From an Agenda to the Other: Environmental Issues Dynamics in Quebec[1]

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The salience of environmental issues has continuously and constantly increased in western democracies from the 1970s onward. Whether one focuses on the media, public opinion, advocacy groups or decision-makers, environmental studies are a blooming field for policy analysts.

Many political scientists have attempted to explain the dynamics of influence among the media, policy and public agendas with regard to environmental issues. While we acknowledge seminal works by Michael Howlett and Stuart Soroka in Canada, we contend that a specific focus on the agenda-setting stage with regard to environmental issues is still lacking.

Compared to previous studies dealing with this topic, we locate our field of inquiry at the provincial level, we use a fifteen-year time-span and we break down environment as an issue into various sub-problems (for instance: climate change, ozone-depletion substances, waste management, acid rain, and so on).

Since we primarily aim at testing the media-driven hypothesis drawn from the literature, we analyze environmental policy in Quebec since the 1990s. Therefore, we rely on a computer-assisted frequencies analysis of newspaper articles (editorials and news stories) and proceedings of environment-related committees of the *National Assembly of Québec*. Time series are then constructed and analyzed. This suggests causal patterns that account for the dynamics of influence among the agendas. We discuss our results in the concluding section.

Review of the agenda-setting literature

Agenda-setting as a stage in the public policy process

The public policy approach identifies each of the three phases of public action from its genesis, through policy-making, and to finally the impacts on the adopted policies (Muller, 2004: 87-88). Translated into the vocabulary of systemic analysis, the three consecutive stages are: the requests/supports addressed to the political system (inputs), the activities of the political system itself (the "Black box"), and its responses/effects (outputs). In the stage-approach to the policy cycle, introduced by Charles O. Jones in 1970, the agenda-setting phase refers to the first sequence of the process, where requests are formulated toward the political system.

Many modelizations of this sequence have been proposed since seminal works by Roger W. Cobb and Charles D. Elder in the United States (Cobb and Elder, 1972). In a well-known article, Cobb, Ross and Ross distinguish between two types of agenda: the "public" agenda, and the "formal" agenda. The public agenda contains various societal issues. The formal agenda contains only issues that are recognized by the decision-makers (Cobb, Ross and Ross, 1976: 126-27).

These authors also distinguish three types of relations between the two agendas. The first relation is known as the "outside initiative model" and refers to a process in which an issue that arises in extra-governmental groups is then expanded to reach first the public agenda, and secondly the formal agenda. The second configuration is the "mobilization model" in which an issue is initiated inside governmental circles and easily reaches the formal

agenda though it requires for its implementation, to be placed on a public agenda as well. The last model is the "inside initiative model" in which issues arise within the governmental sphere but does not need to be expanded to the public agenda (Cobb, Ross and Ross, 1976: 127-28).

Cobb and al.'s model is thus the first to link these agendas. From these authors' works a huge body of literature on inter-agenda relations has been built, particularly in the United States. Canadian researchers have imported and tested these models with regard to Canadian politics. One such instance is that of Michael Howlett (1997; 1998) testing for the relevance of Anthony Downs, John W. Kingdon and Frank Baumgartner and Bryan Jones models to agenda-setting in Canadian politics.

Indeed, Howlett (1997: 13) seeks to measure which of the public agenda or the government agenda leads the overall dynamics. Furthermore, he seeks to account for the degree of predictability of the agenda-setting process at the federal level by distinguishing between deterministic and random phenomena (Howlett, 1997: 24). Howlett's results clearly suggest that neither Downs' assumptions (which predict that issues first arise in the public agenda and are then expanded to the governmental agenda) nor Baumgartner and Jones' (which stress the random feature of most agenda-setting processes) are supported by Canadian data (Howlett, 1997: 25-28). Nevertheless, Howlett empirically confirms the validity of Kingdon's model in Canadian federal politics. Led by his results, he concludes that there is a link between the institutionalization level of opportunity windows and the predictability of these windows (Howlett, 1998: 515).

