laws are present in Pakistan to protect environment, but despite of that country face serious environmental problems. In that position, print media plays very important responsibility in constructing harmony between stakeholders of society comprising policy makers, non-governmental organizations, and the masses at mega level. Print media plays three major functions in the environmental argument: first is to educate, second is to expose, and =third is to encourage discuss. Thus, such the illustrations of the environment form many observations of atmosphere issues and deliberation for environmental authority.

Yousif et al., (2013) conducted study on reporting of environmental issues in Pakistani press they had found that environmental journalists countenance a number of disputes. In Pakistan, especially print media editorial policy of major newspapers does not give precedence to issues related to environment and climate change. They also resulted that country is going through status of conflict and socio-political disorder and creating the hindrances for consideration of environmental issues. There are no

questionable and honest editorial, pressures between government, business and newsrooms too showed severe health and security fear for journalists.

The study was conducted by McCann Marie (2010) on climate change in America where in the study, it was indicated that mass media has played an important role about climate change information and Environment 1989 to 2009, exposure on climate change, the research method content analysis about 476 articles were executed whereas the study revealed that main objective of the study as utilized to cover up climate change, political and financial frame information. They also concluded a move far from arranging the science as unbiased to a legitimate science frame. Investigating that climate change frames were used to establish the climate change news published in magazine as a major source of information has repeatedly been framed in news magazines as a major political problem and more and more as a social and cultural issue as well. Parlour and Schatzow (1978) study about the media and public affiliation for environmental issues in Canada, as resulted that few scholars think the changes were the habit of media. They considered that environmental reporting has fallen because the media curved to other attractive issues, for example unemployment, inflation and governance in the early 1970s.

According to Dustageer (2019), climate disaster does not wait around for doomsday as resulted that climate change can be gravest risk to bear, but given how the daily news cycle works, the issue is more often than not surpass by other apparently faster developments already occurred in Pakistan. For instance, we are observing severe weather situations series from hotter than usual monsoon year to years. Abundantly, it was showed that public and official activities are the responsible for this change.

Sharif et al. (2018) has showed about news reporting on environment and climate change in Pakistan. The qualitative interviews were conducted from the environmental journalists' reporters and experts the aims of study were to discover the aspect accountable intended for the inadequate reporting of climate change in the news media, ways to uncertainty, ambiguity, elimination and low levels of climate change knowledge in Pakistan. Quantitative semi-structured interview was carried out with media experts and the conclusion prove that social cultural, economic, cultural, political technological and scientific forms have power over the news coverage of climate change problem.

4. Newspapers Research

Dawn

Dawn is one of the oldest English newspaper in Pakistan and the flagship of the Dawn groups of newspapers. DAWN is published by Pakistan Herald Publication. It was founded by Quaid-i-Azam Mohammad Ali Jinnah in Delhi India on 26 October 1941, as an ambassador for the Muslim League. As of

2010, it has a weekday circulation of over 109,000. The CEO of Dawn group is Hameed Haroon.

Jang

The Jang media group started daily Jang newspaper before the independence of Pakistan from Delhi in 1939. The group is now the largest and the fastest growing media group in Pakistan with a diversified portfolio of media in Pakistan. Daily Circulation: 700,000, Sunday Circulation: 875,000 No. of Pages: Weekdays 16-20. Sunday's 52 Daily Jang is Group's flagship brand & Pakistan's largest newspaper. It is published from Karachi, Lahore, Islamabad/Rawalpindi, Quetta and Multan.

Kawish

Daily Kawish is one of the leading Sindhi newspaper published from Hyderabad Sindh. This newspaper is very famous and popular among masses which publish in Sindhi language. The owner of this newspaper is Kazi brothers that started on 3rd August 1990. The head office of daily Kawish is in Hyderabad Pakistan, and official website of this e-paper is www.thekawish.com it has daily circulation of 105,000.

