

Earth Journalism Network

Media Study of Chinese Fisheries Journalism

March, 2013

Research Team

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WITH SUPPORT FROM THE DAVID
AND LUCILE PACKARD FOUNDATION'S
MARINE FISHERIES PROGRAM



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Executive Summary

1. China is the leading market in seafood production and has been the largest producer and exporter of seafood in the world (FAO, 2012). Seafood is an indispensable part to the Chinese diet as a traditional delicacy, for example live reef food fish has been an important part to the Canton-Chinese cuisine (Sadovy et al., 2003; Fabinyi, 2011). As China's economy grows, it is expected that the local demand for seafood will thrive and eventually influence the global marine resources and food supply.

2. Some academic studies recognized the role of mass media in shaping public understanding and citizens' opinions toward the environment, the fishery business, species extinction, and conservation issues (Sullivan, 1999; Muter et al., 2013), as well as in driving policy changes (Oliver, 2005). Environmental risk is heavily framed by the mass media and consequently some actors' voices, such as authorities, experts, organizations, and politicians, are amplified (Jönsson, 2011). However, most of these academic studies focused on Western communities and relatively fewer studies have been conducted on the media reporting of fisheries and environmental issues in Asian communities or China.

3. The main objectives of this report are summarized by the following three points: 1) To investigate the extent, depth and coverage of environmental issues in selected Chinese news agencies; 2) To assess the knowledge, attitudes, practices and products of journalists covering marine fisheries and their publications' editorial policies regarding ocean and fisheries coverage in Chinese mass media; 3) To identify media organizations active in reporting on marine fisheries and ocean issues, and help identify a list of journalists who are or could potentially be leaders in the field, and a broader list of journalists and/or media organizations whose reporters should be invited to attend capacity-building activities.

Analyzing Media Reporting of Chinese Fisheries Issues

4. Six Chinese newspapers, including People's Daily (overseas), Beijing Youth Daily, Today Evening News, Xinmin Evening News, Southern Me-

tropolis Daily and Guangzhou Daily, were selected to represent mass newspapers in China (Main Sample). Chinese Fishery News (CFN Sample) was chosen to represent Chinese newspapers serving a professional readership. A keyword search was conducted to identify fisheries and environment-related news articles in the selected newspapers. Finally, 133 (Main Sample, study period: March 1 to September 30, 2012) and 77 (CFN Sample, study period: August 1 to September 30, 2012) articles met the inclusive criteria and were analyzed.

5. Among the Main Sample, 62.4% were original news reporting. Thirty percent contained reprinted news and most of them were sourced from the Xinhua News Agency, the official Chinese government agency. The two Guangzhou-based newspapers, Southern Metropolis Daily, and Guangzhou Daily, had the highest proportion of original news reporting.

6. Most articles were located in the "local news" or "national news" page sections. The fisheries articles were mainly associated with other political or social news topics, for example social conflict.

7. More than half of the sampled media articles were related to marine fisheries. Many articles in the sample were written about the moratorium in the East and South China Sea.

8. Among the sampled articles, about one-fourth (24.8%) gave no specific source of information. If the information sources were given in the article, "government/official" was the category most often cited as a single source (31.6%) and also one of the main information sources (22.6%). This finding suggests that official and unspecific sources constituted the dominant news sourcing among these articles.

9. Most of the media articles were written to provide information purely (22.6%), seeking to publicize news and announcements that were relevant to the fishery industry. An ecological frame (14.3%), by which ecological or environmental concerns are explicitly specified in the article, was ranked second. A conflict frame (12.8%), by which conflict between two or more parties is explicitly

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mentioned in the article, ranked third. The propaganda frame (9.8%) was also commonly found in the articles of party organ media and in reprinted articles in the market-oriented media. Fourteen articles (10.5%) used responsibility media framing.

10. When types of media frames were compared across various newspapers, it was observed that People's Daily and Guangzhou Daily ran more articles that were framed as "purely informational." Southern Metropolis Daily and Beijing Youth Daily reported more media articles using "crisis" or "conflict" frames.

11. In the CFN Sample, the articles fell into five categories, including front page (16.9%), special reporting (6.5%), ecology and resources (67.5%), fishery policy (7.8%) and industry (1.3%). More than half (55.8%) of the articles in this professional outlet concerned a freshwater fishery, which was higher than the proportion of articles in the Main Sample (15%). More than half of the CFN samples did not specify the sources of information.

12. The page outlet and the use of media framing were highly associated. Most of the front page and fishery policy articles used propaganda frames (61.5% and 66.7% respectively), in which official positions and government's doctrines are mostly found. But in the ecology and resources page, the most common frame used was ecological frame (36.5%) and propaganda-framed articles constituted only 23.1% of all articles on the ecology and resources page. All articles on the industry page (100%) used the economic frame.

13. Thirteen articles written by the Earth Journalism Network Fellows (the Fellow Sample hereafter) were compared with the articles of the Main Sample. Our findings indicate that the Fellows' Sample has a higher likelihood to give arguments for policy (92.3%), to rely on scientific evidence (46.2%), and to indicate environmental problems (100%) and remedy for them (69.2%), when compared with the Main sample. Given that the articles mentioned the environmental impact of a specific fishery policy/method, the Fellows' sample reported the stories more frequently in a negative (38.5%) and balanced tone (38.5%),

whereas the majority of stories in the Main Sample did not exhibit any attitude toward the environmental impacts mentioned above.

14. Caution should be exercised in interpreting the comparative findings as the two samples have quite different sample sizes. Nevertheless, we found that the Earth Journalism Network Fellows used arguments for policy positions, displayed a reliance on scientific evidence and presented environmental problems and remedies for those problems within their media articles more often than did the general fishery-related articles found in the Main Sample. This finding seems to support our thesis concerning efficiency of the capacity-building program.

In-Depth Interviews with Chinese Environmental and Fisheries Journalists

15. We conducted in-depth qualitative interviews with twenty-five media professionals who were working for nineteen Chinese media companies. The participants were purposefully selected to reflect a variety of media types, characteristics and geographical locations in China. Within this sample, seventeen of them were journalists, six were media editors and two were television producers. Their media outlets are geographically located in either Beijing or Guangzhou. Twelve media professionals from eight media outlets were Guangzhou-based and thirteen media professionals from eleven media organizations were Beijing-based.

We summarize the interview findings into the following themes.

16. *Historical Context of China's Environmental Media Coverage* - Different media outlets put various emphases on environmental issues. Media professionals from the party-state media mainly published press releases from the government and rarely contributed original and investigative environmental news stories, whereas those working for the metropolitan and market-oriented media, which serve more educated readers primarily, focused more often on the social crises triggered by

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the environmental issues.

17. *Professional Backgrounds of the Environmental/Fishery Media Professionals* - Most of the respondents hold a university degree in non-science majors. They usually reported social news before they set foot in the environmental beat. Many experienced journalists were found to have earned their knowledge about fisheries and the environmental issues through interviews and on-the-job learning – the more articles they wrote, the greater the knowledge of these issues they gained.

18. *Information Sources* - Major information sources for the environmental/fishery news articles were official press conferences and announcements, social media, research institutions, personnel from environmental nongovernmental organizations (ENGOs), and sources or friends like scholars and environmentalists.

19. *Role of Governments as Interview Subjects* - Local and other levels of government in China have significant impacts on the practices of the media organizations and journalists when reporting about environmental or fishery issues. Many journalists said they relied heavily on government sources. However, we found from the interviews that the government departments are not very cooperative when responding to media interview requests.

20. *Role of Governments as Supervisors* - Environmental news articles were considered by some respondents to be less politically sensitive than other topics, and they maintained that environmental reports usually receive less censorship when compared with other types of political or social reporting. Environment-related news topics that are commonly more politically sensitive are those incidents that could possibly cause social movements or might link to important business, enterprises or governmental interests.

21. *Media Framing of News Articles* - Party-state agency newspapers and periodicals were found to have reported their articles generally as party propaganda. But metropolitan and market-oriented newspapers displayed a degree of free-

dom to frame the articles in a way that invited targets to take responsibility. Professional media tended to report their articles primarily for the interest of the corresponding industrial and financial sectors. Academic media usually reported through a technical or scientific lens.

22. *Environmental Journalists and Environmental NGO in China* - ENGOs can be a major source of news story ideas for Chinese environmental journalists, but among information sources, they are not the only one or even the most important one. Then again, some journalists described themselves as environmentalists and enthusiastic participants in the ENGO's activities.

23. *Feedback and Influence on Environmental Coverage* - Many journalists commonly complained that urban audiences did not pay much attention to fishery news or environmental news in general. A piece of environmental reporting often gets very low attention. According to one interviewee, "They care more about people's livelihoods and rather less about fish."

24. A list of active Chinese journalists, research institutions, and media organizations in the areas of marine fisheries and environmental issues in China is provided in Part 3. Another list of Chinese journalists who participated in our Part 2 interviews (including their names, organization names and contact details) is enclosed in a separate file which is strictly confidential and for internal circulation only.

Recommendations

25. Journalists' specific needs for capacity building training are diverse. Some fast-movers have established a good knowledge base along with other experienced journalists but most of those from other media outlets seem to be rather underdeveloped. Future capacity-building efforts should be tailored to different types of news outlets to meet specific demand.

26. Part of the capacity-building training material should be localized (and perhaps should be developed by local journalists) to reflect local values, culture and practices as well as to uphold the global perspective advocated by the environmentalists.

Content Analysis

1.1 Background

Fisheries issues in the Mass Media

Most academic studies on media reporting have been focused on Western communities or developed world. One of those studies, by Ohkura (2003), discusses how the newspapers in Japan, both national and regional papers, reported the controversies in relation to the Isahaya Bay land reclamation project. Ohkura's analysis of newspaper coverage shows that the print media played mostly a "spectator" role, not a "watchdog" role, in reporting the event. Although Isahaya Bay is an important fishing area in Japan, the impact of the project on the local fisheries output was relatively minor in the controversy. The author also reports that a fishery organization joined the anti-reclamation league, which opposed legal restrictions on fishing in that zone, but those fishermen were not originally from the directly affected area.

Ten Eyck & Deseran (2004) study newspaper presentations of oysters in Southern Louisiana, where oysters are both loved and loathed as food, over a ten-year study period. From their interesting findings, they develop a rhetorical and linguistic pattern of language use in the newspaper articles, in which both negative- and positive-toned articles could be found in the same issue of the newspaper.

Amberg & Hall (2008) investigate the American newspaper coverage of farmed salmon and the types of portrayed risks and benefits. Their content analysis supports a hypothesis that the main media focus was on negative information (e.g., health risks) rather than on positive information (e.g., health benefits). And the highlighted health risks were most often dramatic, rare or vivid. Over the study period, 49% of media content of farmed salmon discussed human health risks, while the benefits were described in less than 10% of the sample. The highlighted risks in the media were those linked to severe or dreadful diseases, such as cancer and developmental defects, whereas other health risks and environmental risks received much less attention. The authors also found external triggering events were responsible for shifting media attention from environmental risks to human health risks.

Environmental Journalists in China

In our review, there are relatively fewer academic studies conducted on Chinese media reporting or journalism on environmental and fisheries issues. Below is a review of some such studies, although it is not meant to be comprehensive, and we realize there are others out there.

Lin Shangjun (2012) finds a decrease in media reporting on fisheries issues, suggesting four main reasons that may account for the reduction: a decrease in newsworthiness of fisheries issues in the journalists' perspective; an increase in restrictions of time and area of fishing; journalists' perceived low influence in fishing areas, and a lack of relevant knowledge background. However, Lin did not specify the methodology and the study period to support his findings.

Burgh and Zeng (2012) brought together a group of Chinese environmental journalists and conducted interviews with 10 of the attendees. In their interviews, interviewees revealed a generally positive stance toward China's environmental journalism and indicated they believed that the attention to green issues in society is increasing, which they contended is attributable to the mass media. They thought that the Chinese media were playing an influential role in affecting governmental policy and practice and their main information source was the Internet. The authors found that lack of competence among journalists was the most frequently expressed concern, followed by a general failure to recognize the significance of environmental issues. Lack of demand by readers for coverage of environmental issues was also noted as an obstacle for environmental reporting. The authors suggested that knowledge acquisition in this specialized area was one of the potential solutions. Raising public and government awareness of environmental issues was proposed as another solution by the interviewees. Burgh and Zeng (2012) concluded that awareness of environmental issues on the part of Chinese people has increased the Chinese journalists' opportunity for investigating and reporting environmental issues in China.

