

ENVIRONMENTAL PROBLEMS OF THE INDUS DELTA IN PAKISTANI PRINT MEDIA: AN AGENDA SETTING ANALYSIS

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ABSTRACT

Environmental degradation and climate change are considered as burning issues of human society in these days and media is playing an important role in development of public perception about such issues. In this context, the Indus Delta region of Pakistan is one of the highly vulnerable regions as far as the issues of climate change and environmental degradation are concerned. This article is aimed at evaluating the role of Pakistani print media in highlighting the environmental problems of the Indus Delta region. The article is based on content analysis of selected Sindhi, Urdu and English newspapers to evaluate the role of print media in setting public agenda regarding environmental issues.

Keywords: Environmental Problems, Climate Change, Agenda Setting, Indus Delta

INTRODUCTION

Environmental issues are creating problems for fragile economies of developing countries (Sengupta, 2010). The countries like Pakistan are facing multiple threats due to climate change and environmental degradation including changing rainfall patterns, natural calamities, rising temperatures, land erosion and degradation, sea level rise, glacier melting etc (Joyo & Ram, 2016). In terms of its geology, topography and meteorology the country is vulnerable to both natural and man-made disasters including floods, droughts, landslides and cyclones (Wahid Ullah & Takaaki, 2016). According to Global Climate Risk Index (2017) Pakistan was among the top ten countries who suffered the most due to extreme weather events during the period from 1996 to 2015 (Kreft *et.al.*, 2017).

Moreover, the climate change is emerged as a threat to natural systems all around the world; however, world wetlands are more vulnerable to climate change (Ervin, 2008). Particularly, the deltaic regions are most endangered ecosystems in the world due to sea level rise and other reasons (Hillen *et.al.*, n.d). The Indus Delta of Pakistan which is sixth largest delta of the world is also facing several environmental problems and due to reduction in fresh water the traditional livelihood of millions of people is under threat (Peracha *et.al.*, 2017). The mangroves ecosystem of Indus Delta is enormously important due to its biological productivity and ecological role for a healthy coastal environment (Amjad *et.al.*, 2016).

In this context, awareness about environmental problems of the Indus Delta at public and policy making level becomes highly significant, as it may help in development of a suitable adaptation strategy to mitigate the negative impacts of climate change. Hence, this situation requires an active role of media to highlight the problems as it may shape public perception about governmental policies and create environmental resilience among the people (Boyagoda, 2017). Owing to the importance of role of media in highlighting of the environment related issues and rising interest of researchers in the area a sub field of “environmental communication” has emerged within the discipline of communication (Littlejohn & Foss, 2009). The research and scholarship in this area is considered necessary for achieving the targets of sustainability science (Lindenfeld, 2102).

Additionally, this study is related to the field of environmental communication research and thus this article investigates the agenda setting role of print media regarding environmental problems of the Indus Delta region of Pakistan. The agenda setting theory explains the role of media in influencing the public to what to think about or to focus on certain issues highlighted in news coverage and the way the media prioritize the issues and set the agenda for public (Littlejohn & Foss, 2009). Therefore, the media attention has emerged as an important variable in communication research, as it shapes both elite and public behaviour (Atkinson *et.al.*, 2014). Thus, this article is aimed at examining the media attention towards the environmental issues of the Indus Delta in Pakistan. The content of the selected newspapers during an specific period were analyzed to measure the average coverage, placement of the news, types of items published, and use of visuals to highlight the environmental issues of the Indus Delta.

RESEARCH METHODOLOGY

The method of content analysis involving the quantification of the manifest content of the selected newspapers has been used to analyze the patterns in news coverage related to the environmental issues of Indus Delta. The content analysis has been used in mass communication and other fields to describe content and to test theory derived hypothesis (Daniel, Frederick & Stephen, 1998:17). Krippendorff (2004:18) define it as “a research technique for making replicable and valid references from texts (or other meaningful matter) to the contexts of their use”. Moreover according to Kerlinger (1986) the method of content analysis is useful for systematic study of communication texts to measure variables. The use of quantitative measures on representative samples of data permits researchers to assess the representativeness of their samples, and thus use powerful statistical tools to test hypotheses and answer research questions” (Daniel, Frederick & Stephen, 1998:26).

