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TRIES: FINDINGS FROM NORWAY, CHINA AND GHANA

*by*

Atle Midttun (Norway), Paddy Coulter (Oxford) Audrey Gadzekpo  
(Ghana) and Jin Wang (Sun Yat Sen University)

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# COMPARING MEDIA FRAMINGS OF CLIMATE CHANGE IN DEVELOPED, RAPID GROWTH AND DEVELOPING COUNTRIES: FINDINGS FROM NORWAY, CHINA AND GHANA

Atle Midttun<sup>1,\*</sup>, Paddy Coulter<sup>2</sup> Audrey Gadzekpo<sup>3</sup> and Jin Wang<sup>4</sup>

<sup>1</sup>*Norwegian Business School*

<sup>2</sup>*Green College (Oxford)*

<sup>3</sup>*University of Ghana*

<sup>4</sup>*Sun Yat Sen University*

\**atle.midttun@bi.no*

## ABSTRACT

This article undertakes a systematic study of press articles on climate change in the rich West (Norway), the emerging East (China) and the developing South (Ghana) to explore the cognitive basis for collective climate policy action. Newspapers depict Ghana moving out of a climate-victimhood towards a more active climate policy for development; China figures as spearheading energy efficiency and clean technologies for growth; while Norway is described as exporting its climate action. Our analysis finds little common ground for climate mitigation through binding climate emission limits and carbon pricing. A pluralistic 'green growth' strategy would have greater chances of success. The article also highlights differences in sources and story types: Norway features much enterprising journalism, and academics are the dominant source. In China and Ghana most articles are routinized, with politicians and public officials dominating in China, whilst the press makes heavy use of international sources in Ghana.

**Keywords:** climate change, media framing, green growth, Africa, Europe, China, Norway

## 1. INTRODUCTION

The climate challenge is one of the issues that have made it to the forefront of global discourse. However, like many other global issues, it is marked by a discursive struggle that shapes the chances of maintaining protracted conflict or of finding common solutions. A critical question in focus in this paper is to what extent, and how, common perspectives and compatible solutions to the climate challenge can be shared across mature, developing and rapid growth economies that will need to act together to meet the common threat.

The media study reported in this article, explores the cognitive background for the climate policy divide through the lens of leading newspaper articles from Norway, China and Ghana. The choice of countries was made to represent mature, catch-up and developing economies, in order to capture the critical diversity of positions in the climate debate within a minimum set of countries<sup>1</sup>.

The choice of a press analysis as an entry point to the climate policy discourse rests on the view of the press as a major framer of public debate and conveyor of influential framing by other actors. The use of national newspapers as a lens allows penetration beyond the rhetoric of official national perspectives on climate issues into the broader climate debate, for which the press acts as one of the critical public spaces.

The article is organised in five sections. The first section presents a brief introduction on media analysis and framing. A second section explains the methodological approach. Then comes a section on sources and story types, followed by a section on framing in Norway, China and Ghana. The final sections present the comparative analysis and draws some normative conclusions on compatibilities and contradictions in the framing of climate change particularly with respect to implications for climate negotiations.

## **2. FRAMING CLIMATE CHANGE IN THE MEDIA**

There is a burgeoning literature on media coverage of climate change, though until recently there were not many studies of media in emerging and developing countries and very little comparative research. The field, which has developed apace particularly over the past decade, started with studies of media mainly in the developed world - and, until quite recently, very largely of the English language media, though this imbalance is being rectified.

Dorothy Nelkin (1987) is seminal in claiming that the mass media, rather than education or experience, is the main source for people's understanding of the science of global warming and other scientific issues which the public do not confront directly in their everyday lives. A small trickle of groundbreaking studies during the 1990s such as Ader's survey of environmental coverage in the *New York Times* (Ader, 1995) and Ungar's tracking of global warming and related issues in the US national news (Ungar, 1992, 1998 and 1999) expanded this literature.

Ader's and Ungar's use of news archives to analyse content of media coverage of environmental issues has become standard practice for climate coverage studies but Ader's longitudinal survey was among the first to stand up the agenda-setting theory for the salience of environmental issues. Our press analysis follows Ungar in adopting a comparative approach as yielding important insights: Max Boykoff's research has been influential, starting with his analysis of US newspaper coverage of global warming between 1988 and 2002 (Boykoff and Boykoff, 2004) and extending this to UK tabloid papers (Boykoff and Mansfield, 2008) and a US/UK comparison (Boykoff and Rajan, 2007). The framing of climate change in UK newspapers has been

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<sup>1</sup>The study has limited the number of countries in order to undertake a thorough systematic analysis of the press in each of them. It is nevertheless noteworthy that our findings are consistent with broader studies comprising more countries, such as Eide and Kunelius (2010) and Painter (2011 and 2010).

extensively analysed by Carvalho (Carvalho, 2007; see also Hulme, 2007).

According to Boykoff (2004, 2007) and Carvalho (2007) newspapers do not simply observe and record societal frames on climate change but shape these according to journalistic norms and biases. Their construction of news determines how or indeed whether the issue will make the news and who is chosen to speak for it. Carvalho's work also points to the differences not just between countries but between news organisations within countries. It was thus important that this study should include different types of national newspaper within each of the three countries surveyed and that a particular effort was made to identify the different categories of prime sources used for the writing of the articles in the study<sup>2</sup>.

Painter's (2001) study, 'Poles Apart: The international reporting of climate scepticism', exposed wide variations between countries in the levels of media attention given to sceptical voices. A major finding was that climate denialism was largely an Anglo-Saxon media preoccupation with a significant gulf between US and UK coverage on the one hand and that of continental Europe and emerging economies on the other. Eide and Kunelius' book, tellingly entitled 'Global Climate – Local Journalisms', involved researchers on five continents in a study of media coverage of the UN global climate summits in Bali (December 2007) and Copenhagen (December 2009). The study showed that three groupings of countries with broadly similar coverage could be discerned – mature economies of the 'Global North', emerging countries of the BRICS group, and poorer developing countries.

Our own study, as argued above, deliberately limited itself to a comparison between the press in three countries only, albeit very different countries, in a bid to achieve a deeper level of cross-country engagement between the research teams on each continent than might be possible with a broader sweep of countries. Eide and Kunelius' media analysis established that global issues of climate change policy tend to get translated into domestically relevant stories by national media. Our research therefore has devoted considerable attention to the different ways climate change was framed in national stories to connect with local experience and perceptions.