Wang (2005) conducted a case study to analyze print media coverage of an environmental contro-

1.1 *Background*

versy in China, a landmark case that happened in Sihui on January 2000 when an environmental dispute between provincial authorities occurred. The study aimed to assess the status of transparency in China's environmental governance. By examining media reports from a number of newspapers published between January and June 2000, Wang (2005) found that the reports were discordant and were extremely polarized. Some newspapers provided in-depth coverage of the case whereas others were seriously constrained. The author argued that China's environmental governance is vulnerable. Specifically, he argued that the practices of information disclosure and dissemination were not consistent.

Pan (2009) utilized a case study of water pollution crisis (i.e. Tai Lake water crisis in 2007) to investigate framing of environmental issues among print media in China. Pan placed special emphasis on the comparison between the local-controlled media and government-controlled media, aiming to reveal the fragmentation of political control between the central government and local governments. Pan studied reports from two newspapers, the Yangtze Evening Post and Xiandai Kuaibao, the former being comparatively independent from political control whereas the latter is controlled by the State. Through content analysis, Pan noted that news reports of the Yangtze Evening Post were more likely to attribute the crisis to a natural cause, but those in Xiandai Kuaibao tended to take a more critical attitude toward local authorities of not adequately enforcing environmental policies. Pan postulated that the disconnection between the local and central governments on environmental governance provided flexibility for media reporting on environmental issues, in two ways. First, the media can make use of the opportunity, since they share the same goal with the Central government, to criticize local government's wrongdoing on environmental governance. Second, the media can also utilize the central directives to give suggestions to local authority to adopt a more democratic form of environmental governance.

1.2 Method

The newspapers were purposively sampled to reflect the variety of media types and characteristics in China. Seven newspapers were selected. Only newspapers were chosen in this study because they are accessible using an electronic newspaper database archive. Broadcast media were not sampled as it was simply too difficult to recover and review archives. These newspapers were selected on the basis of four criteria:

1. The sampling included various media types including both party organ media and market-driven media.
2. The sampled publications had high newspaper circulations (based on the [most recent circulation](#) announcements)
3. The publications originated from were based in major cities like Beijing, Shanghai, Tianjin and Guangzhou.
4. The publications are accessible using an electronic newspaper database archive.

Based on the criteria, the seven newspapers are as follows:

1. **People's Daily (overseas)**, the overseas version of the People's Daily, the official newspaper of the Communist Party of China (CPC).
2. **Beijing Youth Daily**, the official newspaper of the Beijing Communist Youth League.
3. **Today Evening News** one of the most popular commercial newspapers in Tianjin.
4. **Xinmin Evening News**, one of the most popular commercial newspapers in Shanghai.
5. **Southern Metropolis Daily**, one of the most popular commercial newspapers in Guangzhou.
6. **Guangzhou Daily** The official newspaper of the Guangzhou government.
7. **China Fishery News**, The official newspaper of the Bureau of Fisheries, Ministry of Agriculture, and publishes five issues every week. It is the only newspaper of its kind that is distributed across the whole country, with information that covers the whole fishery industry.

Newspapers	Circulation (million)	Ownership/Affiliation	Media type
People's Daily (overseas)	18.6	Communist Party of China	Party media
Beijing Youth Daily	0.6	Beijing Communist Youth League	Market-oriented
Today Evening News	0.91	Jian Wan Media Group	Market-oriented
Xinmin Evening News	1.2	Wen Hui Xinmin United Press Group	Market-oriented
Southern Metropolis Daily	1.4	Nanfang Media Group	Market-oriented
Guangzhou Daily	1.85	Guangzhou government	Party media

1.2 Method

The first six newspapers were searched via Wise-news (an electronic newspaper database archive in the University of Hong Kong Library). The search keywords were “fishery (yuye) or fisherman (yumin)” and “environment (huanjing) or pollution (wuran) or ecology (shengtai),” or moratorium (xiuyu or jinyu). The study period was between March 1 and September 30, 2012. The articles containing the search keywords were included. However, we found that a large number of articles were irrelevant to environmental issues, covering, for example, geopolitical disputes between China and other East Asian countries concerning fishing areas or articles that dealt strictly with the financial side of seafood processing. These non-fishery related articles were excluded.

All the content of the China Fishery News is available on line, but no web search service is provided. So because of those limitations, we examined all the China Fishery News articles published between August and September 2012, and manually picked up relevant articles related to fisheries and environmental issues.

Since the articles of the first six newspapers (Main Sample) and those in the China Fishery News (CFN Sample) were selected in different methodologies. We report their findings in separate sections.

For each article, thirteen variables were encoded.

1. Is the article original reporting, a commentary, a column/letter contributed by an outside writer, or reprinted from other media?
2. How long is the article?
3. Where is the article published: front page, national news, local news, international news, business news, environmental news, or another section
4. Is the reporting relevant to freshwater or marine fisheries? And among each, is the reporting relevant to fishing or aquaculture?
5. Is any fishing method mentioned in the article?
6. What is/are the main issue(s) in the article?
7. What are the main three sources cited in the

reporting?

8. What kind of framing does the reporting employ? If the framing is based on responsibility, who is responsible?
9. If the articles mention some fishery policy, what is/are the argument(s) for the policy?
10. Does the article give some scientific evidence? If yes, is the evidence presented to elaborate the problem, to support the policy, or as background information?
11. Does the article mention any environmental problem caused by a fishery?
12. If an environmental problem caused by a fishery is mentioned, does the article give any remedy?
13. When the article mentions the environmental impact of a specific fishery policy/method, does it highlight the positive impact or negative impact, or use a neutral tone?

Two coders were invited to pre-test the protocol. Each question provided a list of options. Based on the coder’s interpretation, the best item to describe and represent the sampled article was chosen. Interrater reliability of the protocol was assessed. Most of the variables yielded a moderate level of intercoder reliability, i.e. with a kappa coefficient higher than 0.4, except Question 5 and the second part of Question 8, which had relatively lower intercoder reliability. Readers should read with caution.

RESULTS

Who is publishing fisheries stories?

In all, 133 media articles reporting on fisheries and environmental issues were found in the sampled Chinese newspapers. The percentage breakdown of the media articles covering fisheries and environmental issues is shown in figure 1.1. Guangzhou Daily and Southern Metropolis Daily, which had 38 (29%) and 28 (21%) articles respectively, were the main sources in the sample.

When a fisheries stories published?

The number of media articles also varied by month, and varied in different months. The results suggested that more media articles were published on May 2012 and August 2012. We concluded that there are two possible explanations. Firstly, the two-and-half-month fisheries moratorium in Chinese waters began in May until the end of August. During the moratorium, all wild capture fishing activities were temporary suspended in an attempt to protect fisheries resources during breeding season. The Government organized event to announce the start and the end of the moratorium and were covered by the People’s Daily and the two newspapers in Guangdong.

The second reason may be that the conflict in the South China Sea occurred in May 2012. Issues surrounding maritime boundary questions in the South China Sea have long been disputed between a number of Southeast Asia countries (e.g. Indonesia, Malaysia, Philippines, and Vietnam) and China. Even though those articles only covering the political conflicts were already excluded, the political tensions over the seas may have stimulated the media to report on different issues related to fisheries and environment.

How long are the articles?

The average length of the 133 articles was 1,120 words (range: 30 to 8,676 words).Articles from the South Metropolis Daily on average were the longest (1,736 words), whereas the Today Evening News had the shortest (626 words). The average length of the articles in the other four newspapers were: 710 words (People’s Daily), 851 words (Beijing Youth Daily), 1,426 words (Xinmin Evening News), 974 words (Guangzhou Daily). ANOVA test suggested the length of the six newspapers were

Chart 1.1:Share of News Items by Individual Newspapers

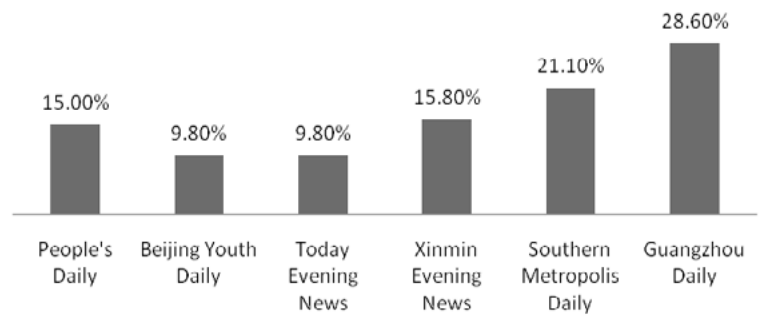


Chart 1.2: Reporting in months

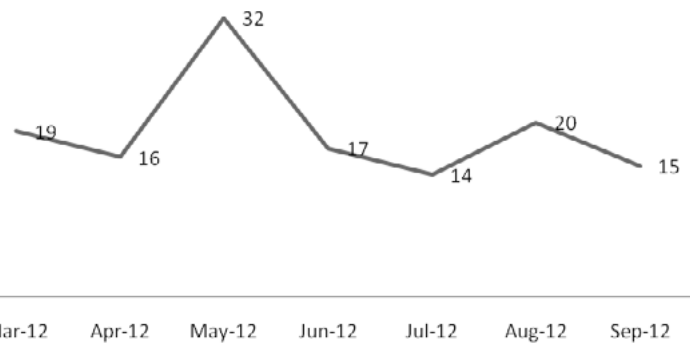
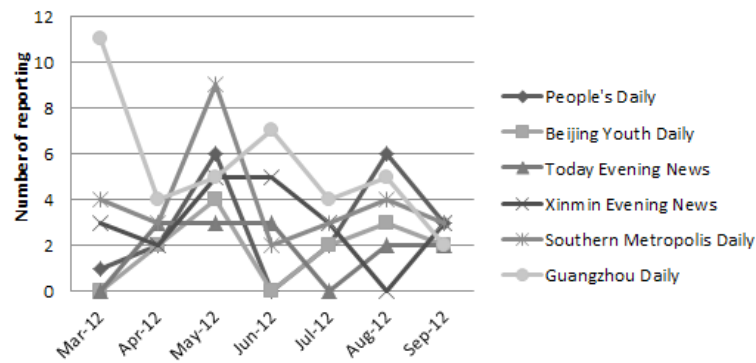


Chart 1.3: Reporting in months by newspapers



1.3 Results

not significantly different.

Is the article original reporting, a commentary, a column/letter contributed by writer outside, or reprinted from other media?

Among the sampled articles, 62.4% were original reporting, but 30% were reprinted news, most of which were sourced from the Xinhua News Agency, the official Chinese government agency.

The proportion of original reporting varies across the sampled newspapers. The two Guangzhou-based newspapers, which had the highest frequency in the sample, also had the highest proportion of original reporting, specifically Southern Metropolis Daily, 71.4%; and Guangzhou Daily, 89.5%. In contrast, the People's Daily, Beijing Youth Daily and Today Evening News had relatively higher proportions of reprints from official agencies. In China, a higher proportion of original reporting is likely to represent a high degree of autonomy in determining news direction, topics and exercise of press independence. Media with higher proportions of reprinted articles denotes their higher willingness to follow official requests or general media guidance.