Sample Selection

Three Pakistani newspapers are selected for the content analysis section of the study. The criteria for their selection are:

- To be a major daily,
- To be available electronically in e-paper format,
- To be published in Urdu, Sindhi and English languages,
- To be published from Sindh province.

These language groups are selected, because, Urdu and Sindhi are the largest language groups in terms of newspaper journalism in Pakistan and the English print media have an impact among opinion makers, politicians, the business community and the upper strata of society in general” (Media in Pakistan, 2009:20). Availability of newspapers in e-paper format is required because the whole sample needs to be analyzed in the same format as it is published for the print version readers. The daily newspaper *Jang* is selected to represent Urdu press in Pakistan. It is “the most widely read newspaper in the country, with an estimated daily circulation of 850,000, followed by *Nawa-i-Waqt* with 500,000” (Shah, 2010:1). This newspaper belongs to the Jang media group of Pakistan which also owns the English newspaper *The News* and the Geo Television network. This newspaper was selected on the basis of its popularity and large circulation.

The second newspaper selected for this study to represent the English press is *Daily Express Tribune*. Initially, it was proposed that English newspaper *Daily Dawn* will be selected for this study, but, the issues of the newspaper for year 2012 are not available in e-paper format. Though, the web editions of *Daily Dawn* for year 2012 are available online, but they may not contain all the news published in the print edition. The print editions of major English newspaper *Daily Express Tribune* are available in e-paper format online. The newspaper “is part of the Express Media Group’s other flagship media brands which include, the *Daily Express*, Express News, and Express 24/7 news channel” (*The Express Tribune* April 12, 2010).

Daily Kawish was selected to represent the regional Sindhi press. The Sindhi newspapers are the second most important language group after the Urdu newspapers (Media in Pakistan 2009,). Apart from this, representation of Sindhi newspapers is also necessary for this study, because, the majority of the people in the Sindh province where Indus Delta is located are Sindhi speaking. *Daily Kawish* claims itself to be the largest circulated Sindhi daily newspaper of Pakistan (Kawish, 2013). In media circles it is considered a most popular Sindhi newspaper (*Daily Dawn* 2013, January 31, 2013). The Kawish group also runs the KTN television network in Sindhi language.

Indus Delta region is part of Sindh province of Pakistan; therefore, the newspapers published from Hyderabad and Karachi, two metropolitan cities of Sindh province are selected for this study. *Daily Jang* newspaper is also

published from other provinces of Pakistan, but for this study issues of *Daily Jang* Karachi will be analyzed. The newspapers from three major language groups are selected to know the similarities and dissimilarities in pattern of coverage of the environmental issues of Indus Delta across the linguistic divide in major newspapers published from Sindh province of Pakistan. In a similar study, Young & Dugas (2012) found considerable dissimilarities in coverage of climate change issues by the French and English newspapers in Canada.

The content of these newspapers is available online and their e-paper versions are analyzed for this study. Due to non-availability of a database to draw the sample a limited number of issues were selected for the analysis. One third of the total number of the issues of these newspapers published in year 2012 (120 issues of each of the three newspapers) are to be randomly selected to be analyzed. To ensure the representative quality of the sample ten issues of the each newspaper for each month of the year 2102 were randomly selected. Ten random numbers for each month of year 2012 were generated with the help of the web based online random generator of educational resource of Psychic Science (Physic Science, 2013).

TABLE-1
THE SAMPLE SELECTED FOR THE STUDY

Newspaper	Number of publication selected	Percentage (%)
<i>Daily Jang</i>	120	(33.3)
<i>Daily Dawn</i>	120	(33.3)
<i>Daily Kawish</i>	120	(33.3)
Total	360	(100)

The content of these newspapers was available online and their e-paper versions were analyzed for this study. In case of non-availability of the e-paper version for any publication or period manual analysis of the print version was made. As that was necessary because the whole sample needs to be analyzed in same format as they were published for the print version readers.