5. Identified Environmental Issues in Pakistan

1. Water crisis
2. Agriculture crisis
3. Pollutions
4. Climate change
5. Deforestation

5.1 Water Crisis

According to united nation development program (UNDP); Pakistan is careless about the imminent water crisis and affecting severely hazard to the country's constancy. Researchers opined that countries of south Asian would dry out by 2025. The main risk Pakistan facing today is not terrorism, but water crisis. Water issues being faced by Pakistan were recently discussed in national, international media and policy makers, but recent (UNDP) Report on water crisis in Pakistan were severe, although ignored by authorities, the conflict of south Asian countries to fight with in near future (GOP, 2010).

5.2 Agriculture Crisis

Agriculture is backbone of Pakistan. Agriculture plays a vital role in input for the GDP. Pakistan observed several changes in governance policies from its beginnings. The economic sector majorly depends on the agriculture; it was concluded that in past habitually rulers highlighted upon expand his rules. Instead of memorized in the history for their long term visions they hostage the peoples by un-gotten promises and unclear objectives.

5.3 Pollutions

Environmental pollution means contamination unwanted materials in the environment disturbing the living planet. Evidently the human beings themselves responsible for producing pollutants in atmosphere. 10 million people in the world every year die from the eating or inspiring of these kind of contamination (Kazi, 2014).

5.3.1 Kinds of Pollution

1. Air pollution
2. Water pollution
3. Land pollution
4. Noise pollution

5.3.2 Air Pollution

Very high levels of perched particulate substance are present about 6 times superior to world health organizations. Approximately of 16.28 million populations of Pakistanis, 40 percent of urban populations are beneath threat of air pollution, which estimates 25.7 billion each year on report of health for not adopting the WHO air quality principles.

5.3.3 Water pollution

Water pollution is main risk to health in Pakistan. The quality of the fresh water is badly administered and examined. Our country Pakistan ranked 80 numbers among 122 nations concerning fresh drinking water worth. Equally exterior and underground water are polluted by toxic metals and insect killer in overall country. Different WHO parameters are debased. Human being disposals of industry, urban areas agrochemicals are major elements causal to the decreasing quality of fresh water. Microbial and chemicals are main cause of human health problems (Farhat, et al., 2014). Due to disturbing increase in population and speedy industrialization, drinking water quality is being declined day by day in Pakistan. Conclusion of the different research studies carryout to check quality of fresh drinking water quality checks from different areas of Pakistan in relation the physicochemical properties of drinking water and occurrences of pathogenic microorganisms. Due to shortage of fresh drinking water resources in Pakistan 80% of country's population use polluted drinking water. Only 20% of Pakistan's peoples have facility of fresh drinking water.

The prime reason of water pollution is sewerage human and animal fecal which largely released into the fresh drinking water supply source. Second water pollution causes are industrial wastage in the form of chemicals, toxic materials while pesticides and fertilizers came from agriculture machinery and process pollutes the drinking water sources. Anthropogenic actions are the major cause of human waterborne diseases which form 80% of other diseases that can leads to 33% deaths overall. This analysis raises the quality of drinking water, source of fresh water contamination, condition of

sanitation and consequences of contaminated drinking water on human beings. The actions are needed urgently to acquire safe measures and manage technologies to beat unhealthy situation of fresh drinking water supplies in different parts of Pakistan. (M.K Daud, et al., 2017).

5.3.4 Land Pollution

Land pollution the discharge of solid waste and liquids waste matters on land or undergrounds. The mismanaged way of discharge can contaminate the fresh soil and groundwater. This condition can threaten major public health and can cause ugly situations and irritation to living beings. A rising population means an increasing quantity of solid devastate that is produced. The Pakistan according to the report of EPA Environmental Protection the home waste producing very high, and it is very alarm situation the number per capita is 0.283kg to 0.613kg per day, by per house is 1.896 kg to 4.29 kg per day. In Big City Karachi Pakistan, the devastate that is produced surrounded 8.41 per paper, 8.11 per cent cardboard, 6.20 per cent plastic, 5.21 per cent glass, 4.08 per cent & metal and 8.93 per cent textiles.