Chart 1.4: News Sources

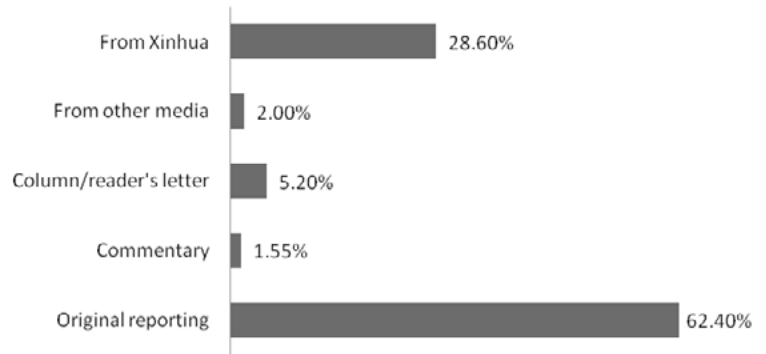
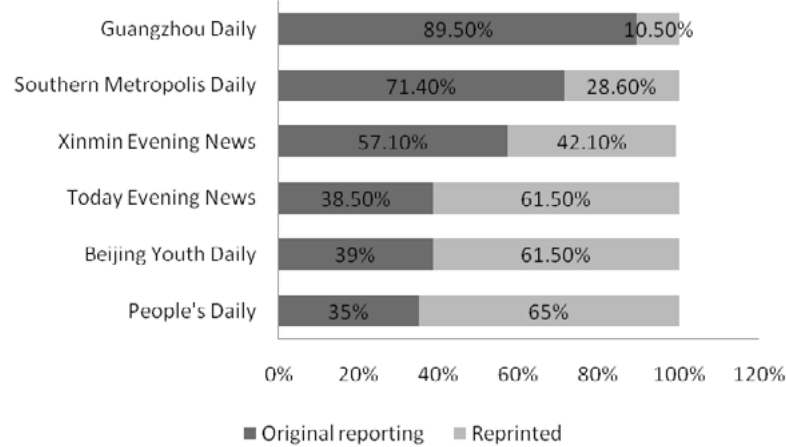


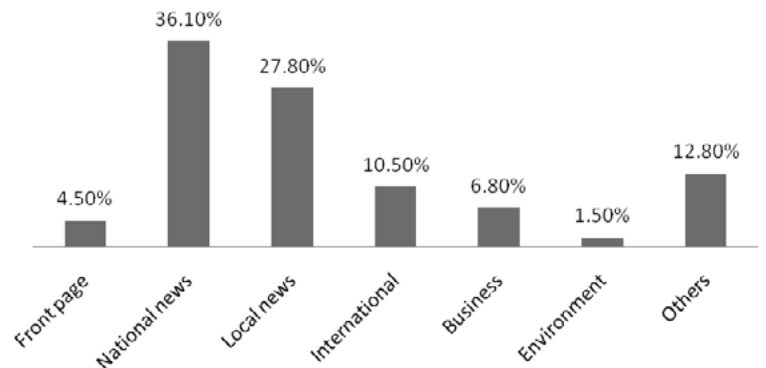
Chart 1.5: Percentage of Original Reporting



Which section are fisheries articles published in ?

Most articles were located in the "local news" or "national news" pages. Only six articles were printed on the front page. Only two articles, both published in the Southern Metropolis Daily, were located on a page of environmental news. The findings suggest that the fisheries articles were mainly associated with other political or social news articles, e.g. social conflicts, especially when the articles were reported by journalists who came from the regions where the articles were based.

Chart 1.6: Page outlet



What fisheries industries are being reported about?

- *freshwater or marine fishery?*
- *capture fishing or aquaculture?*

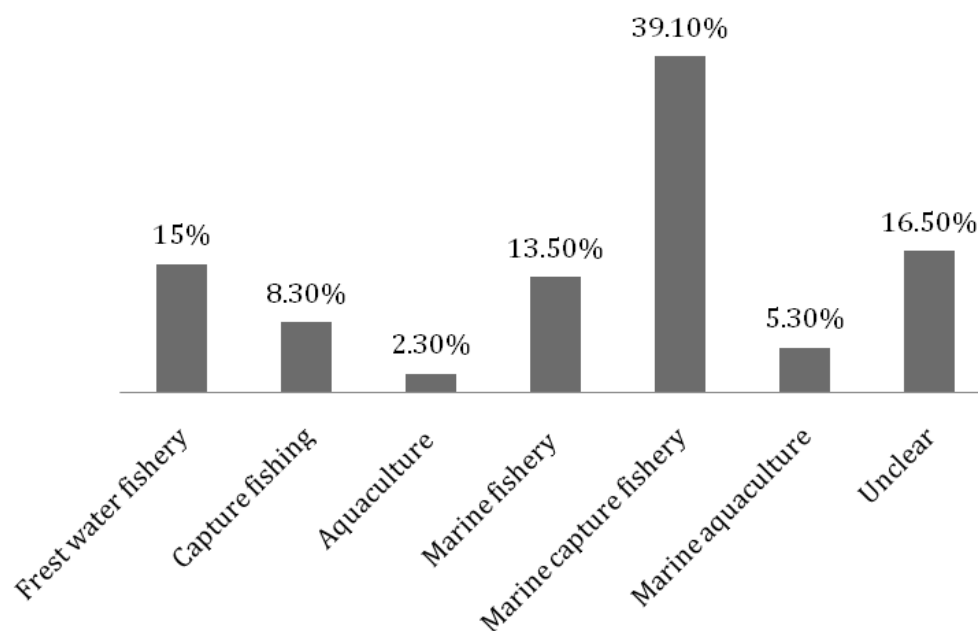
More than half (57.9%) of the media articles were related to marine fisheries, including the categories of “marine fishery”, “marine capture fishery”, and “marine aquaculture.” Among them, most were linked to “marine capture fishery” specifically. This is because many articles in the sample were associated with the moratorium in Chinese waters in the study period. Another possible reason is that all of our sampled newspapers originated in coastal cities, where marine fishery news is more important than freshwater fishery news, although the latter is also important in the whole country.

The amount of reporting about aquaculture was found to be very low. One possible reason is the nature of news reporting practices of official media in China. As Lin (2012) argues, most Chinese journalists only cover fishery news when they are assigned to cover an official ceremony or press conference. There is rarely such an event in relation to aquaculture in China. Moreover, most of the sampled newspapers are based in coastal regions where a freshwater fishery may be relatively less important as business news. Nonetheless, we cannot rule out the possibility of the research protocol where “aquaculture” is not listed as one of the keywords where this can lead to potential exclusion of media reporting on aquaculture.

Is any fishery method mentioned in the article?

Thirty-five articles mentioned at least one fishery method in the content, while twenty-five articles reported on destructive fishing methods, such as trawling (拖網), dredging (拖貝), handpicking (潛作業), gill netting (刺網), purse seining (大型拖拉圍網), electric fishing (電魚), blasting (炸魚), and poison fishing/cyanide fishing (毒魚).

Chart 1.7: Relevant industry



What are the main issue(s) in the article?

The most frequent issues included: moratorium, pollution/ecological crisis, species extinction/protection, and law/policy/enforcement (other than the moratorium). About half (48.9%) of the samples were associated with the moratorium, among which 62% were about the marine fishing moratorium. The second largest group (21.8%) concerned pollution/ecological disputes, in which social conflict and public grievances were usually involved.

The leading news event mentioned in the chart is the moratorium on fishing. These news stories were mainly reported by journalists who attended the official events organized by the Chinese Fishery Administration at the beginning and the end of the moratorium, which is covered by our study period from February to September 2012. Furthermore, even though non-environmental related news stories were excluded in our study, the disputes on Diaoyu Islands and Huangyan Island, which intensified East Asian geopolitical tensions in 2012, drew much media attention to cover news relevant to marine issues and indirectly to environmental issues. For example, the Ministry of Foreign Affairs talked about the moratorium for the South China Sea in a press conference, which was included in our samples.

Issues mentioned in not more than two articles included: shark fins, maximum sustainable yield, fish stocks, and science and technology. "Certification" was listed in the protocol as a variable, but no story on this topic was found.

What are the main three sources cited in the reporting?

Among the sampled articles, 33 (24.8%) gave no specific source. Among the specific sources, government/official was the top ranked category as most frequently cited single source (31.6%) and also one of the main information sources (22.6%). The second and the third sources were individual (15.8%, one of the main sources; 6.8%, single source) and expert/scientist (12.8%, one of the main sources; 4.5%, single source). The finding suggests that official and unspecific sources make up the majority in news sourcing. Sourcing to an expert or a scientist's

Chart 1.8: Frequency of main issues

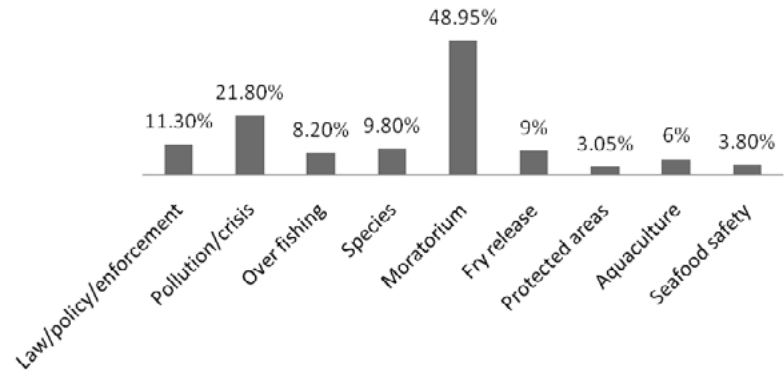
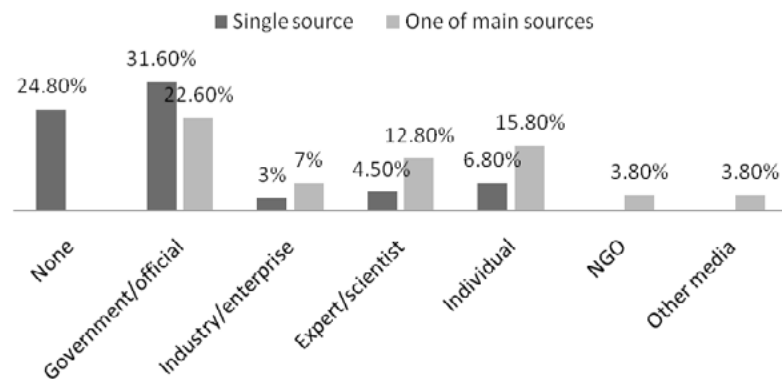


Chart 1.9: frequency of sources



1.3 Results

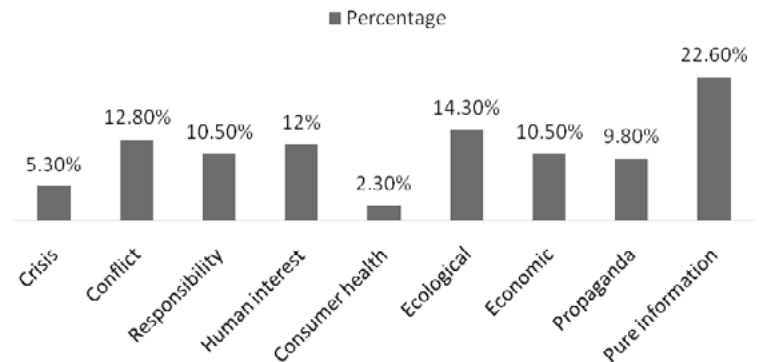
voice in the Chinese fisheries media articles is quite limited.

Only five articles cited a nongovernmental organization (NGO) or Green group as one of the main sources, which demonstrates that environmentalist/NGO sources are not as influential as other sources cited in the sampled media articles.

How are the articles framed?

The following table shows the explanation of the categories. "Conflict," "responsibility," "human interest" and "economic" frames are adopted from Semetko and Valkenburg (2000). The remaining frames are adopted from a not-yet published manuscript by Miklos Sukosd and King-wa Fu.