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<sup>2</sup>The international research focus was enriched by the diverse contributions to 'Climate Change and the Media' (edited by Boyce and Lewis, 2009) which included a framing study of Dutch and French newspapers by Dirikx and Gelders as well as country studies of Chinese, Australian and Swedish media. 'Global Warming through the Same Lens', Dirikx and Gelders' content analysis of *Le Monde*, *Figaro*, *De Volkskrant* and *NRC Handelsblad* newspapers, found very similar coverage in the two countries with similar framing of the consequences of global warming and of the solutions required. This consensus marked a sharp contrast between continental Europe and the US where press coverage of the climate issue was characterized by controversy and conflict. However, the research literature on sub-Saharan Africa - the continent which by most climate science projections is likely to be worst affected – remains thin and even thinner in terms of cross-national analyses. Hallin and Mancini (2004) argue in their seminal work 'Comparing Media Systems' that inter-country media system comparison "sensitizes us to variation and to similarity" which can be seen to be critical to discovering how people in different countries receive information on global issues. Nevertheless, on the issue of climate change, only a handful of innovative comparative studies have so far been attempted, notably Painter's six-country study of climate scepticism in the print media of Brazil, China, France, India, the UK and USA (Painter, 2011) and Eide and Kunelius' larger transnational survey of climate summit coverage in 19 countries around the world (Eide and Kunelius with Kumpu, 2010).

The study draws on conceptual ideas from frame analysis, going back to Goffman's work on interpretive schemas (e.g. Goffman, 1974). Following in the Goffman tradition, framing today -broadly speaking - refers to the social construction of a societal phenomenon often by mass media sources, political or social movements, or other actors and organizations where framing serves both to simplify and unify perceptions. Successful framing thus reduces the ambiguity for the incumbent community(ies) by contextualizing the information in a way the recipients can connect to what they already know. As expressed by Kuypers (2009), "Framing is a process whereby communicators, consciously or unconsciously, act to construct a point of view that encourages the facts of a given situation to be interpreted by others in a particular manner".

Yet, by the very same logic that framing creates unity *within* a community, organization or culture it may create divisions and contradictions *across* them. In an analysis of the climate debate Hoffman (2011) thus points out how the IPCC and climate change believers and the climate sceptics have developed contrarian "logics" that can be described as a logic schism. Hoffman shows how convinced and skeptical arguments employ widely divergent frame and issue categories to make arguments about climate change<sup>3</sup>.

The focus of this article relates directly to the issue of framing the climate challenge across community divides: to what extent, and how, framing and ensuing strategies to address the climate challenge can be shared across mature, developing and rapid growth economies that will need to act together to meet the common threat. Taking the press as a lens, the article explores to what extent the way the three nations frame the climate challenge in the national press, promote common understanding that support collective or at least compatible action towards climate solutions.

The justification for using the press as an entry to national viewpoints and understanding is twofold. Firstly, the press is conveniently available for systematic exploration on a comparative basis. Secondly, we concur with Goffman (1974) in assuming that the meaning of a frame – in our case expressed in the media - has implicit cultural roots. Following Goffman's example the context dependency of media frame has been described as 'cultural resonance' (Gamson and Modigliani, 1987) or 'narrative fidelity' (Snow and Benford, 1988) indicating the close anchoring of media-framing in national culture and society.

Admittedly, while nations and interest groups compete over framing the public agenda, the media not only have an agenda of their own (Boykoff and Boykoff, 2007; Gans, 1979) but tend to dramatize news (Bennett, 2002). The norm of balance compels journalists to present the views of legitimate spokespersons of the conflicting sides. However, while journalists actively shape stories and provide meaning to events, they must nevertheless pick up notions, images and norms from the societies they

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<sup>3</sup>Aware of the duality of coherence at one level and contradiction at another, Pralle (2011) points out how unitary and unconditionally supportive framing may be optimal as a strategy to promote buy-in from a community, while framing that is honest about the trade-offs may constitute a better basis for policy compromise across communities with divergent interests and characteristics. One could also imagine framing which is broad enough to encompass viewpoints that are digestible by all or most parties involved.

communicate to, in order to reach their audience. Press articles, therefore, reflect social values and trends that play into the nation's societal framing of important issues such as climate change. We may therefore speak of the press as "brokers" between social reality and public consciousness (Nelkin, 1989). It is this mutual shaping of public narratives that allows us to use media stories to shed light on the climate perspectives of both the press and the larger society it serves. The assumption is, in other words, that media frames finally gain influence because they resonate with popular culture. Of course, media are also influenced by such factors as organizational pressures, interest groups and elites, including government bureaucracies, and other political or corporate actors. However, as these factors are likely to shape national climate strategies, they are arguably a relevant basis for understanding the realities of national climate change positions on the ground.

According to Entman (2007, 1993, 2004) and Kruyepers (2009) fully developed frames typically perform four functions: problem definition, causal analysis, moral judgment, and remedy promotion. Framing, therefore, is not only a cognitive exercise, but also translates into premises for strategic action. Following Entman's four functions, this paper's general focus on the framing of climate change in China, Ghana and Norway translates into more specific queries such as:

- Does the press in the three countries indicate a common climate agenda? And if not, are the different country agendas compatible so that they could lead to parallel action?
- Does the media framing of the three countries/regions indicate similar understandings of the climate situation? And if diverse, are the explanations compatible?
- Is there a common agreement across the three nations' press on the blame for the climate crisis? And if not, are the different judgments reconcilable?
- Is there common agreement in the media on remedies? And if not, are the different remedies suggested compatible?

While the main emphasis of our study is on the agenda and on the understanding of climate change, the media review also covers viewpoints on climate-responsibility and climate action.

Our article also sheds light on conceptual issues in frame analysis. Of particular interest is our study's display of the dualism between the internal and external effects of framing. An important question for frame analysis thus becomes how to bridge or reconcile discrepancies between internal and external positions when facing a need for collective action. This leads to an analysis of framing-compatibility and an analysis of how meta-framing that may harmonise seemingly incompatible positions.