Time Period

Time period of year 2012 is selected for this study; because, apart from existing environmental problems many issues related with Indus Delta surfaced in the media during this period. This includes the issues of establishment of a mega coastal city of Zulifiqar Abad and construction of another water development and power generation projects on Indus River. Environmental and community groups expressed their concerns about the potential ecological fallouts of the proposed projects for the Indus Delta

Region. So, the selection of this period may be useful in analyzing the media coverage of the environmental concerns regarding these projects along with the already existing ecological problems.

RESEARCH DESIGN

The empirical evidence to address the research objectives related with the theoretical backgrounds of agenda setting was to be generated through the content scanning of each newspaper in systematic manner to categorize the printed matter according to the coding scheme of the study. The individual articles were treated as the units of analysis and they were analyzed in terms of frequency, article length, and placement to evaluate the prominence measure. For this purpose the content of the whole sample was searched for the articles related with environment in general and environmental issues of the Indus Delta. All the relevant data was divided into different categories or codes. The coding scheme for this study was prepared on the basis of prior expectation, pilot investigation and expert advice. Thus, the collected data for this study was quantified as per following coding scheme:

Coding Scheme: Frequency, page number, article length and use of photography were coded as the variables to evaluate the newsworthiness of the environmental issues of Indus Delta in the selected newspapers.

Environmental News Defined: Thus, for purposes of this study, I defined environmental content as that which deals with Mother Nature, volcanic eruptions and tornadoes; and human influences, whether positive or negative, on the environment. This definition would include a variety of topics such as global warming, wildlife, flooding, and preservation of heritage buildings, waste management and criticism of environmental destruction.

Frequency refers to how many times the newspaper has covered environmental problems (Rong, 2009). This quantification is related to the agenda-setting measures of this project which include both the quantity and prominence of news coverage. So, to find out the quantity of the environmental news in a selected sample of Pakistani print media, all the content items related with environmental issues in general and items about Indus Delta in particular were counted to measure the frequency with which environmental issues were reported in these newspapers.

The units of this analysis were all the content items published on news and editorial pages of the newspapers. The relevant items were separated from the other news items by using the key words relating to both the environment and Indus Delta in the headline or lead paragraph. Keywords were searched only in headline /lead paragraphs to increase the likelihood that the focus of the item is related with the environmental issues (Deacon,

2010). This study excluded the recurring pricing market data and other irrelevant sections like paid obituaries, sports, and calendars and paid advertisement and magazine sections.

Placement of Environmental News about Indus Delta: The placement or page number variable is considered important in agenda setting research. According to Hire (1996) newspapers often publish environmental articles on their inside pages so they get less exposure and readers considers inside pages stories as relatively unimportant news. Further, this variable helps in understanding the editorial priorities of the print media, because, the content items on the front page indicate higher importance to the editors (Schulte, 2006:36). There are different indexes for evaluation of newsworthiness. According to an index developed by Hire (1996:36) four points are assigned to items appearing on the front page of newspapers, two points for appearing on the second page, and zero points if the article appeared on page three or higher. In addition to this, two points are assigned to the items appeared on the editorial page.

DATA ANALYSIS

Frequency: The agenda setting analysis section of this chapter deals with the quantity and the prominence of news about the topics relevant to the environmental problems of the Indus Delta. The quantity of the news published in a particular newspaper during the period under study is shown in the Table 2 and Chart 1 and they provide information about the frequency with which the articles related to the topic were reported by the newspapers under study.