Chart 1.10: Framing



Framing categories	Brief description
Crisis	For media content that indicates the possibility of the risk of a specific environmental crisis (including food, pollution, or human).
Conflict	For media content that defines a conflicting situation, parties involved as winners and losers or disagreements among the parties.
Responsibility	For media content that blames or expresses criticism toward the misbehavior of a single party or several parties who should have done some action differently to alleviate the problem.
Human interest	For media content that expresses concerns about the individuals and groups affected by the issue/problem or talking about how the incidents affect people's lives.
Consumer health	For media content that aims primarily to inform about consumer health issues.
Ecological	For media content that is specifically framed from ecological perspectives.
Economic	For media content that addresses the situation from economic points of view
Propaganda	For media content that presents the Chinese Community Party's propaganda message
Pure information	For media content that is abundant in information but without a detectable frame

1.3 Results

The media articles were mostly framed to be purely informational (22.6%), seeking to publicize information that is relevant to the fishery industry. An ecological frame (14.3%), by which ecological or environmental concerns were explicitly specified in the article, was ranked second. Conflict frame (12.8%), by which conflict between two or more than two parties were explicitly mentioned in the article, ranked third. The propaganda frame (9.8%) was also commonly found in the articles of party organ media and reprinted articles in market-driven media.

Fourteen articles (10.5%) used responsibility media framing. The targeted responsible individuals and institutions included five companies causing pollution: China National Offshore Oil Corporation (CNOOC), ConocoPhillips, Sinopec and two others. Two articles questioned whether the government should take prompt action. And one article criticized Vietnam fishermen for being responsible for over-fishing in the South China Sea.

If an article cited government/official as the only source, it was more likely (21.4%) to be framed as propaganda framing than that with non-official sources (6.1%), indicating a close connection between only use of an official source and propaganda.

When types of media frames were compared across various newspapers, it was observed that the two party organ newspapers, People's Daily and Guangzhou Daily, ran more articles that were framed as "purely information," and not surprisingly the articles were less often framed as "crisis" or "conflict." Southern Metropolis Daily and Beijing Youth Daily reported more media articles using "crisis" or "conflict" frames.

Chart 1.11: Framing and official source

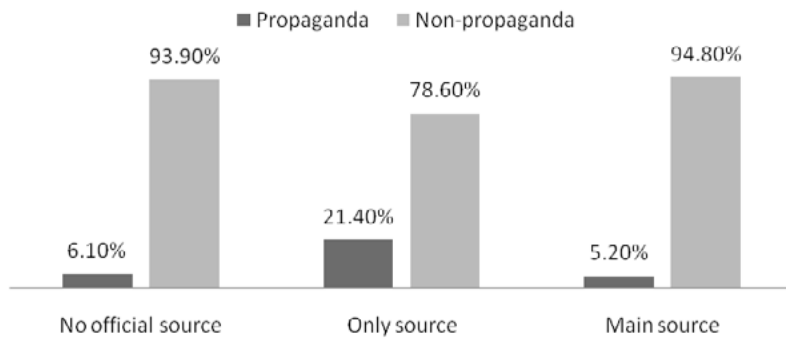
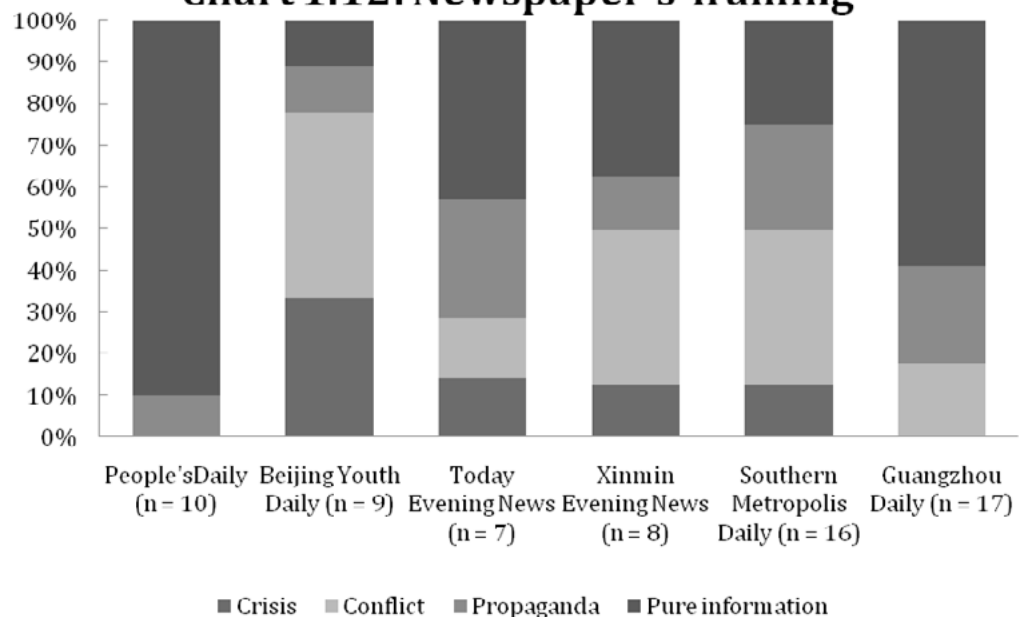


Chart 1.12: Newspaper's framing



If the articles mention some fishery policy, what is/are the argument(s) for the policy?

Remark: fishery policy includes national law/regulation and global and international treaties

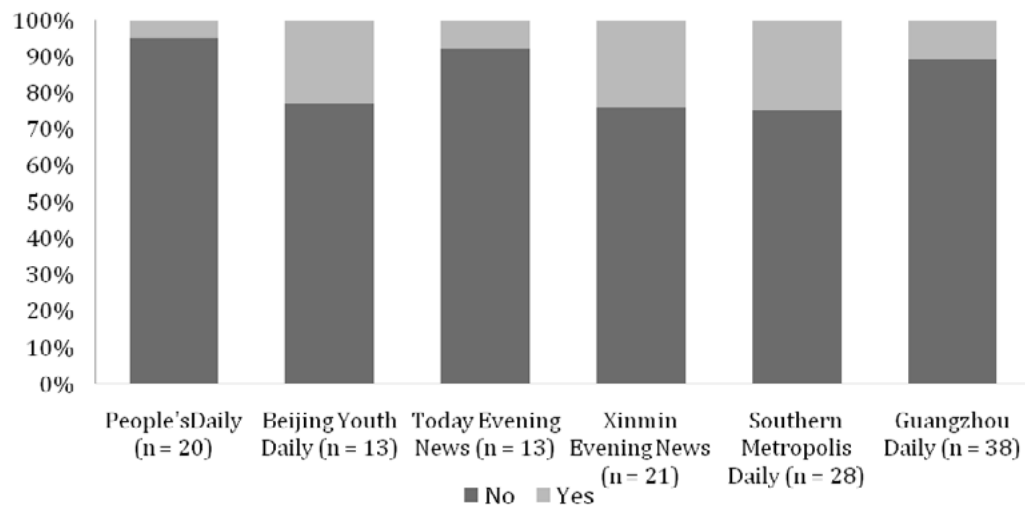
Eighteen articles contained arguments for fishery policies in China. Among them, five provided at least one reason to support these policies. The most commonly used arguments were environmental protection, which was used in fifteen articles. Economic development was put forward in six articles, consumer health was cited in two, and politics was used in one article.

Does the article give some scientific evidence? If yes, is the evidence given to elaborate the problem, to support the policy, or as background information?

Using scientific evidence, for example in citing a scientific report or laboratory data, was uncommon in Chinese media articles related to fisheries and ocean issues. Among the 133 articles sampled, only twenty-one articles (15.8%) specified scientific evidence. In those articles, twelve used the evidence to elaborate environmental problems, six used the evidence to support government policies, and three provided evidence as background information for the articles.

When various newspapers were compared, Southern Metropolis Daily (25%) had a higher ratio of articles giving scientific evidence. Beijing Youth Daily (23.1%) and Xinmin Evening News (23.8%) were the second highest ranked. In contrast, party media, including People's Daily (5%) and Guangzhou Daily (10.5%), rarely provided scientific evidence.

Chart 1.13: mentioning scientific evidence



Does the article mention any environmental problem caused by a fishery?

If yes, the problem(s) is 1) Pollution; 2) Overfishing; 3) endangered species caused by fishery; 4) Bycatch/discards; 5) Others.

Only 19 articles (19/133, 14%) mentioned at least one environmental problem. The topics in the media articles included over-fishing, illegal fishing, endangered species caused by fishery, and bycatch/discard.

If a story mentioned at least one environmental problem, it had a higher likelihood (40%) of giving scientific evidence than did one without mentioning an environmental problem (11.5%, $2(1)=6.6$, $p=0.01$). However, one should be cautious in interpreting this finding since articles mentioning environmental problems were a minority in our samples.

If any environmental problem caused by a fishery is mentioned, does the article give any remedy?

Among the nineteen articles mentioning environmental problems, fourteen give some remedies for the problems, which include:

- New law/regulation/policy (7 times);
- Education (2 times);
- Better enforcement (3 times);
- Other means (2 times).

When the article mentions the environmental impact of a specific fishery policy/method, does it highlight the positive impact or negative impact, or offer a neutral tone?

Only nine articles (9/133, 6.8%) talked about the environmental impact of a specific fishery policy/method. Among the nine articles, five articles highlighted negative impacts, three highlighted positive impacts, and only one article gave a balanced view.

Chart 1.14: Environmental problem and scientific evidence

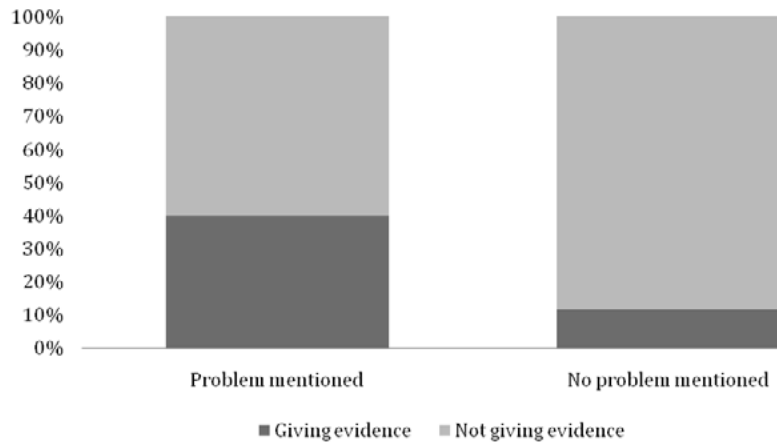
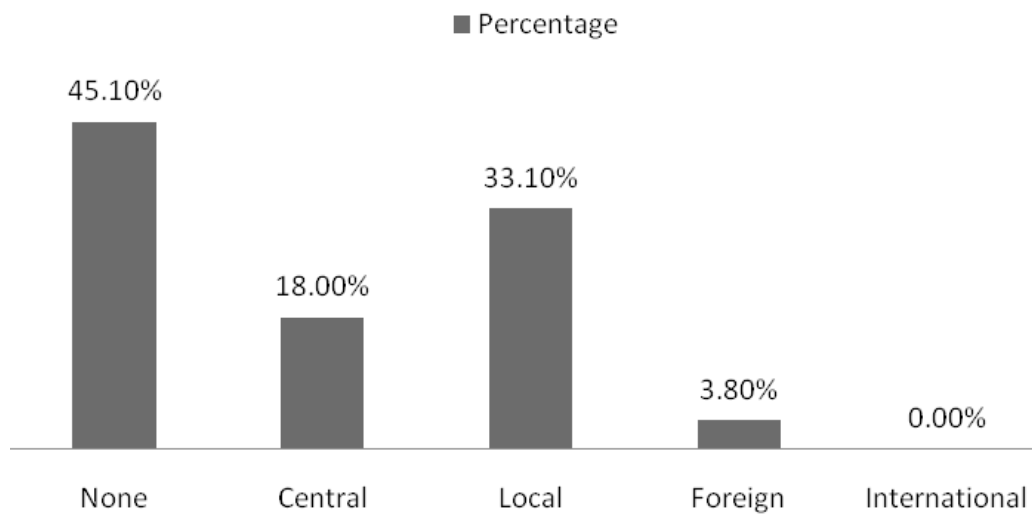


Chart 1.15: Key government agency



Does the article mention some key government agency?

Is the mentioned agency at the central level or local level?