After recognizing the importance and the seminal character of Michael Howlett's works on agenda-setting in Canada, Stuart Soroka raises several criticisms. The most important one is the lack of a clear distinction between the "public agenda" and the "media agenda" (Soroka, 1999: 765). He then proposes a model of agenda-setting in Canada of his own which considers various kinds of relation among three agendas: the media, public (public opinion), and government agendas (Soroka, 2002: 11-13). This author considers that research on agenda-setting is the study of issue salience (that is the relative importance of an issue on an actor's agenda) (Soroka, 2002: 5). From his point of view, the main question is to link various public policy actors' agendas. Consequently, the dynamics of inter-agenda relations becomes the dependent variable.

Soroka exhaustively reviews the agenda-setting literature and empirically considers three dynamics among the media, public (opinion), and government agendas, according to the different issues' attributes. According to Soroka (2002: 20-22), one can easily predict the inter-agenda dynamics by observing issues' attributes. The first dynamic relation proposed by Soroka is that of a "prominent issue". This kind of issue is concrete and has a directly observable impact on a significant part of the population. In this case, "real world factors", defined by Soroka as objective physical conditions related to a particular issue, affect each of the three agendas.

The second dynamic relation among the agendas concerns "sensational" issues. This kind of issue is concrete but do not affect a large part of the population. In this dynamics, the issue initially arises on the media agenda, and then moves onto the two remaining agendas. The last dynamic relation stems from "governmental issues". It is characterized by the driving role of the government's agenda. Generally, governmental issues do not affect individuals in a

clearly observable way. These issues can be concrete or abstract, yet they seldom reach the media agenda.

Soroka's model is aimed at accounting for the correlation and temporal asymmetry among the agendas. It is also designed to locate causal mechanisms that operate in each configuration.

The study of agenda-setting with regard to environmental policy

From Anthony Downs's works up to now, environmental issues have raised considerable attention among agenda-setting researchers. Political scientists have thus tried to formalize them in multiple ways. Initially, Downs (1972) presents two high profile environmental problems (nuclear power and acid rain), later examined by Howlett (1997). Harrison and Hoberg (1991) compare the agenda-setting process of two toxics substances: radon and dioxin, in Canada and in the United States. Kamieniecki (2000) discusses the agenda-setting stage of British Columbia's forest policy. Finally, Soroka (2002) covers the agenda-setting process of a generic environmental issue in Canadian federal politics.

According to Soroka (2002), environmental issues lead way to a sensationalist agenda dynamics that is one in which the process is generally dominated by the media (media-driven) and sometimes affected as well by real world matters (for instance: dramatics events or physical world factors). Though a major part of Soroka's agenda-setting researches is clearly to bring together three streams of research (on the media, public opinion and policy-making respectively), according to him, the study of environmental issues can more narrowly be depicted as a relation between the media and policy-makers.

Methodological considerations

The multiple features of environment

In this paper, we will try to test the relevance of Soroka's argument on environmental issues though we depart from his works in two ways. First, instead of considering a single generic environmental issue, we break drown environmental public policy into six major sub-problems (in doing so we follow the insights of Downs, Howlett and Harrison and Hoberg). These are climate change and ozone-depletion substances; waste management; acid rain and atmospheric pollution; drinking water; sustainable development and biodiversity. We identify these issues based on our knowledge about the interventions of the Environment ministry of Québec (see Beaudoin, Houle et Mercier, 2006). Second, we also depart from Soroka and Howlett in the way we handle the important topic of keywords selection. Neither Howlett nor Soroka bring much light to this question. Howlett (1997: 14) studies two issues (acid rain and nuclear power) and Soroka (2002:133-134) considers a single one (environment) without explicit comments on the choice they have operated in this matter. In our research, we have tried to identify important concepts related to each issue (appendix, Table 5) and we have kept for further analysis only those among them that display the highest frequency in both the newspapers and records of the National Assembly of Québec environment-related commissions.