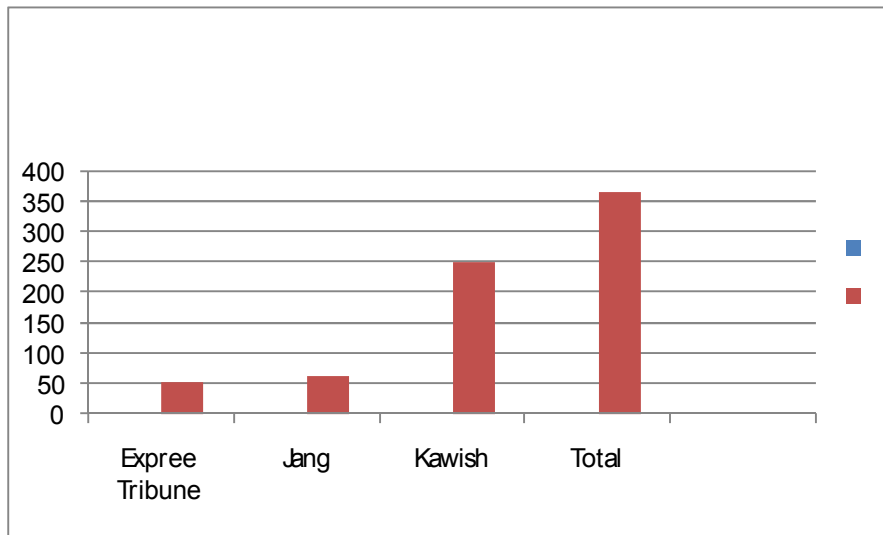
TABLE-2
NUMBER OF ITEMS ABOUT ENVIRONMENTAL ISSUES

Newspaper	Number of items about Environmental Issues of Indus Delta	Percentage (%)
<i>Express Tribune</i>	53	14.20
<i>Jang</i>	64	17.39
<i>Kawish</i>	251	68.20
Total	368	100.00

The data provided in Table 2 shows that total 368 articles relevant to the environmental problems of the Indus Delta were found in 210 daily issues of the selected newspapers. Therefore, the topics relevant to the environmental problems of Indus Delta were covered with an average of 1.75 articles per issue by the selected section of Pakistani press during the period under study.

The comparative analysis of the three newspapers shows that the regional Sindhi language newspaper *Daily Kawish* leads with a reasonable margin in coverage of the issues related to environmental problems of the Indus Delta. As according to the Table-2 the proportion of more than three fifths (68.20%) of all the articles related to the topic were published in *Daily Kawish*. Whereas, the contribution by the mainstream Urdu language newspaper daily *Jang* was the proportion of less than one fifth (17.39%), and the English newspaper *Daily Express Tribune* published only the proportion of 14.20 % of the articles related to the topic during the period under study.

CHART-1
NUMBER OF ITEMS ABOUT ENVIRONMENTAL ISSUES



In this way, the analysis of the Table 2 and Chart 1 indicates that the regional Sindhi language newspaper *Daily Kawish* took comparatively higher interest in coverage of the topics related to the environmental problems of the Indus Delta. While the coverage by both Urdu newspaper *Daily Jang* and the English newspaper *Express Tribune* was relatively low. However, the coverage by *Daily Jang* was slightly better than the *Daily Express Tribune* newspaper. The results show a clear variation in the coverage priorities of the regional and mainstream media in relation to the subjects related to the environmental problems of the Indus Delta.