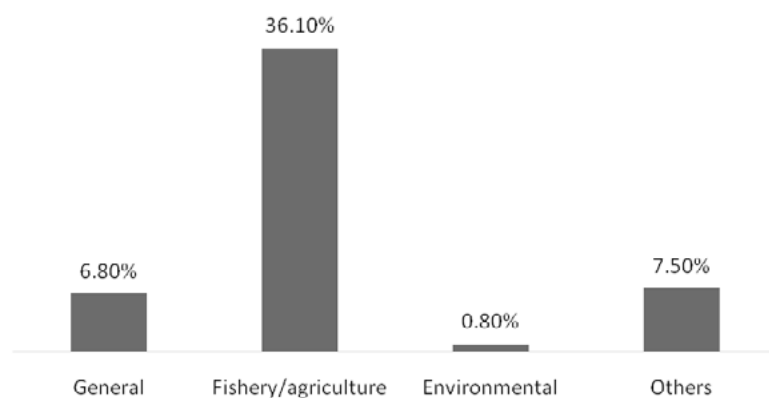
Is it part of a foreign government or international organization?

Is the mentioned agency located in the general government, the fishery / agriculture administration, the environmental administration or elsewhere?

Seventy three articles (55.9% of the sample) mentioned key government agencies, among which most of them referred to fishery administration departments, including the Ministry of Agriculture or local fishery/agriculture/aquaculture bureaus as key agencies.

Only one article mentioned the environmental protection bureau. This may be attributed to the administrative responsibility system and hierarchical characteristics of the Chinese government, under which responsibility for pollution at sea or in a river falls under the jurisdiction of fishery or marine administrations rather than an environmental bureau.

Chart 1.15: Type of Government Agency



CASE STUDY:

**China Fishery
News**

About China Fishery News

In August and September 2012, China Fishery News, a professional news outlet, published a total of seventy-seven articles related to fisheries and environmental issues. The length of the sampled article ranged from 103 Chinese characters to 2,649 characters.

China Fishery News is a national weekly newspaper specialized in the coverage of fisheries issues in China. Based on the circulation record, there are about 70,000 copies per issue. It is administered by the Bureau of Fisheries, Ministry of Agriculture. Its media contents are published primarily to reflect the interest of the party and the government.

In what category do the articles published belong?

The sampled articles were published in five locations, including Page 1: front page (16.9%); Page 2: special reporting (6.5%); Page 3: ecology and resources (67.5%); Page 4: fishery policy (7.8%); and Page 5: industry (1.3%).

More than 2 out of 3 of the articles were published on the ecology and resources page, which was the main channel of articles about fisheries related to environmental issues. Thirteen articles (16.90% of the sample) were published on the front page, which means 1 out of every 6 sampled articles were front page articles.

Is the reporting relevant to freshwater of marine fishery? And among each, is the reporting relevant to capture fishing or aquaculture?

More than half (55.8%) of the articles in this professional outlet concerned a freshwater fishery, which was higher than the proportion of articles in the overall sample, in which the majority (57.9%) were marine fishery articles. This finding demonstrates a different focus in reporting fishery news between professional media and general media.

Chart 2.1: Page outlet

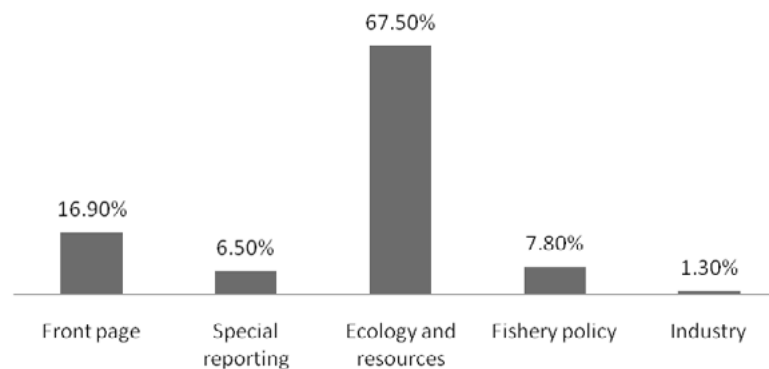
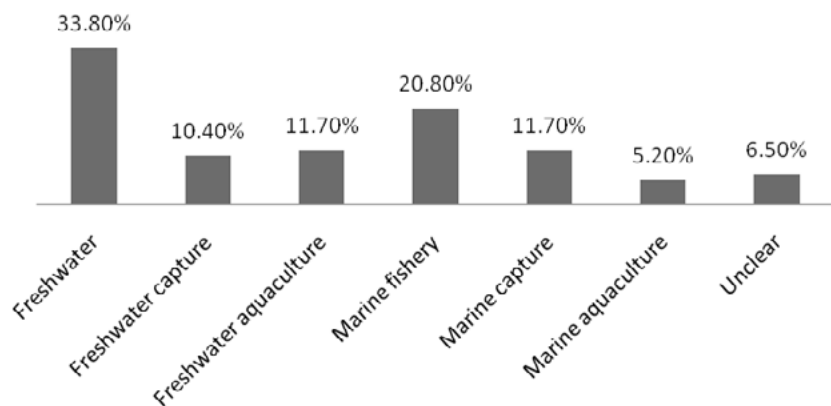


Chart 2.2: Relevant industry



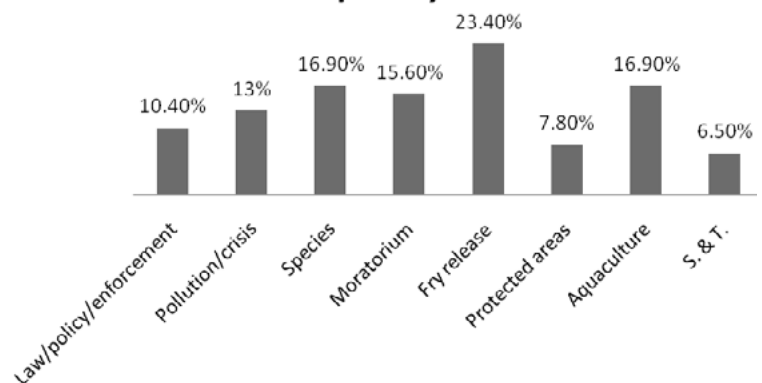
Is any fishery method mentioned in the article?

Twenty five articles mentioned at least one fishery method. In contrast to what was previously found in the overall sample, marine methods were less often mentioned in this professional channel. Only seven articles described some methods of marine fishery. Poison fishing/cyanide fishing (毒鱼) and blasting (炸鱼) were mentioned twice.

What is the main issue in the article?

Fry release¹ (23.4%) and moratorium (15.6%) were the two most frequent types of main issues reported, but the proportion concerning the moratorium was relatively lower in this professional channel than that in the overall sample, even though August 2012 was the ending month of the moratorium in most areas. This finding suggests that a moratorium is relatively more newsworthy in the general media than in professional media. However, the fry release issue seems to be more likely to be emphasized in the professional media than in the general media.

Chart 2.3: Frequency of main issues



Footnote:

1: If “wild-caught fisheries” and “full-cycle aquaculture” are two extreme fishing techniques, there are many different fishing techniques in between the extremes and many of these involved human intervention, such as the “ranching” of fishes, where the wild-caught fish that is below marketable size is being “fatten” in open-water cages before turning up in the market. Another technique is the culture-based fisheries where the fertilized eggs or hatched juvenile are released to the wild in order to artificially replenish commercially important fish stocks for the upcoming fisheries season. There is much debate about the impacts of these enhanced-fisheries techniques on the marine ecosystem, but one should not decline its potential to enhance fisheries yield to satisfy the growing demand. For example, enhanced fisheries can be certified sustainable under the Marine Stewardship Council (MSC) standard as long as the fisheries can meet the scope criteria.

In China, under the national directive for enhancing water quality, many local authorities are promoting the release of fish fry into polluted ponds and reservoirs to control eutrophication, restore the balance of aquatic environment and provide more fish supply. In many cases, fish fry of freshwater herbivore fish species, such as silver carp and grass carp are released to the ponds. It should be noted that introduction of species into an environment should be carried out under rigorous scientific studies as it can potentially cause detrimental effects to the natural habitats, such as exotic invasive species dominating the habitat. Even if the introduced species is an indigenous species, the introduction of hatched or domesticated breed can harm the genetic diversity of the natural breed (Felix Chan, email communication).

What are the main three sources cited in the reporting?

Forty one articles (53.2% of the samples) in the professional channel did not specify the sources of information. This ratio was higher than that in the Main Sample. Based on our coder's in-depth reading, we suspect that some articles that were not well-sourced might have been purely advertisements for commercial products.

Still, the most frequently cited source was a government/official, which was cited in 23 articles. No article cited an NGO as a source.

If we divide the samples into front page articles and inside page articles, the weighting of government/official cited as source is higher on the front page than on inside pages, i.e. 53.8% vs. 16.7% as single source; the proportions are 7.7% vs. 0% for articles in which the official source is one of the main sources. But if an article included no source, it was more likely to be located at an inside page (83.3%) than on the front page (38%).

Which frame does the reporting employ?

Remark: please refer to the explanation of these framing categories in the previous section

Again, propaganda frame (32.5%) was the most prevalent media frame and ecological frame (26.5%) was ranked second. No article was framed using the conflict frame in the China Fishery News, a party newspaper which does not report topics and contents that the Chinese government does not like.

The page outlet and framing were highly associated. Most of the front page and fishery policy articles used propaganda frames (61.5% and 66.7% respectively), in which official positions and government's doctrines are mostly found. But in the ecology and resources page, the most common frame used was ecological frame (36.5%) and propaganda framed articles constituted only 23.1% of all articles of the ecology and resources page. All articles on the industry page (100%) used the economic frame.