Pakistan total household wastage is around 41% which shortage of appropriate arrangement for reuse waste outcome in increasing dumping point where the waste is burnt to decrease gathering of waste. Though, this is what characteristic to air pollution and greenhouse effect. Luckily, the population of large cities of Pakistan are creating household waste which is frequently eco-friendly. A realistic way to decrease land pollution in Pakistan there would be to execute recycling centers of large capability. This way, in its place of arranging waste in landfills, garbage can be recycled to save energy. For example, by recycling aluminum, 95 per cent of energy is saved from what is necessary to take out raw ores (Kazi, 2014).

5.3.5 Noise Pollution

Most of the big cities of Pakistan such as Karachi, Lahore, Islamabad and Rawalpindi are facing big problem of noise pollution. The major causes of this pollution are traffic noise caused by autos like buses, cars, trucks, rickshaws and water tankers. The traffic noise levels limited by national environment quality standards, environmental protection agency are 85 db.

The higher level of noise can cause the hearing and non-auditory health issues to human beings. There are just some undecided rules and policies in troubled to noise levels, no responsibility performed while federal and provincial environmental agencies taken the numerous complaints on noise pollution from public and incapable to take satisfactory actions. Unwanted sound for human hearing is noise pollution, when it disturbs the performance of man and other species in the environment. Sound is calculated in *decibels*. The effect of hearing varies from person to person, some peoples have strong sensitive ears to loud compare to others but the limit to consider in pollution is though not affirmed but commonly it is considered that sound ranging 70-80 DB or higher is dangerous to hearing of human beings. Though some conditions noise ranges 70-80 db. And higher is

harmful to human being ears. Now a days, noise recorded in Pakistan cities as 76.5db in Karachi, 72.5 in Islamabad and a high of 86 db in Peshawar is the proof of noise pollution in Pakistan is threat in our society, but not taken serious though the issue of the different environmental is not visible in many places as land, water pollution or any other pollution. Town planning is main for it residential areas might be separated from industrial areas, industry in main cause of noise pollution in cities. In case of rural areas, there are no noise pollution rural areas that can be found are noiseless and calmer with no unwanted sound, where it is found in urban areas where heavy traffic is routine, heavy Machinery in Industries more rush due to pollution. Modern era with the development of technology, machine work controlling our whole work like Weather, Domestic, Industrial and Agricultural field too.

6. Climate Change

The fright of climate change and global warming in Pakistan due to melting of heavy glaciers at Himalayas, intimidating the volume flow rate of the majority important rivers of Pakistan. In our country these results are expected to distress millions of populations. The outcome of regular climate change, the climate of Pakistan has gradually unstable more than past numerous decades; this movement is estimated to continue. Pakistan construct a miniature input to total global greenhouse gases (GHG) emission, less than 1 % ranked lowest in the world but still it comes in most vulnerable countries of climate change. Pakistan has least technological and financial stability to adjust to its poor impacts.

7. Deforestation

Forests are main natural aspect that control and settle on climate and weather patterns and control amount the Co₂ of an area. With fast pace of industrialization and urbanization; there are major speedy deforestation happened and affected the global temperature level. Speedy and uncontrolled deforestation process occurred due to ill governance issues. Fast paced deforestation or natural forest cover destruction has resulted hazardous natural disasters during last decades. Deforestation has created major impacts on climate change and its consequences on environment in Pakistan. Pakistan is majorly affected from the process of deforestation and lost main cover of forests, about 39000 H of afforest are being cut every year, it's very dangerous that Pakistan may misplace most of its forest within the next thirty to forty years (Ali et al., 2014).

8. Objectives of the Study

1. To explore the Coverage of Newspapers on major environmental problems in Pakistan
2. To Check Frequency and Length of Selected Newspapers and to explore how print media framing environmental News information