### **3. METHODOLOGY**

This study was carried out by in-country teams from the Norwegian Business School, the Sun Yat-Sen University School of Government and the University of Ghana School of Communications Studies, following common parameters. In each of the three countries researchers closely monitored coverage over a six-month period in 2010 of three leading newspapers – an elite paper, a more popular paper and a specialist business paper. The 2010 study was preceded by a pilot study in 2008 which used the same methodology for a similar six-month period.

Each research team made an initial search for articles covering climate change in relevant databases, using agreed translations of two search terms, “Climate Change” and “Global Warming”. As English is the official language in Ghana, translation was not required. The search for articles in the Norwegian press used the concepts *klimaendring* (climate change) and *global oppvarming* (global warming). For the Chinese press analysis, the two terms, “global warming” and “climate change”, were translated as *quanqiu biannuan* and *qihou bianhua* respectively.

Articles containing a mere passing reference to “Climate Change” or “Global Warming” on a theme unrelated to climate change issues were discarded from this pool. A sample of 100 articles per country containing these words was selected on a random basis for close content analysis<sup>4</sup>.

**Table 1** Number of relevant articles by country and newspaper in 2010 and 2008<sup>a</sup>

<b>Norway</b>	<b>2010</b>	<b>2008</b>
<i>Aftenposten</i>	107	110
<i>Dagbladet</i>	38	67
<i>Dagens</i>		
<i>Næringsliv</i>	30	64
<b>Total, Norway</b>	<b>175</b>	<b>241</b>
<b>China</b>	<b>2010</b>	<b>2008</b>
<i>People's Daily</i>	276	187
<i>Southern Daily</i>	33	18
<i>Economic Daily</i>	44	57
<b>Total, China</b>	<b>353</b>	<b>262</b>
<b>Ghana</b>	<b>2010</b>	<b>2008</b>
<i>Daily Graphic</i>	41	75
<i>Daily Guide</i>	16	41
<i>Business &amp; Financial Times</i>	18	19
<b>Total, Ghana</b>	<b>75</b>	<b>135</b>
<b>Total coverage</b>	<b>2010</b>	<b>2008</b>
<b>Total all three countries</b>	<b>603</b>	<b>638</b>

<sup>4</sup>A grand total of 603 relevant articles were identified in the three countries' selected newspapers over the January-June 2010 period, down from the 2008 total of 638 articles – see Table 1.

<sup>a</sup>There are marked differences between the countries in the amount of coverage devoted to climate change and also, to an extent, between the two years analysed. In the first six months of 2008 the Norwegian and Chinese newspapers surveyed had given a comparably large number of articles to the subject (241 and 262 respectively) with Ghana lagging behind (135 articles). For the same period in 2010 Norway's coverage had dropped markedly to 175 articles while China increased its coverage to 353 articles. This rise is very largely accounted for by the heightened profile of climate change in the official newspaper, People's Daily, but there was also an increase in the more populist Southern Daily (from 18 articles in 2008 to 33 in 2010).

Ghana's coverage in 2010, however, slumped to a total of 75 articles. In this Norway and Ghana seem to be part of the wider fall-off in climate change coverage observed in Western countries following the perceived near-fiasco of the Copenhagen conference at the end of 2009 and the 'Climategate' controversy around the same time. Certainly in both these countries the number of relevant articles in the popular newspapers fell from 67 in 2008 to 38 in 2010 in the case of the Norwegian *Dagbladet* and from 41 in 2008 to a mere 16 in Ghana's *Daily Guide*.

Drawing on their local knowledge of language, media and politics and their social science expertise, the research teams in Norway, China and Ghana carefully examined articles in their national press, sorting them into basic story types and scanning them for the different categories of their main sources. The articles were then grouped under more overarching story themes. Several inter-country workshops were held in Africa and Europe with participation of the three research teams to consolidate methodology and comparative analysis.

### **3.1 The Selection of Newspapers**

Although every effort was made to find comparable popular, business and elite newspapers in each of the countries under study, national variations in media systems between Norway, China and Ghana are pronounced, and these need to be taken into account. One instance is the huge disparity in rankings under Freedom House's 2013 Global Press Freedom Index: of the 197 countries assessed, Norway is found in the top three positions (coming third after Finland and the Netherlands) and Ghana in 30th position (ranked alongside the USA and the UK) while China comes in as 173rd in the category of "least free countries" i.e. countries which least respect media freedom<sup>5</sup>.

#### *3.1.1 Norwegian Press*

Norway with its universal literacy boasts a vibrant and diverse press. The press is financially stimulated by a state subsidy scheme for daily newspapers, however, this scheme is not allowed to infringe upon the independence and freedom of the press. *Aftenposten*, Norway's newspaper of record and the newspaper with the widest circulation, is privately-owned and has broad coverage of news, culture, public policy and business. It fits the category of elite newspapers for this study. *Dagbladet*, a leading, privately-owned tabloid which traditionally has been a moderate left-wing publication represents what we considered to be a popular newspaper. Finally, as its name implies, the privately-owned *Dagens Næringsliv* (Business Daily) is aimed at the business world and thus represents the category of specialised newspapers.

#### *3.1.2 Chinese Press*

In China, the Propaganda Department of the Chinese Communist Party (CCP) still closely supervises all media operations inside the country. Nevertheless, in the area of environmental policy and climate change issues in particular, Chinese journalists have considerable lee-way. The *People's Daily* is the official newspaper of the Chinese Communist Party (CCP) and the central government. It is the party's news media of choice for policy announcements and official statements and therefore the obvious candidate for the elite newspaper category of this project.

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<sup>5</sup>There are other special local factors at play: the elite newspaper selected for this study, the *Daily Graphic*, is state-owned. It has plenty of resources, and although it is Ghana's newspaper of record and reflects officialdom closely, it also enjoys the widest circulation of any Ghanaian paper. The paper with the second highest circulation, the *Daily Guide*, is a privately-owned tabloid with a penchant for covering the underbelly of politics. It was selected as a newspaper representing popular attitudes rather than those of the elite. *Business and Financial Times*, as its name implies, represents a specialized newspaper aimed at the business world. It is privately-owned and is published three times a week.