Chart 2.4: sources

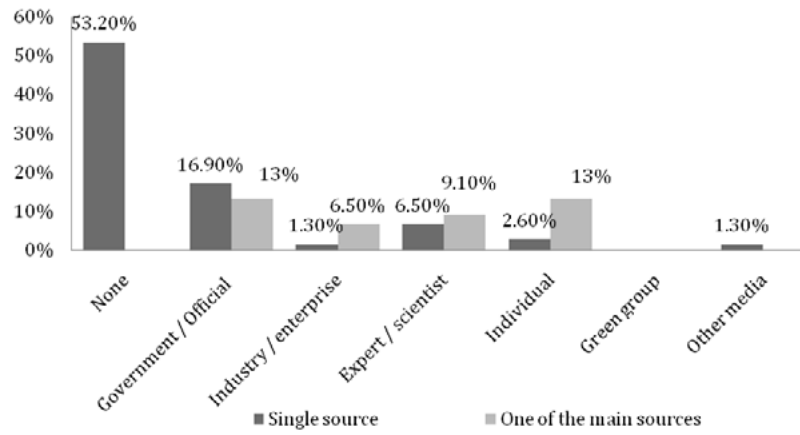


Chart 2.5: Weight of official sources

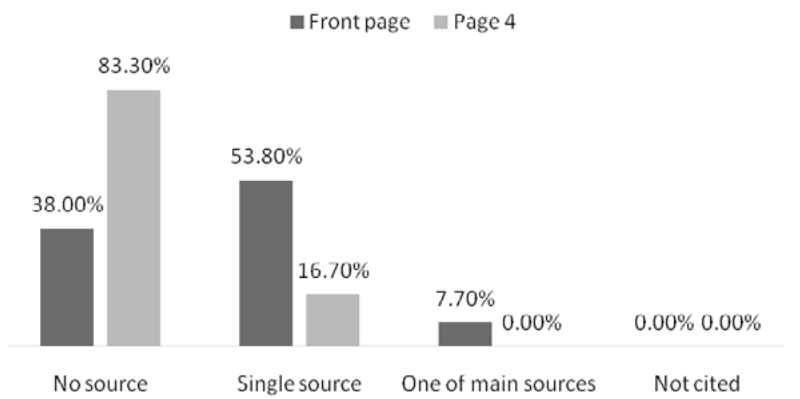


Chart 2.6: Framing

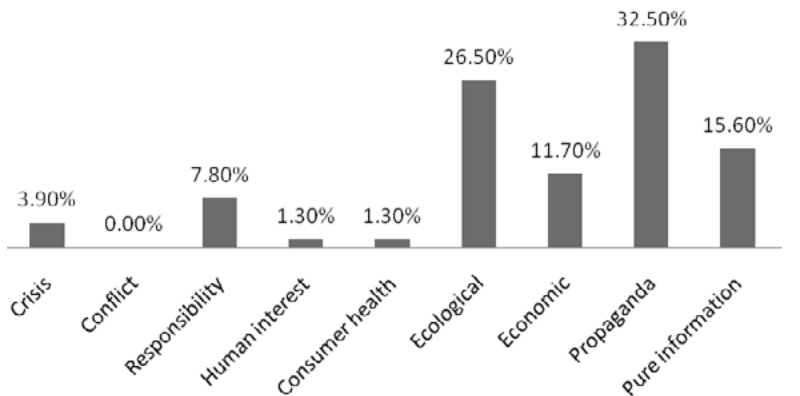
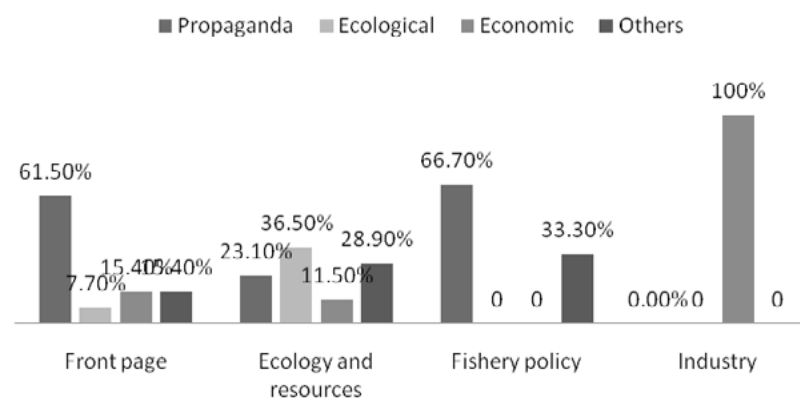


Chart 2.7: Page and framing



If the article mentions a fishery policy, what is/are the argument(s) for the policy?

Thirteen articles mentioned arguments. Among them, ten used environment protection or ecology as arguments. Economic development arguments were deployed six times. Political and consumer health related arguments were raised once. Consistent with the finding of the Main Sample as reported before, in the professional channel environment/ecology and economic development were the major arguments for policy-related media coverage.

Does the article give some scientific evidence? If yes, is the evidence given to elaborate the problem, to support the policy, or as background information?

Overall, the percentage of articles mentioning scientific evidence was 32.5% (twenty-five in quantity), which was statistically significantly higher than the share in the Main Sample (15.8%, $\chi^2(1)=6.98$, $p=0.008221$). Among the twenty-five articles, nine mentioned evidence for elaborating environmental problems, six supported government policies, nine provided as background information, and one article was grouped as others.

Does the article mention any environmental problem caused by a fishery?

If yes, the problem(s) is 1) Pollution; 2) Over fishing; 3) endangered species caused by fishery; 4) By-catch/discards; 5) Others.

Only seven articles mentioned relevant environmental problems. The breakdown was as follows: pollution (2);, over-fishing (2); endangered species caused by fishery (2);,and other problems (1). Pollution was mentioned in two articles, but the purpose was to promote new fishing methods, rather than identifying problems. The controversy over shark fins was the focus of the two articles related to "species extinction." The "discard" problem was not mentioned.

Chart 2.8: Scientific evidence



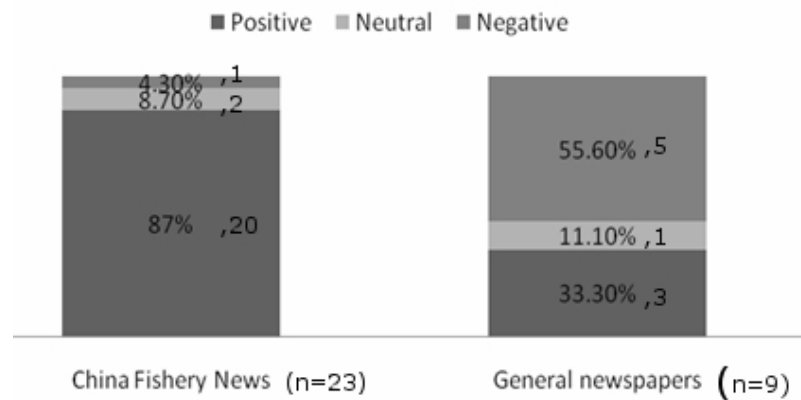
If any environmental problem caused by a fishery is mentioned, is any remedy given?

Although twenty-five articles were found to have mentioned fisheries problems, only seven of them suggested at least one remedy. Four articles aimed to promote new law/policy, one attempted to propose some technologies, and two advocated better law enforcement. Education was not mentioned.

When the article mentions the environmental impact of a specific fishery policy/method, does it highlight a positive impact or a negative impact, or present a neutral tone?

In the China Fishery News samples, twenty-three articles were found to discuss the environmental impact of a fishery policy/method. Contrary to the articles in the Main Sample (n=9), articles in the professional channel, the China Fisheries News, were more likely to highlight positively toned articles (87%) than did the newspapers in the Main Sample (33.3%). Their difference is statistically significant (Fisher’s Exact text, p=0.005636).

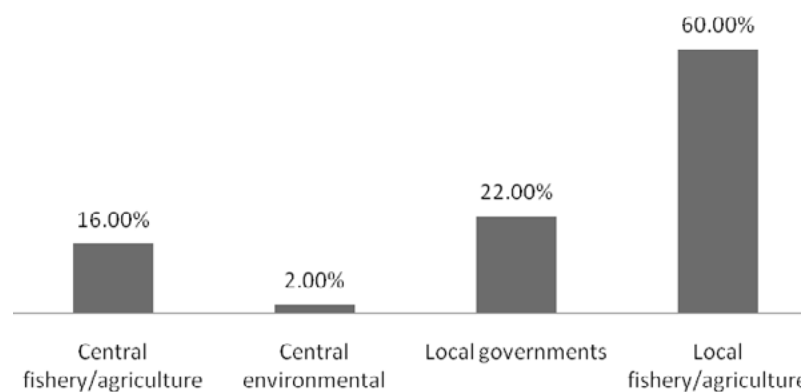
Chart 2.9: Tone of different newspapers



Does the article mention some key government agency? Is the mentioned agency in the central level or local level, or is it a foreign government or international organization? Is the mentioned agency the general government, fishery/agriculture administration, environmental administration or others?

Only government agencies directly related to fishery or environmental issues were mentioned in the samples. As was found in the Main Sample, the environmental administration was rarely mentioned.

Chart 2.10: Key Government Agency



Analyzing the Seafood Summit Fellows' Articles

1.5 Fellowship Analysis

Thirteen articles were obtained from the Earth Journalism Network website (<http://earthjournalism.net/program/10th-international-seafood-summit>). These articles (n=13) were compared with those in the Main Sample (n=133). The purpose of the comparisons aims to assess the extent, depth and coverage of sustainable seafood issues in the stories produced by the journalist Fellows. However, readers should be cautious when interpreting the comparison results because of the marked difference in sample size between two samples. The following variables were used to make comparisons.

1. Is the article original reporting, a commentary, a column/letter contributed by an outside writer, or reprinted from other media? (variable: Source)
2. Is the reporting relevant to freshwater or marine fisheries? And among each, is the reporting relevant to capture fishing or aquaculture? (variable: Industry)
3. Is any fishing method mentioned in the article? (variable: Method)
4. What kind of framing does the reporting employ? (variable: Framing)
5. If the articles mention some fishery policy, what is/are the argument(s) for the policy? (variable: Argument)
6. Does the article give some scientific evidence? (variable: Evidence)
7. Does the article mention any environmental problem caused by a fishery? (variable: Environmental problem)
8. If an environmental problem caused by a fishery is mentioned, does the article give any remedy? (variable: Remedy)
9. When the article mentions the environmental impact of a specific fishery policy/method, does it highlight the positive impact or negative impact, or use a neutral tone? (variable: Tone)

In the Fellows' Sample, ten (76.9%) were original news reports and three (23.1%) were commentary. Most of the samples were related to marine fishery (92.3%) and none of them wrote on the freshwater fishery issue. On mentioning fishery methods, there was no statistically significant difference between the samples.

The two most commonly deployed media frames were an ecological frame (38.5%) and human interest (23.1%). Only 14.3% and 12% of the Main sample used these two media frames respectively. Fellows' samples were more likely to report by using Crisis (15.4%) and Propaganda (15.4%) frames and were less likely to use pure informational frame and others.

Moreover, the Fellows' sample had a higher likelihood of giving arguments for policy (92.3%), to provide scientific evidence (46.2%) or to identify environmental problems (100%) and a remedy for the problems (69.2%), when compared to the Main sample. When the article mentioned the environmental impact of a specific fishery policy/method, the Fellows' sample also reported the news stories usually in negative terms (38.5%) and balanced (38.5%) terms, whereas the majority of the Main Sample did not exhibit any attitude toward the environmental impacts.

Again, caution should be exercised in interpreting the comparative findings as the two samples have very different sample sizes. Nevertheless, we found that the Earth Journalism Network Fellows managed to deploy arguments for policy, scientific evidence and indications of environmental problems and their remedies to support their stories more frequently than did the general fishery news articles found in the Main Sample. This seems to support the efficiency of the capacity-building program.

The comparative findings are presented in the following table.

Comparisons between Fellows Samples and the Main Samples

Variable	Categories	Fellow Sample		Main Sample		p-value
		Number	Percentage	Number	Percentage	
Source	Original report	10	76.9%	83	90.2	0.01
	Commentary and others	3	23.1%	9	9.8	
Industry	Freshwater	0	0.0%	34	25.6	--
	Marine	12	92.3%	77	57.9	
	Not mentioned	1	7.7%	22	16.5	
Method	Yes	4	30.8%	34	25.8	n.s.
	No	9	69.2%	98	74.2	
Framing	Crisis	2	15.4%	7	5.3	--
	Human Interest	3	23.1%	16	12.0	
	Ecological frame	5	38.5%	19	14.3	
	Propaganda	2	15.4%	13	9.8	
	Purely informational	1	7.7%	30	22.6	
	Others	0	0.0%	48	36.1	
Argument	Yes	12	92.3%	18	13.5	<0.0001
	No	1	7.7%	115	86.5	
Scientific evidence	Yes	6	46.2%	21	15.8	0.02
	No	7	53.8%	112	84.2	
Environmental problem	Yes	13	100.0%	20	15.0	--
	No	0	0.0%	113	85.0	
Remedy	Yes	9	69.2%	17	12.8	<0.0001
	No	4	30.8%	116	87.2 %	
Tone	Positive	1	7.7%	1	0.8 %	
	Balanced	5	38.5%	3	2.3 %	
	Negative	5	38.5%	5	3.8 %	
	No tone	2	15.4%	124	93.2%	

Conclusion

1.6 *Conclusions*

While environmental issues, such as pollution or land destruction, have become major public concerns in China, relatively speaking, fisheries and ocean-related environmental issues are rarely covered in the Chinese news media. Even when the topics are covered, fisheries-related environmental problems, scientific evidence, arguments for policy, and remedies are not commonly reported or mentioned in the articles. In the party media, like People's Daily and Guangzhou Daily, official statements and government information are key news sources. Stories of the party media stories are often framed as propaganda and thus scientific reasoning and evidence are scarcely cited.

On the other hand, market-oriented, commercial, or metropolitan newspapers, like Beijing Youth Daily, Today Evening News, Xinmin Evening News, and Southern Metropolis Daily, seem to have more interest in environmental coverage on a variety of topics (including fisheries and ocean issues) but their primary news focuses are placed on social conflict or responsibility issues in the environmental crisis.

Two Guangzhou-based newspapers, Guangzhou Daily and Southern Metropolis Daily, are the two major sources of news of Chinese fishery industry. Generally speaking, the press in Guangdong province enjoys a relatively higher level of press freedom than media outlets in other provinces. These two newspapers have more pages dedicated to daily news coverage than other newspapers. For example, Guangzhou Daily has 28 pages for major news on weekdays, but Today Evening News has only 14 pages altogether. Moreover, the fishery business, especially marine fishery, is more prosperous in Guangdong than in North China. Professional and specialized media, which are represented by the China Fishery News in this study, tend to present more balanced coverage of various environmental problems but the articles are usually presented as propaganda or in uncritical terms.