Type of Items by Publication

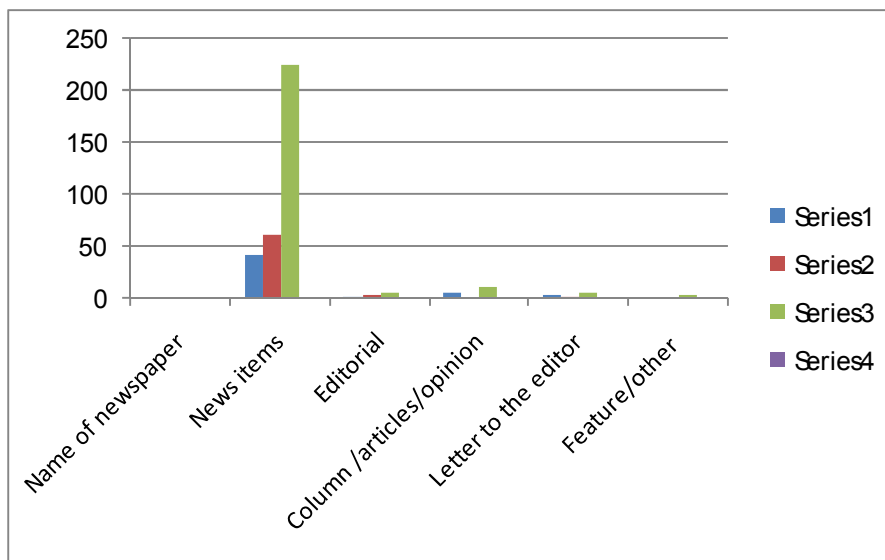
TABLE-3
TYPE OF ITEMS

Newspaper	News	Editorial	Column /articles /opinion	Letter to the editor	Feature /other
<i>Express Tribune</i>	42	2	6	3	0
<i>Jang</i>	60	3	0	1	0
<i>Kawish</i>	225	6	11	6	3
Total	327	11	17	10	3
Percentage (%)	88%	4.61 %	2.98 %	2.71 %	0.81

The Table-2 is related to the general characteristics of the articles published in the newspapers during the period under study. The results show that the 88% of the total coverage related to the environmental problems of the Indus Delta by the selected newspapers was based on news items. Only, the proportion of 4.61% of the coverage was based on the editorials. Whereas, the other little proportion of 2.98% of the coverage was based on commentary in the form of articles, columns published in the opinion pages of the newspaper. Therefore, such trend shows the low share of commentary in overall coverage by the newspapers. As commentary is considered important in terms of describing the issues, so here the low share of commentary indicates the lack of availability of explanation of the topic for the readers.

Similarly, the low share of the editorial content is an important indication in terms of the editorial policies of the newspapers. The share of reader's opinion in overall coverage is 2.71% and only 0.81% of the coverage was based on features and other formats. The reason for the low share of coverage in format of features is somehow understandable as the magazine sections of the newspapers were not analyzed for this study.

CHART-2
TYPE OF ITEMS



Comparative analysis of the newspapers shows the same trend as the share of commentary in total coverage by each daily was low but in case of Urdu *Daily Jang* the share of columns, articles and opinion was zero percent. The *Daily Kawish* published highest number of articles, editorials, and letters to the editors.

Placement of Items by Publication

TABLE-4
PLACEMENT OF ITEMS BY PUBLICATION

Placement	Name of Newspaper			
	Kawish (%)	Jang (%)	Express Tribune (%)	Total (%)
Front page	64(84.2)	9 (11.84)	3 (3.94)	76 (20.65)
Back page	12 (42.85)	16 (57.14)	0 (0.0)	28(8.28)
Editorial Page	24 (68.57)	4 (11.42)	7 (20.0)	35 (9.51)
Inside Pages	151(65.93)	35 (15.28)	43 (18.77)	229 (62.22)
Total	251 (68.20)	64 (17.39)	53 (14.40)	368 (100)

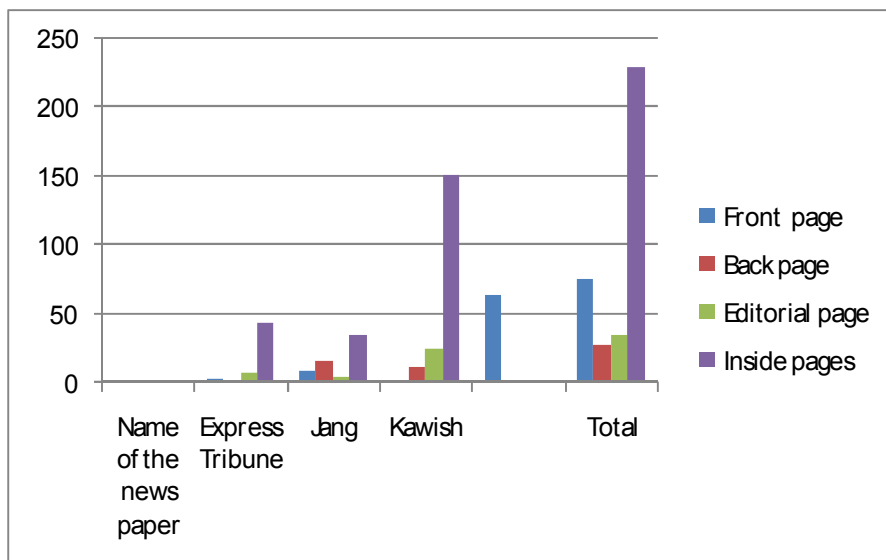
Table 4 mentions data regarding the placement of the items. In this way, it surfaced that in the context of front page coverage of the regional language *Daily Kawish* leads the two other mainstream newspapers in terms of the front page coverage of the issues related to the environmental