The choice of popular newspaper was more problematic as there are several candidates. Our original choice was for the Southern Metropolitan News which, although a regionally based paper, had acquired something of a national reputation for more innovative and populist reporting. However, it was not part of the national newspaper database, making it impossible for our keyword search-based methodology to work. So its sister paper, The Southern Daily, was selected instead. It operates under the directives of the Propaganda Department of the CCP's Guangdong Provincial Committee.

The choice of a business newspaper was more straightforward. The Economic Daily was founded twenty years ago in 1983, at the very beginning of the reform era, by the State Council of the Chinese government. It is an important channel through which the CCP and the government announce their economic policies.

### 3.1.3 Ghanaian Press

In Ghana the media industry has been expanding rapidly with new newspaper titles and radio stations being set up. In a country with relatively low literacy rates radio has become the most widespread and powerful medium but newspapers are drawn on extensively by radio journalists and producers for their news bulletins and current affairs shows, as well as being widely read by the political elite.

## 4. FRAMING THE CLIMATE CHALLENGE IN NORWAY, CHINA AND GHANA

### 4.1 Norwegian Framing

The Norwegian debate can be summarized under four major and four minor themes, as indicated in table 2.

Table 2 Norwegian Story Themes<sup>6</sup>

Norwegian papers 2010	
Debate over Norway's climate orientation	major
Global climate negotiations and the north-south divide	major
"Climategate" and the contrarian debate	major
The science behind the story (scientific explanation of the climate challenge)	major
Geo-politics and increasing focus on the BRICS	minor
The melting arctic	minor
Lifestyle issues and cultural expressions	minor
Challenging business	minor

<sup>6</sup>It is difficult to quantify the weight of each theme precisely. In this table for Norwegian papers, and the following for Chinese and Ghanaian, we have therefore sorted them into "major" or "minor" themes representing, respectively, roughly 15% and over or less than 10% of the selected articles. The classification is based on evaluation by the national research teams, based on common guidelines. No systematic weighting was done for the 2008 articles.

The newspaper stories highlight two main trends in Norway's climate orientation:

The first is the Norwegian propensity to leave untouched the growing domestic petro-economy and petro-wealth. The other is the trend to engage with the South and relegate climate policy to international markets. Both trends figure as prominent interpretative counterpoints in the 2010 as well as the 2008 press review.

Illustrative of the first trend is the opinion piece "Norway is not showing the way" (Aftenposten, June 5, 2010) where Aftenposten's political editor Ole Mathismoen states that :

"Norway is not an environment nation. Norway is an oil nation. Money is more important than climate and the environment(...) Norway has definitively been the best on words. The first to acknowledge different environmental threats, from acid rain to climate change. The first to promise sensationally large emission cuts of both NO<sub>x</sub> and CO<sub>2</sub>, and the first to demand that others must do the same. But we are not cutting our own emissions. We are increasing them without even blinking".

Against this background, the engagement with the South takes on a combined moral and pragmatic meaning. Many stories were framed in an ethical perspective and highlight the North's responsibilities towards developing countries, both in terms of technology transfer and moral obligations.

Yet many of the engagements with the South are also depicted in pragmatic and even cynical terms, namely as having the effect of taking the heat off continued high CO<sub>2</sub> emissions to facilitate petroleum growth and the continuation of a CO<sub>2</sub>-lavish lifestyle. Forest conservation in South America has been one of the then Prime Minister Jens Stoltenberg's main initiatives for helping mitigate carbon emissions and climate change, and the press reports on government officials travelling across the world to look for CO<sub>2</sub> offset opportunities across the developing world ("Slaughters the Norwegian climate comrades", Dagbladet, June 22, 2010).

In 2010 Norwegian press stories continued to focus on the contrarian debate as they did in 2008, thereby framing the climate challenge as inherently uncertain. The "Climategate" controversy gave climate sceptics new "evidence" for disclaiming the urgency and gravity of climate change in the Norwegian media. Siv Jensen, leader of the right-wing Progress Party, openly attacked the Intergovernmental Panel on Climate Change (IPCC) in the Aftenposten article "No more talk about global warming" (January 31, 2010). She claimed that: "We must not impose drastic measures when it appears that the foundation of the (IPCC) report is not correct". Climate sceptics also fed on the fact that very cold winter weather of 2009/2010 seemingly caused a lot of Norwegians to doubt the "warming" part of climate change. This again stimulated a broad set of environmental NGOs and agencies, such as Greenpeace and the Climate and Pollution Agency (KLIF), to engage in defending the IPCC position, as described in an article with a rather misleading title "The end of global warming", (Dagbladet, January 21, 2010).

Yet in spite of the prominence of heated contrarianism, several articles in the Norwegian media sought to frame the climate challenge in scientific terms by focusing on the facts and science behind the climate issue. They endeavoured to explain, in a simpler language than that used in textbooks and scientific reports, the physical causes

and effects of climatic changes. Examples include the ice melt processes in the Himalayas and the polar areas, the links between greenhouse gas emissions and global warming, or how volcanic eruptions can influence the climate.

Several articles in the Norwegian press made sense of the climate challenge in a geo-political discourse: while the development of climate policies in the United States and other Western countries was far from ignored by Norwegian press, they seemed to be giving increased attention to the fast-developing block of economic giants dubbed the BRICS; Brazil, Russia, India, China and South Africa. The spotlight was particularly on China in 2010. As the largest carbon emitter and with a growing middleclass increasing consumption, China is on the one hand seen as a barrier to solving the global climate crisis. On the other hand, China is also depicted as holding a crucial part of the solution. According to the article “Greener Chinaenergy” (Aftenposten, March 23, 2010), the country is now at the top of the list of countries investing in renewable energy, overtaking the US for the first time as the largest investor.

The geo-political perspective on the climate challenge is particularly salient with respect to the melting Arctic, where the Norwegian press has maintained an interest both in 2008 and 2010. As described in the article “Russian-Chinese power struggle over sea route in the Arctic” (Aftenposten March 4, 2010), climate change is leading to ice-free passages in the Arctic, and China and Russia are already at odds over who will have the right to pass.