Overall, independent and investigative reporting on fisheries and marine issues are not frequently found in the Chinese newspaper media.

Finally, when we compare the Seafood Summit Fellows' articles to those obtained from the sample of the six Chinese newspapers, the Fellows, who have completed the capacity-building exercise, appear to have gained knowledge required for good practices of

reporting fishery issues in the mass media. Their news articles demonstrate the awareness of raising arguments for policy issues, citing scientific evidence, and discussing environmental problems and remedies. Despite the preliminary nature of the findings, we would recommend that the Earth Journalism Network organize more capacity-building training exercises for Chinese environment journalists in the future.

**In-Depth Interview with
Chinese Journalists
Covering Environmental and
Fisheries News**

Background for the Interviews

In order to obtain an in-depth understanding of the Chinese journalist's knowledge, attitude, practices and products when covering ocean and fisheries issues in Chinese mass media, we conducted in-depth qualitative interviews with 25 media workers from 19 Chinese media. The participants were purposefully selected to reflect different varieties of media types, characteristics and geographical locations in China. Within this sample, 17 are journalists, six are editors and two are television producers. Their media outlets are geographically based in either Beijing or Guangzhou. Twelve media professionals from eight media outlets are Guangzhou-based and 13 media professionals from 11 media organizations are Beijing-based.

Different types of media outlets were chosen. Among the sampled media organizations, two are television stations, one is a radio station, nine are newspapers (published daily, weekly and others), five are magazines (published weekly, biweekly or monthly), and the other two are Internet portals. As some participants requested to be anonymous, a partial list of media organizations is provided as follows: CCTV, China National Radio, Guangming Daily, Nanfang Daily, Southern Metropolis Weekly, China Economic Times, Yangcheng Evening News, China Science Daily, Southern Metropolis Daily, NanfangNongcunBao, NongcaiBaodian, China Fishery, Caijing, and Caixin.

According to the media types and characteristics, we classified the sampled media outlets into several types for data analysis. They are party-state agencies, metropolitan media, business media, industry media, academic media, Internet portals and others. The party-state agencies, including CCTV, Guangming Daily, China National Radio, Nanfang Daily, are those media whose major agenda is to report government's policies, announcements, and activities and serve the primary interest of the Chinese Communist Party. The metropolitan media, including Southern Metropolis Daily, Southern Metropolis Weekly, South Weekly, and Yangcheng Evening News, are market-orientated media targeting general urban readerships. They tend to report not only official announcements but also news from non-official

sources and investigative articles. Business media, consisting of China Economic Times, Caijing and Caixin, are those media that report primarily on finance and business news. Industrial media, including Nanfang Nongcun Bao, Nong cai Bao dian and China Fishery, are those media reporting on news related to agricultural and fishery industries. Academic media, in this case China Science Daily, publish academic papers and news. Lastly, Internet portals, such as Tencent and NetEase, are the websites of the Internet news portals.

All interviews were undertaken in the period from December 15 to December 31, 2012. Nineteen out of the 25 interviewees were interviewed face-to-face and the remaining interviews were conducted by phone. Some refused to be interviewed face-to-face because of possible "sensitive topics" and some were traveling and were not available in town. Each interview lasted from 30 minutes to a few hours. The face-to-face interviews were taken place in cafes, restaurants or in participants' offices.

We summarize the obtained findings into the following subjects.

1 – Historical Context of China's Environmental Media Coverage

According to participants' accounts, environmental news reporting in China can be traced back to the 1970s. This type of media coverage has increased recently because of two factors: growing public concerns about environmental issues and problems in China, and the increasing information that citizens possess on environmental issues. Since 2003, a series of environmental crises have occurred in China, and consequently these incidents drew much attention in both domestic and international media.

Since 2009, a number of media have set up special pages for environmental news reporting as mass protests and dissident voices have surged in recent years. According to the interviewees, some Chinese citizens believe that ecological destruction caused by environmental pollution threatens human health and endangers ecosystems. The interviews suggest that citizens realize that behind the

Chinese environmental problems is an unsustainable economic development strategy that does not take into account the environmental cost.

Different media outlets place various emphases on environmental concerns. Media professionals from the party-state media said that they mainly publish press releases from the government and rarely produce original environmental news coverage, whereas those from the metropolitan media, which serve more educated readers primarily, focus on social crises triggered by the environmental issues. For the academic and industry media, their major objectives are to serve a tiny part of Chinese readers, experts, scholars, and technicians – and to inform the readers from a scientific stance. Most of the respondents agreed that although there has been a growing trend of more environmental coverage in the media, Chinese environmental reporting badly needs to be improved.

2 - Professional Backgrounds of the Environmental/Fishery Media Professionals

Most of the respondents hold a university degree in non-scientific majors and reported social news before they set foot in the environmental field. The exception to that pattern were found in the academic and industry media, which tend to hire journalists who are masters or doctoral-level graduates in fields such as aquaculture or biology.

Based on the interviews, many experienced journalists were found to have earned their knowledge about fisheries and the environment through interviews and on-the-job learning – the more articles they had done, the greater their relevant knowledge of these issues. They agreed that good journalists have to catch up with vast new knowledge quickly whenever a new issue appears in the news. Their main sources included academic papers and information online. The journalists reported that talking with relevant experts can help increase their learning curve. Many international conferences were held in major cities in China in recent years, especially in Beijing, and that has provided journalists with opportunities to reach the forefront of knowledge.

Except for science reporters, many journalists took more time to learn specific knowledge when reporting environmental or fishery events, especially for investigative projects. They had to digest new knowledge before reporting, and then expressed it in non-expert language. To verify the accuracy of their reports, some journalists said that they might send out their articles to experts or consult expert opinion before writing.

Although a few journalists we interviewed said that prior knowledge is not the most important factor determining the quality of media reports, they tended to agree that more specialized environmental and fishery journalists are needed.

3 - Information Sources

Major information sources for environmental/fishery articles included official press conference material and announcements, social media, research institutions, personnel from environmental NGOs (ENGOs), and informants or friends like scholars and environmentalists.

Party-state agencies reported mostly on governments, policies and announcements. Industry media not only covered issues surrounding the government but also covered business enterprises' practices and activities that can give rise to environmental issues. Academic periodicals usually followed international scientific seminars. Business media, aiming at producing in-depth reports, tended to search as many sources as possible. Other media obtained information from varied sources.

An important recent development is the emerging role of new media as information sources. A substantial part of our interviewees mentioned the Internet as a major information source; a few of them listed new media as the most important source of information. Their practice of information seeking via new media included browsing the Internet news portals and checking Chinese microblogs – what we call Weibo in Chinese. Some reporters even read academic theses via online databases. Some environmentalists and journalists (The two roles may sometimes overlap. We will elaborate on this later.) organized activities on

Weibo. We can say that new media are an indispensable source of information.

4 – Role of the Governments as Interviewees

Local and other levels of government in China have significant impacts on the practices of the media organizations and journalists when reporting about environmental or fishery issues. Many journalists said they relied on government sources. However, we found from the interviews that the government departments are not cooperative when responding to media interview requests. Journalists, even from party-state agencies, do not enjoy easy access to government officials for interviews or information. Most government departments prefer to hold press conferences or to release news via official media. Some officials think that the governments are not obligated to answer media's questions.

5 – Role of the Governments as Supervisors

According to our respondents, environmental news articles are known to be less politically sensitive, while environmental reports usually receive less censorship, compared with other political or social reports. Topics that are commonly more politically sensitive as environmental news are those events that could possibly cause social movements or might link to important business, enterprises or governmental interests. For example, many hydropower stations built along the Yangtze River have led to the extinction of local rare aquatic animals. However, reports of environmental destruction are restricted because the hydropower projects are tied to the interests of local government agencies. Once sensitive emergencies break into the news, the local government will order individual journalists to immediately stop reporting through cell phone messages.

The degree of censorship depends on the type of media. Based on the respondents, the party-state media are viewed by government officials as a "double-edged sword," since they are more trusted by the government but they may also be

subject to strict supervision. As for the metropolitan media, it is difficult for them to get responses from government officials as they put more emphasis on social crises caused by environmental or fishery issues. Academic and industry media had a relatively easier reporting task as they present articles purely from a scientific point of view.

6 – Media Framing of News Articles

When reporting on environmental and fisheries issues, journalists tended to frame their articles with a certain "angle" or a media frame. There were a handful of media frames that were frequently used. Party-state agency newspapers and periodicals usually framed their articles as party propaganda. But especially when covering pollution issues, the metropolitan media can frame the articles as a way to ask targets to take responsibility. For example, polluting companies have been urged to take on responsibility for those impacts. Systems of compensation for losses were frequently examined by journalists – especially with regard to how to evaluate the compensation amount and the financial loss because of environmental damage. Another common media frame used was the environmental frame, which is most often used in hydropower station construction reports. For example, the devastating environmental impact of various projects on fish species and ecosystems was fiercely debated in some of the investigative reports. The socio-economic frame was also frequently employed. The economic welfare of fisheries practitioners drew much attention when the environmental issue caused severe socio-economic disruption. Lastly, industrial media tended to report their articles from the corresponding industrial and financial perspective and academic media usually reported the articles through a technical or scientific lens.

7 - Environmental Journalists and Environmental Non-governmental Organizations (ENGOS) in China

In recent years, a number of environmental NGOs in China have become increasingly active in environmental protection. According to the interviews, many environmental journalists, especially relatively young ones, have built up a mutually

beneficial relationship with the ENGOs.

Firstly, an ENGO can be a major source of articles for journalists, but it is not the only one or even the most important one. ENGOs usually pitch their news to media reporters aggressively if they are planning any newsworthy activities. Usually, environmental journalists have their own list of sources of articles depending on what kind of media they work for.

Secondly, ENGOs are not the most cited source for journalists. There are two reasons. On one hand, some journalists said there was an unwritten rule in Chinese media that the media have to downplay reports on ENGOs because the government does not encourage the development of any forms of NGO. Journalists usually cite a member of an ENGO without mentioning its title. Then, some journalists said that a large number of ENGOs are indeed sponsored by commercial corporations. As a result, their opinions might be biased and reflect their sponsor's interest. Moreover, some journalists might have reservations on ENGOs' comments because they believe some ENGO might make "irrational" or "unfair" responses to the issues. According to journalists we talked with, many ENGOs made their claims without scientific support.

Thirdly, strictly speaking, journalists are not allowed to join any ENGOs. ENGOs in Guangzhou seemed to be less active but ENGOs had greater influence on journalist circles in Beijing. Some journalists we interviewed in Beijing describe themselves as environmentalists and enthusiastic participants of ENGO's activities. However, most of them see themselves as "volunteers" for a certain activity instead of regular members, aiming to avoid violation of conflict-of-interest rules that restrict Chinese media professional to join any ENGOs.

8 - Feedback and Influence on Environmental Coverage

In our interviews, many journalists commonly felt that urban audiences did not care much about fishery news or environmental news at large. That common feeling is supported by empirical data. For example, in a newspaper agency, there is a

feedback rating system calculated by click rate and republish rate on the website. A piece of environmental reporting often gets very low attention. The news organization's interpretation was that audiences care more about people's livelihoods and rather less about fish. Another Internet news portal also experienced a low readership for environmental news. As was noted by an editor participant, environmental news, along with macro-policies news and educational articles, was relatively unwelcome.

However, some thought that the situation was better than years before, and said this could be due to a rising awareness of the public. Additionally, NGOs and Weibo, according to a journalist, were important contributors to the rising concerns.

Recommendations

3.1 *Recommendations*

Fishery and marine conservation involves global environmental issues that have gained significant attention in a variety of sectors: policy makers, scientists, environmentalists, social scientists, and even media researchers. Many global organizations and international communities have been devoting substantial efforts to tackle these problems.