9. Methodology

The Current research is intended to examine the coverage of the environment and its problems to explore that by what mean efficiently print media have given Coverage to the systematic aspect of environmental issues facing to Pakistan. Thomas. R & L Brubaker (2002), has suggested that the Methodology is used to denote the steps; the quantitative content analysis was applied for data collection from three newspapers, two national and one regional were selected for this study. The (DAWN), (JANG) and (Kawish) are the universe for this study. The selected editions of daily Dawn and daily Jung arc from Karachi editions and the edition of daily Kawish is Hyderabad, the editions are selected for these newspapers are based on their place of origin. These newspapers were selected for this study because of their significance, popularity in audience. These newspapers also differ in languages including English Urdu and Sindhi. The comparisons of content will be measured; and each newspaper has separate in aspect of language interpretation section of audience in country. Three Newspapers are Sample for this Study Daily Dawn, Daily Jang Daily Kawish from January 1 to December 31 year of 2016. Data was collected of the identified major environmental issues and problems in Pakistan affecting lives. The News stories, articles, feature stories, columns, editorial columns, advertisements and letter to editors, Published editions in the year of 2016. The selected newspapers were collected through using library archive. The newspapers of study keep the separate existence of audience, behavior, size and composition. Data was collected of identified major environmental problems in Pakistan affecting lives. The Content Analysis Method was taken on to discover and inspect the coverage that print media and give to environmental issues. The examination of Content has done of three major newspapers of Pakistan for one year. Three Newspapers Selected the Daily Dawn that is the biggest broadly distributed English Newspaper whereas the daily Jang is the major broadly spread Urdu Newspaper, and Daily Kawish is widely circulated popular Sindhi. Newspaper Coverage of ten issues was analyzed.

10. Result and Discussion

According to table 1 total three newspapers were selected for data collection about environmental issues and problems in Pakistan first the result was analyzed of Dawn newspaper. In the year of 2016, the daily dawn published 117 stories covered frequencies, the five issues with the above mentioned frequencies and length; it has given coverage to 28% of water crisis and 33 stories with 29% of total length of height and width, agriculture crisis 11 percent% with 14 stories and 13% total length, pollution with 21 percent with 25 stories with 24% total length, climate change 23 percent with 27 stories with 18% total length while deforestation has 15 percent with 18 stories and 14% of total given length.

Table 1 Dawn Newspapers frequency and length in 2016

Issues	Frequency	Percentage %
Water Crisis	33 Stories	28 %
Agriculture Crisis	14 Stories	11 %
Pollution	25 Stories	21 %
Climate Change	27 Stories	23 %
Deforestation	18 Stories	15 %
Total	117 stories	

Data from table 2 in the whole year of 2016, the daily Jang published 110 stories covered frequencies, five issues with the above mentioned frequencies and length :it has given coverage to 40% of water crisis with 44 stories while 43% total length, agriculture crisis were 12% with 14 stories of 15% of length, it has given pollution 30% with 33 stories around 26% of total length, the climate change 16% about 18 stories whole year while regarding the deforestation 0.90 percent with only one single story in whole year with 0.70% of total length published in Jang newspaper

Table 2 Jang Newspaper frequency and length in 2016

Issues	Frequency	Percentage %
Water Crisis	44 Stories	40 %
Agriculture Crisis	14 Stories	12 %
Pollution	33 Stories	30 %
Climate Change	18 Stories	16 %
Deforestation	1 Story	0.90 %
Total	110	

According to the table 3 in the whole year of 2016 the daily Kawish published 73 stories covered frequencies, five issues with above mentioned frequencies and length; it has given coverage to 47% of water crisis with 35 stories of 45% total length, agriculture crisis news were 4% with 3 stories and 2.5% total given length, pollution 30% with 22 stories and 37.4% of total given length, climate change 6% with 5 stories and 3.27% total given length while deforestation 10% with 8 stories and around 11% of total given length.

Table 3 Daily Kawish Newspaper frequency and length in 2016

Issues	Frequency	Percentage %
Water Crisis	35 Stories	47 %
Agriculture Crisis	3 Stories	4 %
Pollution	22 Stories	30 %
Climate Change	5 Stories	6 %
Deforestation	8 Story	10 %
Total	73 Stories	

According to the table 4 the environmental issues where the Dawn published 117 news about water crisis, agriculture crisis pollution climate change and

deforestation with 39% where the daily Jang published 110 news about environmental issues of Pakistan. However, the kawish published overall 73 news about pollution, climate change, water crisis and deforestation. It was showed that Dawn newspaper given more coverage and highlighted the issues of environment in 2016.