The framing of the climate challenge as a moral issue, with responsibility for taking personal and national action, comes clearly through in Aftenposten’s special debate pages “Si;D”. In these pages Aftenposten has given a voice to young people on the climate issue and 30% of Aftenposten’s opinion pieces were written by young people there. These articles reflect almost a universal belief in the gravity of the climate issue and the importance of making radical changes in lifestyle. Two pieces clearly challenged official Norwegian policy. In the opinion piece “We need an energy revolution” (Aftenposten, June 3, 2010) the young author clearly challenges business by stating that drilling for oil is passé and that Norway should transform its energy sector instead of searching for more oil. Young people also advocate environmental and climate measures at the individual and local level in Norway, which is to some extent in contrast with PM Stoltenberg’s “do it abroad” policy. Many of them urge their peers to take individual action since adults are not taking it seriously enough.

#### **4.2 Chinese Framing**

The Chinese debate can be summarized under three major and four minor themes, as indicated in table 3.

The Chinese discourse on the climate challenge was very much framed as a managerial issue, to be efficiently handled by the party elite. Chinese press coverage on climate change in 2010 is dominated by government and official sources, as was the case in 2008. This is most evident in the People’s Daily. Among the 34 articles randomly selected, 28 were from government and official sources or about government or official activities. Among them, several articles were stories about government officials meeting with foreign visitors or on foreign trips, attending

**Table 3 Chinese Story Themes**

<b>Chinese Papers 2010</b>	
Global Warming and Climate Change in International Relations	major
Green Industry and Low – Carbon Economy	major
Natural Disasters and Extreme Weather	major
Energy Conservation and Emission Reduction	minor
Climate Change and Weather Forecast	minor
Scepticism to Global Warming	minor
Climate Taxation	minor

international meetings (“The second official meeting of the leaders of BRIC countries held in Brasilia”, *People’s Daily*, April 15, 2010). Most of these articles had the same single reference to global warming or climate change, usually mentioned among a range of other issues. Articles in the *Southern Daily* were similar except that the *People’s Daily* stories were about national leaders and the *Southern Daily* stories were usually about provincial leaders receiving international guests (“Korean President Lee might attend the cooperation forum in Guangdong”, *Southern Daily*, February 3, 2010). Given that there were many other bilateral or multilateral issues to be covered on these occasions, that global warming and climate change made the cut and entered the “top ten list” during such bilateral talks or international events indicates the importance the Chinese government attaches to the climate challenge. One way of characterizing this would be to say that the Chinese government is obviously “talking the talk” on the international stage.

As in 2008, the Chinese press in 2010 continued to report on government policies on the basis of government and official sources. Many articles confidently described the government’s policy achievements in energy conservation, pollution control and carbon emission reduction. Other articles described the policy challenges facing the central as well as local governments in terms of economic, energy, and environmental issues (“Guangdong shoulders its responsibilities with courage in the development of green economy”, *Southern Daily*, April 9, 2010).

As the period of the 2010 press analysis followed hard on the heels of the 2009 Copenhagen summit, the newspapers featured several articles reporting on and analysing international climate negotiations and China’s role and positions. One might here speak of a discourse on the geopolitics of climate responsibility. Most of these articles presented the international events in a rather matter-of-fact fashion (“According to the Copenhagen Accord, some countries report emission reduction promises to the UN”, *People’s Daily*, February 2, 2010). However, some articles dealt directly with the failure to achieve a binding agreement in Copenhagen and the West’s blame of China for the failure. In this regard China was often described as a responsible player in the international climate negotiations. For example an article in the *People’s Daily* on January 2, 2010 quoted an article on the *Guardian* website extensively, which argued that it was Denmark’s fault because the Danish prime minister decided to hold talks among the 26 large countries in the last two days of the

Copenhagen meeting instead of involving all the 193 countries (“The Guardian in the UK says Copenhagen Meeting failed because of Denmark not China”, *People’s Daily*, January 2, 2010).

A discourse on climate taxation and trade featured as a sub-theme under climate responsibility. An article reported on a story that many businesses in China were concerned that the EU and the US were considering imposing a carbon tax on Chinese products. It cited several experts as saying the best reactive strategy for Chinese industries is to try to upgrade their technologies and become leaders in the new low-carbon economy, and arguing that the Chinese government should impose its own carbon tax (“EU might impose carbon tax and Chinese manufacturers face the biggest threat”, *Southern Daily*, January 15, 2010).

Extreme weather and natural disasters, especially the severe drought that affected a large part of China in 2010, were another major discursive theme. Most of these articles referred to global warming as one possible cause for such extreme weather conditions (“It’s almost May, why is it still cold? Temperatures in the North and Northeast have been lower than usual for almost half a year”, *People’s Daily*, April 28, 2010). The natural disaster theme was also strongly present in the 2008 pilot press review.

Numerous articles in the Chinese media framed the climate challenge in terms of eco-efficiency and green growth, an interpretation that gained considerable momentum from 2008 to 2010. Compared with the 2008 articles, *di tan* (??) (low-carbon), *lu se* (??) (green), and *qihou youhao* (????) (climate friendly) seem to have become very popular buzz words in the Chinese media in 2010. This was particularly the case with the *Economic Daily* and the *Southern Daily*, which each had more than half their articles (18 articles out of 33) about the low-carbon economy, green or climate-friendly technology, or climate-friendly development models.

The *Economic Daily* carried several stories on the achievements by Chinese government and industry in reducing carbon emissions and improving energy efficiency. One article at the beginning of 2010, for example, reported that in 2009 Chinese industry had reduced per unit GDP energy consumption by 9%. The article asserted that industry had to do more and faced even tougher energy efficiency challenges because the central government had committed that China would reduce its carbon emission by 40-45% over the 2005 level by 2020 to fight climate change (“Energy consumption per 10,000 Yuan of industrial production is predicted to be lower by about 9% in 2009”, *Economic Daily*, January 14, 2010).

There is a similar pattern in the *Southern Daily* articles. For example, one report referred to a meeting convened by the Guangdong provincial government at which several invited experts gave advice to the Guangdong government on how to upgrade its manufacturing-oriented industries to more high-end industries, and how to move from the traditional industry model to low-carbon industry models. One expert argued that Guangzhou should try to become the leader of low-carbon economy in China (“Comprehensive reform for the goal of a low-carbon economy”, *Southern Daily*, January 7, 2010).