Despite the problem's global nature, China has a local media landscape that is completely different from the Western model for the media industry in a democratic society. Chinese has only one dominant language for a very large country. China's media industry is strictly regulated and most of the media outlets are controlled by the government. "Free media" are nonexistent. Sensitive Internet content is automatically and manually censored. International websites, such as Facebook, YouTube, and Twitter, are blocked by the Great Firewall. Despite the authority's ubiquitous restrictions, there has been growing number of Chinese journalists who are practicing "American-style professional" or "advocate professional" journalism (Hassid, 2011). On the other hand, social media have become a major vehicle in driving changes in the media industry and journalistic practices in China. Weibo is known as an important communication tool, perhaps even more influential than traditional news media in certain aspects, in the formation of public opinion and social agenda.

"Think globally, act locally" should be the right motto to guide our future development in the capacity-building training. In this study, we learn from our interviews about the reporting practices of Chinese environmental journalists. It is fair to say that in many ways this journalistic "beat" - news related to a fishery or the environment itself - in some media organizations is underdeveloped. This "beat" will not easily catch up with the growing public concern about environmental and pollution problems in China and the rising demand for high quality of media reporting. The propagandist style is still the dominant approach to media reporting in many newspapers. The Government remains the primary source of news and information. Nevertheless, some newspapers, for example certain ones based in Guangzhou, have been rapidly establishing traditions of excellence in cov-

ering environmental news and have gained much knowledge as they assemble teams of experienced reporters in providing high quality environmental and fishery coverage. Future capacity-building efforts should be tailored to different types of news outlets at various levels of development to meet the specific demands.

In the capacity-building training, a global perspective and state-of-the-art scientific knowledge should be well communicated by local frontline journalists, who should be empowered to write high quality stories. However, Chinese journalists are situated within a social context with regulatory constraints, in a specific professional culture, embedded within distinctive social practices. Part of the capacity-building training materials should be localized (better to be done by local journalists) to reflect such local dynamics and local values, but at the same time they should uphold the global perspective advocated by environmentalists.

Appendix

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Appendix:

- 1) Content analysis protocol
- 2) Semistructural interview protocol

Content Analysis Protocol

Media: _____

Title: _____

Byline: _____

Date: _____

Source:

1. Original report.
2. Commentary.
3. Reprint from ____.
4. Reader's letter.

Length of reporting: ____ words.

With Picture: Yes/No

Page outlet:

1. Front page
2. Local news.
3. National news.
4. International news.
5. Environmental/S. & T.
6. Business/Industry.

Relevant Industry:

1. Freshwater:
 - 1.1 Capture fishery.
 - 1.2 Aquaculture.
2. Marine:
 - 1.1 Capture fishery.
 - 1.2 Aquaculture.
3. Not mentioned

Is any fishery method mentioned? Yes/No.

If yes, which method: _____.

Issues (what's the main issue the reporting talks about):

1. Law, policy and enforcement.
2. Environmental pollution.
3. Over-fishing.
4. Species distinction/protection/conservation.
5. Shark fins.
6. Moratorium.
7. Fry release.
8. Protected areas.
9. Maximum Sustainable Yield.
10. Certification.

11. Fish stocks.
12. Aquaculture.
13. Seafood safety and consumer health.
14. Science and technology.
15. Others.

Sources:

1. Government/officials, including governmental organizations;
2. Other media;
3. Industry/enterprise;
4. Experts/academic institutions, including scientific reports;
5. Environmentalists/NGO, including foreign and international NGOs;
6. Individuals;
7. Others.

Table of sources analysis

	Kind of Sources	Major Actor (Y/N)	Number of Works Cited
1			
2			
3			

Justification/reasoning for policy:

1. Environmental protection;
2. Economic development;
3. Politics.
4. Consumer health.
5. Others.

Is there any use of scientific evidence? Yes/No

If yes, it is

- 1) Illustration of environmental problems;
- 2) Supporting to policy;
- 3) Background information.

Is there any mention of environmental problems?

Yes/No

If yes, the problem(s) is

- 1) Pollution;
- 2) Over fishing;
- 3) Species distinction;
- 4) Bycatch/discards;
- 5) Others.

Is there any mention of remedies? Yes/No

If yes, the remedy is:

- 1) Policy;
- 2) Education;
- 3) Technology;
- 4) Better enforcement;
- 5) Other means.

When talking about means/development/technology of fishery, the article talks about different impacts on environmental by:

1. Highlighting the positive impacts;
2. Balanced framing;
3. Highlighting the negative impacts.

Framing:

1. Crisis.
2. Conflict.
3. Responsibility.
The players in the conflict are: _____.
4. Who is responsible? _____.
4. Human interest.
5. Consumer health.
6. Ecological frame.
7. Economic frame.
8. Propaganda
9. Purely informational/unclassified.

Does it mention key government agency? Yes/No
If yes, the agency is: central/local,
and the government/fishery administration/envi-
ronmental administration.

Semistructural interview protocol

To facilitate our note-taking, we would like to audio tape our conversations today. Please sign the release form. For your information, only researchers on the project will be privy to the tapes which will be eventually destroyed after they are transcribed. In addition, you must sign a form devised to meet our human subject requirements. Essentially, this document states that: (1) all information will be held confidential, (2) your participation is voluntary and you may stop at any time if you feel uncomfortable, and (3) we do not intend to inflict any harm. Thank you for your agreeing to participate.

We have planned this interview to last no longer than one hour. During this time, we have several

questions that we would like to cover. If time begins to run short, it may be necessary to interrupt you in order to push ahead and complete this line of questioning.

Introduction

You have been selected to speak with us today because you have been identified as someone who has a great deal experience in environmental journalism. Our research project as a whole is focused on the environmental journalism in Chinese media, with particular interest in understanding how environmental issues related to fishery are reported. Our study does not aim to evaluate your techniques or experiences. Rather, we are trying to learn more about environmental journalism from you.

A. Personal Background

1. Gender and age?
2. How long have you been an environmental journalist? working as journalist?
3. What is your highest degree?
4. What is your field of study? Is it journalism, Chinese, Science, or other major/minor?
If your major/minor is not environmental science or relevant field, have you enrolled in any relevant training?
5. Briefly describe your understanding of major environmental issues in China today.
6. Are you an environmentalist?
Probe: Are you engaged in any environmental organizations, or activity?
7. Briefly describe your role in your institution.
Are you a full-time environmental journalist, or covering other areas also?
If you are also covering several areas, how much time are you using in environmental reporting?
Are you also an editor?
8. What caused you to be an environmental journalist?

B. Institutional and Procedural Arrangement.

1. Briefly describe the media/institution you work at. Is it:

National, regional (in provincial level), or local?

Party, professional, or commercial?

The circulation of the media?

2. Is there a section of environmental reporting in your institution? Or it belongs to other sector: science, regional news, or others?

3. How many environmental journalists are there in your institution?

4. What is the relationship between editor and environmental journalists in your institution?

Probe: Who is the one you report to? Do you have enough autonomy?

5. Which resources are provided for environmental reporting?

Probe: Is there some professional training?

6. How many pages are distributed to environmental stories?

C. Journalistic Practice

1. Briefly describe your duty as an environmental journalist.

How many stories would you write in a month in average?

2. How do you find topics?

Probe: Do you often use Internet to find topics or sources?

Which media/website do you read/watch most frequently?

3. What is the average length and layout of environmental stories?

Probe: Are long stories more popular? Which do you more prefer to?

4. What kinds of environmental stories have you

covered? Policy, crisis, conflict, or technology, and so on.

5. What's the criterion you choose stories?

Probe: Are stories of crisis or conflict more popular than others?

Are local, regional, national, or global stories more preferred?

6. How do you find sources?

The most cited sources: government/officials, experts, industry, environmentalists/NGOs, other individuals.

Probe: Do you always try to find different sources and balance different interests and opinions?

Do you feel difficult to find sources besides government and industry?

7. Please describe any tactics or techniques you always use in interview or writing.

8. Have you been assigned to cover issues you are not familiar with?

If so, how will you find sources in a short time?

9. Have you ever covered fishery stories?

D. Problems and suggestions

1. Do you feel satisfied with your job?

Probes: Will you continue to be a journalist in the foreseeable future?

If not, what is your plan for future?

2. Please give criterions of "good" environmental reporting.

3. Please evaluate the quality of environmental journalism in China, and give some reasons for your conclusion.

4. Please list those outstanding problems you face in covering environmental issues, including, but not limited to:

Censorship; lack of environmental knowledge; unpopularity of environmental issues; insufficient resources.

5. To what extent is environmental reporting cen-

sored? Is censorship a severe problem?

Please list all the means of censorship you have ever faced in covering environmental issues.

6. Do you think you have enough professional knowledge to cover environmental issues?

How do you upgrade yourself to do it better?

7. Are environmental stories popular in Chinese media?

Do you think there is enough concern to environmental issues in Chinese society?

8. Do you get enough support from your institution?

9. According to your opinion, what's the most important to improve quality of environmental journalism in China?

E. Open question

Please give any question, suggestion or review to our project.

Part 3: A list of bylined journalists

People's Daily (overseas) - 人民日報 (海外版)

Yáng yāo shùn	楊約順
Fùjiàn bīn	傅建斌
Lìzhìwěi	李志偉
Wǔxiǎo Yáng	伍曉陽
Húshèyǒu	胡社友
Wáng Píng	王平
Géyúwěi	葛瑜瑋
Guō chéng	郭程
Hóu Jiànsēn	侯建森

Beijing Youth Daily - 北京青年報

Túmíng	塗明
Càizhènjīn	蔡鎮金
Xiàguānnán	夏冠男
wǔkūnpéng	伍鯤鵬
Yánxiánglíng	閔祥嶺

Guangzhou Daily 廣州日報

Huánglán	黃嵐
Lìwén	李文
Zhū yǔ	朱宇
Liángjīng	梁菁
Liú xìng	劉幸
Lìgāng	李鋼
Féngjūn fú	馮軍福
Yáng yang	楊洋
Chényù	陳玉潔
Wángchōngguān	王沖冠
Liùxiānniàn	陸先念
Liángjīn qiū	梁錦秋
Liú xìng	劉幸
Chénlín	陳琳
Guō cí	郭慈

Southern Metropolis Daily -

南方都市報：

Péngměi	彭美
Yángxiǎohóng	楊曉紅
Liúsùnán	劉素楠
Xúhè	徐赫
Kāngyān	康殷
Luó yùmíng	羅煜明

Xinmin Evening News - 新民晚報：

Hánjīng	韓兢
Méi yīng dí	梅瓊迪

China Fishery News - 中國漁業報：

Hóu xiǎo jiàn	侯小健
Dèngsháoyǒng	鄧韶勇
Zhōujiàng	周強
Wēn cāng	溫蒼
Liú jiāxié	劉佳協
Fàn shù bīn	范樹斌
Zhāngxù dōng	張旭東
Yú lí wén	于麗文
Jiāngxiǎo	姜曉
Guānjìng	關靖
Luō bīn	羅斌
Lìzhìchāo	李志超
Dàijúfāng	戴菊芳
Qízhèn huá	齊振華
Liǔ jùn	柳璿
Mì shān	密山
Yíyāngguǎng	宜央廣
Qiāngdōng	善東
Liú kūn	劉鯤
Hǎi níng	海寧
Xī níng	西寧
Héshèng nán	何勝楠
Wú pèi pèi	吳佩佩
Lìyúnpíng	李云平
Zhāngyuè	張玥
Féng wěi yè	馮偉業
Wánghuá píng	王華平
Yáng lí	楊麗
Húwén	胡文
Xuē mǎyì	薛馬義
Huángkūn	黃堃
Fàn cún bǎo	范存寶
Tányèguó	譚業國
Chénbèi	陳孛
Qiāngxí	善習
Chénqún	陳群
Chéngài huá	程愛華
Zhàohǎi lín	趙海林
Zhāngshì jūn	張世軍
Hú miǎo	胡淼
Luō shī yín	羅詩吟
Yú shuǐ	于水
Zhàotíng cháng	趙廷常
Zhāng shōuyuan	張收元