problems of the Indus Delta. As the proportion of more than four fifths (84.2%) of the total number of the front page articles were published in *Daily Kawish*. The high ratio of the front page coverage by *Daily Kawish* may partly be due to fact that 68.20 % of the coverage related to the topic was published in the newspaper. On the other hand 11.84% of the front page coverage was published in *Daily Jang*, whereas, the share of *Express Tribune* was only 3.94 percent. The low ratio of the front page coverage by both newspapers may partly be related to the fact that their contribution in total coverage during the period was also low.

In the context of back page coverage it was observed that daily *Jang* was leading the two other newspapers with 57.14 percent back page coverage. The *Daily Kawish* was following daily *Jang* with 42.85 percent back page coverage. Interestingly, daily express tribune provided no back page coverage (0.0%) to the environmental issues of the Indus Delta during the period under study. In the perspective the *Daily Express Tribune* published, 10.9 % on editorial page and 67.1% of its coverage related to the topic was published on inside pages. The 9.5% of the total coverage by *Daily Kawish* was on editorial page. The daily published 4.7% of articles on back page whereas, 60.1% of the articles were published on inside pages.

The overall trend of publishing environmental news on inside pages was found common in all three newspapers. However, the regional language *Daily Kawish* leads other newspapers in front and editorial page coverage. The ratio of the front page coverage by *Daily Jang* was slightly better than *Express Tribune*. However, the editorial page coverage by the English daily *Express Tribune* was better than that of the *Daily Jang*. Despite the overall tendency of the newspapers to push environmental news on inside pages, the trend of better coverage of the topic by the regional Sindhi press in terms of page wise placement is clearly visible.

CHART-3
PLACEMENT OF ITEMS BY PUBLICATION



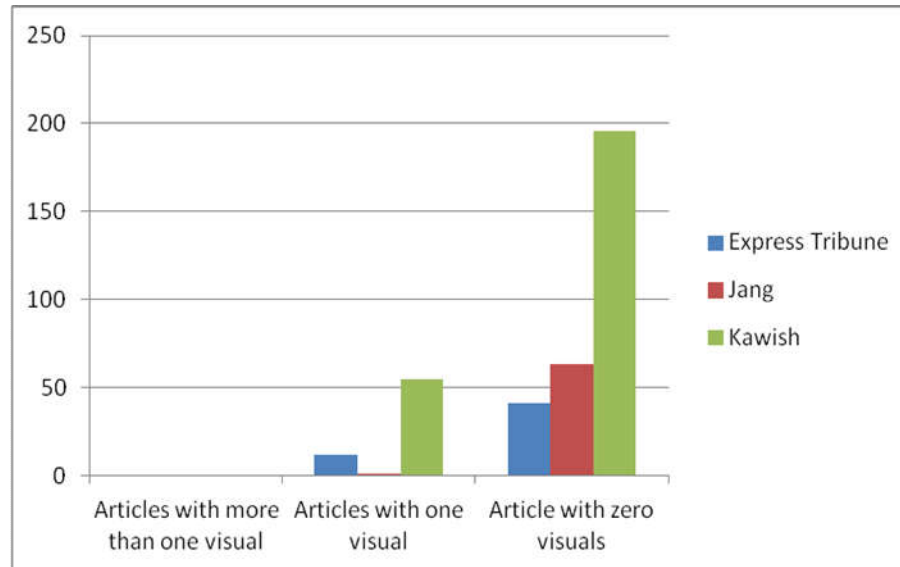
The Chart-3 and Table-4 provide information regarding the page-wise placement of the articles related to environmental problems of the Indus Delta. The results show that 20.65% of the articles under study were published on the front pages of the newspapers. Only 7% articles were published on the editorial page and 9.5% of the articles were published on back page. The 62.5% of the articles were published on inside pages of the newspapers during the period under study. This information highlights a general trend of placement of environmental news on inside pages. However, a separate analysis about the issues which are covered by the newspapers on their front pages is provided in this chapter to further explore the newsworthiness of different topics related to the environmental issues of the Indus Delta. The Table-5 below provides the comparative analysis of the placement of the articles by the three newspapers.