Although far less prominent than in Norway, China does not completely escape the climate scepticism discourse. A couple of articles in the 2010 sample questioned the

global warming thesis. One article reported on a scientist from Beijing University who was openly sceptical of the connections between human activities and global warming (“Human activities influence global warming need further research according to Beijing University meteorology professor Qian Weihong”, *People’s Daily*, February 10, 2010). Another article featured an interview with the lead weather forecaster at the Central Meteorology Station on the question of how a severe winter storm can be reconciled with global warming (“Snow storm, cold weather and global climate warming: interview with the lead weather forecaster Zong Zhiping of the Central Meteorology Station”, *Economic Daily*, January 12, 2010). The 2008 pilot press review did not contain any climate scepticism at all.

Overall, the articles portrayed China, particularly the Chinese government, as an active climate-player. China has participated actively in the global efforts at climate mitigation. Government was depicted as seeing climate change as both a challenge and an opportunity for China and Chinese industry. With very few exceptions most articles assumed that the connection between CO2 emissions and climate change was an established scientific fact. The emphases were almost always on two issues: firstly what China and Chinese industry needed to do to be better prepared for the future uncertainties caused by global warming and secondly, seizing the opportunities to become the leader in the low-carbon economy of the future.

### 4.3 Ghanaian Framing

The Ghanaian debate can be summarized under three major and three minor themes, as indicated in table 4.

**Table 4 Ghanaian Story Themes**

<b>Ghanaian papers 2010</b>	
Climate effects as a threat to Ghana’s agro-forestry economy	major
Flooding, food security and disaster management	major
From climate victimhood to climate as development agenda	major
Critique of global climate agenda	minor
Climate and poverty	minor
Climate and Ghana’s emerging petroleum sector	minor

A core focus of the Ghanaian press stories was on local effects of climate change and the threat they pose for Ghana’s agro-forestry based economy. The *Daily Graphic* (May 22, 2010), for example, published a feature, accompanied by a photo of a truck-load of timber, which discussed activities in the Volta Region that cause desertification. The article appeared to have been triggered by an earlier report carried in the newspaper (May 12, 2010) in which the Volta Regional Minister complained about deforestation due to bad farming practices.

As in 2008, the articles in 2010 continued to make sense of flooding and food insecurity as effects of climate change, and climate change understandings in newspapers were largely expressed in terms of changes in Ghanaian weather and seasons rather than other, more global, factors. However, articles in 2010 painted a significantly different picture of Ghana as an active participant in climate change discussions than articles from 2008. While there were several articles on international policies, as was the case in 2008, in 2010 there were other articles which informed readers on the Ghanaian government's positions, policies and plans to address climate change.

This new, more active, climate engagement on the part of the Ghanaian government was mirrored in a discourse that links climate to development. For example, the press reported on a meeting of ministers from the Economic Commission for West Africa (ECOWAS) on climate change at which a Ghanaian minister advocated urgent action on climate change because it was impacting negatively on the country's economy and an impediment to the achievements of the Millennium Development Goals (Daily Graphic, March 19, 2010). Climate policy engagement was thus framed as part of the country's aspirations of achieving middle income status by 2020. The news stories to this effect were also corroborated by national climate policy which had recently been framed in the context of a larger developmental agenda under the "National Action Programme to Mainstream Climate Change into Ghana's Development" (Ghana Goes for Green Growth, 2010).

One of the striking features of Ghanaian press stories when comparing the 2010 to the 2008 sample was the discursive shift from climate victimhood towards a more active domestic climate management role. The victim narrative found in 2008 was exemplified by articles which lamented the fact that Africa bore little responsibility for climate change but suffered most from its consequences. A story found in the Daily Guide in 2008 reported the UN Secretary-General, Ban Ki-Moon, as blaming the devastating effects of climate change on the actions of developed nations. Mr. Ban Ki-Moon was quoted as arguing that, since Africa contributed so little to climate change, it should not be expected to bear the burden (Daily Guide, April 23, 2008). By contrast, the tone of 2010 articles suggested a willingness of Ghanaians to take responsibility for climate change and expressed commitment from policymakers to address the problem with more urgency. For example, Ghana's Interior Minister was reported to have urged ECOWAS countries to emulate the example of Ghana where a platform for disaster risk and climate change adaptation had been established, as part of climate measures (Daily Graphic, June 15, 2010).

Following Copenhagen, Ghanaian press stories became more critical of the global climate agenda and more focused on what Ghanaian could do themselves. A Daily Graphic article (January 30, 2010) titled "The Palaver in Copenhagen" pointed out that since the summit fell short of expectations, civil society had to take a lead in raising awareness. Besides more government involvement on climate change, press articles framed the climate challenge in terms of the need for civic engagement and change of local practices. Several stories, like one titled "Bushfires and Climate Change" (Daily Graphic, January 27, 2010) and another with the headline, "Who protects our environment?" (Daily Graphic, March 29, 2010) identified such local causes of

environmental degradation as bushfires, tree felling, mining activities, use of chemicals on the soil, cattle grazing, and linked such activities to climate change and therefore to the need for local initiative to tackle the problem. The press also brought in the voice of traditional chiefs, who were seen on the one hand as custodians of ecological balance (Daily Graphic, June 14, 2010), but on the other hand also seen as uncooperative in the fight against climate change because of their reluctance to release land for tree planting (Daily Graphic, June 19, 2010).

At the same time there was also a recognition in the Ghanaian press of the vicious interplay between poverty and the climate as an important discursive background. Some stories argued that climate change not only altered growing conditions for small-scale farmers, but also exacerbated competition for finite natural resources (Daily Guide, February 15, 2010). Such articles saw poverty as a causal factor because it leads people to engage in activities detrimental to the environment by overloading the eco-system. However, other stories took the position that climate change aggravated poverty, such as one published by the Business and Financial Times (March 10, 2010), and therefore that without action on climate change Africa could plunge into greater crises. Another article toying a similar line appeared in the Daily Graphic (March 22, 2010) about how climate change would aggravate the plight of many people who already have poor access to water.

Finally, the media stories also started framing the climate challenge in Ghana in the context of the country's emerging oil and gas economy, an indication of how Ghana is at a transition point on the issue of climate change. The country has recently discovered oil and gas and is becoming a net emitter of greenhouse gases and thus there were press articles reminding Ghana to 'green' its oil operations. One article explained that the government had asked the Environmental Protection Agency (EPA) to assess the entire oil production processes for adverse effects on environment and advise on mitigation (Daily Graphic, March 16, 2010). Another warned that operations in the new oil industry could pose a threat to marine life (Daily Guide, May 28, 2010).