Table 4 Overall measured frequencies of three newspapers 2016

Newspaper	Environmental Issues		Percentage (%)
	-Water Crisis -Pollution -Deforestation	-Agriculture Crisis -Climate Change	
Dawn	117		39%
Jang	110		37%
Kawish	73		24%
Total	299		

Source: Content Analysis year 2016

11. Conclusion

When explored the major environmental issues in Pakistan throughout three mainstream newspapers Dawn, Jang and Kawish. The findings showed that Pakistani print media does not plan major environmental issues at a national level. One year 2016, studied with the help of two national and one regional newspapers showed print media in Pakistan limited the theme of environment to event-based reporting. For example, news about protests about water crisis; weather forecasts; and press briefings and article writings with no more in-depth insights and research derived from newspapers coverage.

Reference

- Ali S. (2012). Thesis Environmental Problems of Lahore and their Reporting, *Lahore School of Economics*.
- Ali A. and S.R. (2014). Deforestation and its Impacts on Climate Change an Overview of Pakistan, National University of Sciences and Technology Islamabad, Pakistan *Global Change*, 21, 51–60.
- Dustageer G. (2019). Article climate catastrophe: don't wait around doomsday, *The Express Tribune*, Section Food. Retrieved from [https://tribune.com.pk/story/2041473/1-climate-catastrophe-dont-wait-around doomsday/](https://tribune.com.pk/story/2041473/1-climate-catastrophe-dont-wait-around-doomsday/)
- Farhat N. A. et al. (2014). Water pollution in Pakistan and impacts on public health- A review, *Environmental Science and Pollution Research*, Vol. 21 No. 24, 53-61.
- Funkhouser, G. Ray. (1973). Trend in Media Coverage of the Issues of the '60s, *Journalism Quarterly* 50 (Autumn), 533-538.

- Gabol, W. A., & Ahmed, A. (2011). Identification of future environmental challenges in Pakistan by 2025 through environment foresight. *African Journal of Environmental Science and Technology*, 5(10), 807-814.
- Government of Pakistan (GOP). (2010). *Task Force on Climate Change: Final Report*. Islamabad: Planning Commission.
- Huma, Zile (2018). Reporting on Climate Change, *Daily Times*. Retrieved from <https://dailytimes.com.pk/192794/reporting-climate-change/>
- Kazi A. (2014) Appraisal of air and water pollution in Hyderabad and Karachi, Pakistan, *Quaid-e-Awam University Research Journal of Engineering, Science & Technology*, Vol. 13, No, 1, 163-174.
- McCann, M. (2010). A Framing Study of Media Coverage on Climate Change from 1989 to 2009. Retrieved from http://scholarworks.sjsu.edu/etd_theses
- M. K. Daud, Muhammad Nafees, Shafaqat Ali, Muhammad Rizwan, Raees Ahmad Bajwa, Muhammad Bilal Shakoor, Muhammad Umair Arshad, Shahzad Ali Shahid Chatha, Farah Deeba, Waheed Murad, Ijaz Malook, Shui Jin Zhu, (2017). Drinking Water Quality Status and Contamination in Pakistan, *BioMed Research International*, doi.org/10.1155/2017/7908183
- Pleasant, A., Good J., Shanahan J., & Cohen, B. (2002). The literature of environmental communication. *Public Understanding of Science* 11(2), 197-205
- Safdar T. (2014). Agricultural Crisis in Pakistan, *The Express Tribune*. Retrieved from <https://tribune.com.pk/story/661560/agricultural-crisis-in-pakistan/>
- Sharif, A., & Medvecky, F. (2018). Climate change news reporting in Pakistan: a qualitative analysis of environmental journalists and the barriers they face. *Journal of Science Communication*, 17(1), A03.
- United Nations Environment Programme (UNEP), (2006). *Environmental Reporting for African journalists: A Handbook of Key Environmental Issues and Concepts*. Retrieved from http://www.unep/training/downloads/PDFs/journ_hb.pdf
- Yousaf, Z., Huma, Z., & Ali, E. (2013). Reporting of environmental issues in Pakistani Press. *World Applied Sciences Journal*, 28(6), 829-834.