TABLE-5
VISUALS

Newspaper Name	Articles with more than one visual	Articles with one visual	Article with 0 visuals
<i>Express Tribune</i>	0	12	41
<i>Jang</i>	0	1	63
<i>Kawish</i>	0	55	196
Total	0	68	300

The majority of the articles related to the topic were published with zero visuals during the period under study. Only in 14.94% of the stories were highlighted with the support of the visuals. The ratio of the articles with more than one visual was 0% in overall coverage related to the topic.

CHART 5.1.5



The comparative analysis of the newspapers reveals that *Daily Kawish* published one visual with 21% of its stories. The ratio of the articles with one visual in total coverage by *Daily Jang* was 1.5% and the *Express Tribune* published one photo with 22.64% of its stories about the topic. Therefore, the English *Daily Express Tribune* leads other two newspapers in percentage of the stories with one visual but in overall coverage 80% of the photos related to the topic were published in *Daily Kawish* during the period of study.

Therefore, an overall trend of lack of visual support to the stories related to the topic is visible. However, being major contributor in terms of total visual coverage related to the topic, *Daily Kawish* played a more important role in highlighting the issues related to the environmental problems of the Indus Delta. Individually, daily *Express Tribune* leads other two newspapers in publishing articles with one visual.

DISCUSSION AND CONCLUSION

The results of the study suggest that the topics relevant to the environmental problems of Indus Delta were covered with an average of 1.75 articles per issue by the selected section of Pakistani press during the period under study. The comparative analysis of the selected Sindhi, Urdu and

English newspapers shows a remarkable variation in coverage priorities of regional and mainstream media as the delta issues were provided with comparatively less coverage in mainstream Urdu and English newspapers. This is an important indicator as the Urdu and English newspapers plays important role in agenda setting at national level in Pakistan, therefore, more media attention on the part of this section of Pakistani media is necessary to properly highlight the environment related issues of the deltaic region.

The results also indicate that the major portion of the total coverage related to the environmental problems of the Indus Delta by the selected newspapers was based on news items and the share of commentary in overall coverage was very low. The commentary in shape of editorials, columns and articles can be very useful in explaining the complex environmental issues; therefore, the low share of commentary indicates the lack of availability of explanation of the topic for the readers. Moreover, the low share of the editorial content also reflects upon the editorial policies of the newspapers as far as the environmental problems of the region are concerned.

The overall trend of publishing environmental news on inside pages was found common in all three newspapers. However, the regional language *Daily Kawish* leads other newspapers in front and editorial page coverage. Despite the overall tendency of the newspapers to push environmental news on inside pages, the trend of better coverage of the topic by the regional Sindhi press in terms of page wise placement is clearly visible. The placement of news is an important element of agenda setting and better placement of environmental news, especially, in Urdu and English newspapers may help in achieving more attention of public and policymakers regarding environmental degradation in the Indus Delta. The trend of lack of visual support to the stories related to the topic was found clearly visible during the analysis. However, being major contributor in terms of total visual coverage related to the topic, the ratio of stories with visuals was higher in *Daily Kawish*.

Finally, the researchers conclude that additional media attention in shape of more frequent coverage supported with commentary and visuals and better placement is necessary to acquire the attention of public and trigger the policy initiatives to mitigate the impacts of environmental degradation and restore the deltaic ecosystem.

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