## **5. SOURCES AND STORY TYPES**

Admittedly the press articles on climate change in China, Ghana, and Norway were clearly based on disparate sources and shaped by different story types, indicating that the press plays different dramaturgical roles in the three countries.

The role of politicians and public officials as story sources (table 5) was very dominant in the Chinese media surveyed (76%) and would seem to indicate an understanding of climate change as a managerial issue to be efficiently handled by the party elite. The dominance of government in sources in Chinese press articles might, however, also imply basic political support, and a promise that eco-efficiency and green growth will be backed by serious political implementation.

The unusually heavy use made of international actors as sources in Ghana could be interpreted as an over-reliance on foreign information in a country still fairly early in economic development. The fact that nearly 50% of climate change stories in 2008, came from international organisations reflects that climate change had still limited national support. Yet the sourcing of Ghanaian climate articles changed. In 2010, the international sources were reduced to 28%, while the number of local Ghanaian

officials and politicians used as sources had increased markedly from 19% to 28%. The number of business and civil society sources used for information had also increased, creating a more healthy diversity in the sourcing of press articles on climate issues in Ghana.

Of the three countries, Norway had the greatest diversity in the sourcing of newspaper stories. The Norwegian press drew substantially on civil society organisations and reflected the views of ordinary citizens in 2008 – and this again was the pattern in 2010. Scientists and academics are now the source category most used by Norwegian journalists. Indeed the number of articles drawing on academic and scientific information increased from 31% in 2008 to 44% in 2010. While this increase may be in part a function of the public debate around the ‘Climategate’ affair, it also supports the critical diversity of views in the Norwegian public debate.

**Table 5: Use of sources by country in 2010 and 2008 for all three papers in total (weighted totals)<sup>7</sup>**

<b>Norway</b>	<b>2010</b>	<b>2008</b>
<i>Politicians/Public officials</i>	13 %	25 %
<i>Scientific/Academic community</i>	44 %	31 %
<i>Business/Company</i>	3 %	10 %
<i>International actor</i>	12 %	10 %
<i>Local NGO/Civil society</i>	14 %	16 %
<i>Ordinary individual</i>	14 %	8 %
<b>Total</b>	<b>100 %</b>	<b>100 %</b>
<b>China</b>	<b>2010</b>	<b>2008</b>
<i>Politicians/Public officials</i>	76 %	65 %
<i>Scientific/Academic community</i>	9 %	10 %
<i>Business/Company</i>	7 %	18 %
<i>International actor</i>	8 %	4 %
<i>Local NGO/Civil society</i>	0 %	1 %
<i>Ordinary individual</i>	1 %	2 %
<b>Total</b>	<b>≈ 100 %</b>	<b>100 %</b>
<b>Ghana</b>	<b>2010</b>	<b>2008</b>
<i>Politicians/Public officials</i>	28 %	19 %
<i>Scientific/Academic community</i>	13 %	16 %
<i>Business/Company</i>	9 %	2 %
<i>International actor</i>	28 %	54 %
<i>Local NGO/Civil society</i>	17 %	9 %
<i>Ordinary individual</i>	4 %	0 %
<b>Total</b>	<b>≈ 100 %</b>	<b>100 %</b>

<sup>7</sup>Table 1 counts the number of articles in each category in the sample as a whole, weighted according to the relative share of each paper in the coverage of the climate issue.

On one front, however, there was a depressing conformity: in none of the countries studied did the business sector represent even 10% of the sources used for climate change stories and indeed in both Norway and China the proportion actually dropped between 2008 and 2010 – from 10% to 3% in the case of the Norwegian press and from 18% to 7% in the case of the Chinese media.

The three countries also differ extensively with respect to the type of media engagement, ranging from routinized production (essentially a re-hash of press releases) to an active enterprising engagement (where the journalist originate or actively shape the material). Active journalism also includes commentary: editorials (representing the views of the newspapers) and opinion (representing a range of perspectives).

The comparative analysis shows differences particularly between Ghana and China where the large majority of articles are routinised, and Norway with a much larger share of opinion pieces and articles reflecting enterprising journalism enterprise (table 6).

**Table 6: Story types by country in 2010 and 2008 for all three newspapers (weighted totals)<sup>8</sup>**

<b>Norway</b>	<b>2010</b>	<b>2008</b>
<i>Routinised</i>	31 %	34 %
<i>Enterprise</i>	25 %	23 %
<i>Editorial</i>	3 %	5 %
<i>Opinion</i>	42 %	38 %
<b>Total</b>	≈100%	≈100%
<b>China</b>	<b>2010</b>	<b>2008</b>
<i>Routinised</i>	68 %	73 %
<i>Enterprise</i>	8 %	5 %
<i>Editorial</i>	2 %	5 %
<i>Opinion</i>	22 %	16 %
<b>Total</b>	100 %	100 %
<b>Ghana</b>	<b>2010</b>	<b>2008</b>
<i>Routinised</i>	63 %	79 %
<i>Enterprise</i>	23 %	13 %
<i>Editorial</i>	1 %	3 %
<i>Opinion</i>	15 %	6 %
<b>Total</b>	≈100%	≈100%

<sup>8</sup>Table 3 counts the number of articles in each category in the sample as a whole, weighted according to the relative share of each paper in the coverage of the climate issue

A very large percentage (68%) of Chinese stories were essentially based on official releases and only 8% were articles written by journalists working up their own stories or developing new angles on existing stories. This reflects the predominantly government-led, pragmatic Chinese managerial approach to climate change. Ghana's newspapers too have a high level of routinised stories – particularly in 2008. The difference, however, is that while the Chinese press routinely communicated party press releases and cover official speeches and statements, the Ghanaian press was conveying information generated by international organizations.

The Norwegian press featured the highest level of enterprising stories in our sample and it would seem that only in Norway did significant numbers of journalists take reporting initiatives which unearthed other angles on climate change issues than those of government and other official institutions. Norwegian newspapers also published by far the highest level of opinion stories in the sample, 42% of all their climate change pieces as compared to 22% of Chinese stories and 15% of Ghanaian.

Despite these differences in sources and story types, we argue – with Goffman and Gamson and Modigliani (1987) – that the media framing is somehow contextually anchored, and thus resonates with national culture and sentiment. In addition, the picture is changing, and a trend towards more active media reporting could be seen in Norway but also in Ghana and even to an extent in China where, although a majority of relevant articles were still largely rehashes of official information, the number of stories reflecting journalistic initiative showed an encouraging rise between 2008 and 2010. This increase in enterprise stories in China and Ghana appears to indicate deeper journalistic involvement in the climate change issue and may signal a wider societal capacity to engage and act.

## **6. DISCUSSION AND CONCLUSIONS**

Summing up in terms of Entman's four functions of framing (*viz.* agenda setting, causal analysis, moral responsibility and remedy promotion), our study finds that, with respect to agenda-setting and problem-definition, climate change agenda is clearly shaped to different levels of economic development, indicating the importance of context in cognitive framing. For instance, agro-industrial issues are strongly voiced in the press of developing Ghana, where this sector still plays a dominant role in the economy. Resource constraints and local environmental pollution are prominently featured in Chinese press articles, where rapid growth is challenging the national resource base and creating extensive pollution. As a rich, mature economy Norway comes across in press articles as more willing to relate to abstract and long-term global climate concerns.

With respect to causal framing, the press review reveals how climate exposure and natural conditions cause different concerns to be voiced. Both the Chinese and Ghanaian press are paying considerable attention to climate-related natural catastrophes. The Norwegian press has far less on this issue, presumably because of Norway's lower exposure, and media coverage there concentrates more on international matters.

With respect to the framing of responsibility and remedies, the focus on the international dimensions of climate change and the engagement in international

climate mitigation in the Norwegian press reflects the dilemmas of a mature Western petro-economy with limited scope for domestic improvement, given its hydro-based electricity. The increasing emissions from oil and gas extraction give the country a need for access to international emissions trade, to compensate for CO<sub>2</sub> emissions at home. The internationally oriented framing of the climate challenge in the Norwegian press plays well to this, with a host of internationally oriented “green development mechanisms” – organised to ease the climate burden on western economies in return for transfers to developing countries. Besides accommodating petro-expansion, this also fits in well with Norway’s high ambition in development aid. Along with other Scandinavian countries, Norway tops the list of donors of development aid as a share of gross national income.

The Chinese press, on the other hand, reflects a resource-constrained growth agenda, where climate concerns are focused on resource efficiency and local pollution abatement. Chinese stories, when comparing the 2008 and 2010 reviews, illustrate the country’s changing position, following its extensive growth. Having overtaken the US to become the world’s largest CO<sub>2</sub> emitter, it has taken on board more extensive climate rhetoric around its resource efficiency strategies. It can at the same time still fall back on a rather moderate per capita CO<sub>2</sub> emission, which legitimates its claim to a different climate-responsibility than the affluent West.

Comparing the 2008 and 2010 press reviews clearly reveals Ghana in transition with respect to responsibility and remedies. Our 2008 pilot study uncovered Ghana framing itself in a climate victim role, passively awaiting international transfers and solutions. The 2010 framing shows Ghana moving out of a climate victim role towards an adaptation strategy, where the inhabitants and the authorities engage to link adaptation to climate challenge to economic development. There is an awareness of the country’s vulnerability, given the vital role of its agro-industrial sector, but also an awareness that solutions must be found in local adaptation, preferably through green growth. However, the 2010 review also conveys an emerging focus on the coming petroleum economy that may put the country in a similar dilemma to that of Norway.

While many differences may be attributed to disparity in resource endowments and economic development, other differences may be attributed to differences in political culture and media.

Differences in political culture indicate how cognitive sense-making must be understood in its political context. A strong NGO voice is expressed in the critical debate around government policy in Norway, while the dominant party voice attracts less critique in the Chinese press. As Ghanaian climate policy is only recently evolving, the Ghanaian press is more supportive than critical of government policy.

The findings of this study also warrant a critical look at sourcing and journalistic engagement. The large share of government sources in China and international institutional sources in Ghana clearly slants the media presentation of climate change in an “official” direction. While change was evident in Ghana from 2008 to 2010, the Chinese government dominance still remains.

The survey of newspaper sources has found that the business sector, in Norway in particular, is not seen by newspaper journalists as providing a major source of newsworthy information on climate change. The strong reliance on routine stories in

China and Ghana indicate that there is room for considerable improvement in active journalistic engagement. A larger share of enterprising journalism is probably important for connecting and amplifying active citizen engagement on climate change.

On the basis of the framing revealed in the media analysis, there seems to be little common ground for engaging in climate mitigation primarily through carbon pricing/taxation. This framing remains a mature Western or, even more narrowly, a North-West European approach.

In China the press frames the climate agenda much more in terms of resource efficiency and strategies to deal with local pollution. In Ghana the press displays a climate agenda more clearly aligned with strategies for economic development. So if talk of a schism is not considered appropriate, it must at least be acknowledged that these worlds are fairly wide apart.

However, in a more pluralistic framing, there is more scope for – if not alignment - then at least parallel paths. By adding a flexible green growth strategy to the emission trading approach, there would seem to be more chance of success. A green growth strategy seems more likely to succeed, in so far as it can more easily be aligned with the framing of the climate challenge in China and Ghana, reflecting the aspiration of rapid growth economies, as well as developing economies<sup>7</sup>.

The press reviews reveal that the debates across rich, rapid growth and developing countries signal potential acceptance for such scenarios. The reframing of the response to the climate challenge from victimhood to development and sustainable growth in Ghana gives reason for hope. The bold tone exposed in the Chinese articles builds up expectations for strong environmental action which the Communist Party can hardly afford to neglect. Norway remains more ambivalent, with one storyline promoting climate engagement abroad to safeguard domestic carbon consumption, while another critical storyline promotes radical domestic climate action. Nevertheless, the Norwegian “engagement abroad” approach potentially matches the Ghanaian victimhood story - a complementarity which may potentially be exploited to find common solutions. While the existing “clean development mechanisms” are clearly set on this track, the media analysis indicates that such approaches may have a larger potential than what has been currently exploited.

Given the massive consequences of climate policy for major sectors of the economy, such as energy and transport, a shift from “climate-austerity” towards “green growth” would clearly boost the chances for climate policy success.

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