Definitions of main concepts

Drawing from Soroka (2002), we will refer to the concept of an "agenda" as being a list of issues ranked according to their relative importance. In order to assess the relevance of a particular issue over a specific time period, we will refer to the frequencies of some related keywords in the lead of newspaper articles (or their first paragraph) and in committee's proceedings. Consequently, the "media agenda" is defined as being the list of subjects established by the media according to their content.

Due to our own limitations with regard to data gathering, we use two newspapers as indicators of the media agenda: *La Presse* and *Le Devoir*[1]. A better indicator of the media agenda would have included the electronic media along with a few other publications such as the *Journal de Montréal* and the *Journal de Québec*. However to our knowledge, the data is not available in a readily usable electronic format for the same time-span. Though we acknowledge potential biases that may arise from our choice, we are still confident that studying *La Presse* and *Le Devoir* is relevant and efficient with regard to our goal.

The "policy agenda" is the list of subjects ranked by the policy-makers according to their respective importance. In this paper, our indicator for the policy agenda is based on the records of the environment-related committees of Quebec's parliament. For each period, we cluster commission records according to their subject or issue date (similar topics discussed in commissions or close commissions are clustered so as to represent a single period). For each commission or group of commissions, we measure the number of times our 35 keywords and control expressions are mentioned[2]. We use the records of the *commission de l'Aménagement et de l'Équipement* (from 1992/05/07 to 1995/11/29) and those of the *commission du Transport et de l'Environnement* (from 1997/04/28 to 2006/09/18). We finally identify and analyze the records of 158 committee sessions.

Using parliamentary commission records is another departure from the works of Howlett and Soroka (who have used the Hansard of the House of Commons). We think parliamentary commission records represent a promising way of circumscribing relevant indicators of the environment policy agenda. This method also produces a virtuous side effect in reducing significantly the amount of data to be processed. The use of commission proceedings is hardly new and several authors have relied on them while studying the agenda-setting process in the U.S. (for instance Baumgartner and Jones 1993).

Our fourth major concept is the "period". Most of past researches in the agenda-setting literature have focused on weekly, monthly, quarterly or yearly time periods. In this paper, we use a different approach with regard to time periods. We define a period as being the time lag between the day following the end of a commission (or group of similar or close commissions) and the day that ends the next commission (or group of similar or close commissions). Consequently, the length of our periods varies widely (from 6 up to 308 days). We use a basic statistical procedure to neutralize likely biases and ensure that this particular way to deal with the time constraint do not affect our conclusions in any undesirable manner. We will be more explicit about this procedure in the next section.

Finally, our last basic concept is the "issue". In our work, we take six high-profile environmental issues: climate change and ozone-depletion substances; waste management; acid rain and atmospheric pollution; drinking water; sustainable development and biodiversity. For each of them, we define related keywords (see appendix Table 1). An issue

is a specific matter ruled by its own regulation and policy networks. For instance, Quebec government has a specific regulation on acid rain and atmospheric pollutant (*Règlement sur la qualité de l'atmosphérique*), on sustainable development (*Loi sur le développement durable*) and on ozone-depletion substances and some greenhouse gases (*Règlement sur les halocarbures*). It also has specific policies for water resources (*Politique nationale de l'eau*), waste management (*Politique de gestion des matières résiduelles*) and an action plan for climate change (*Plan d'action sur les changements climatiques 2006-2012*).

The division of our main topic 'environment' into sub-issues is mostly based on common sense. Yet it is doubtless that our research would have been enhanced by relying on more objective criteria. The use of the mass media as an indicator of the media agenda allows us to assert the general feature of environment-related issues coverage. Being too much specific would have certainly biased the day to day coverage by *La Presse* and *Le Devoir*.

At first glance, one can be surprised by the association between climate change and ozone-depletion substances on one side and between acid rain and atmospheric pollution on the other side. Instead of considering these issues independently, we decided to cluster them into two distinct groups. We present a threefold justification.

First, azotes oxides (NO_x) and sulfur oxides ($S0_2$) are nowadays the main contributors to acid rain. They are also two major atmospheric pollutants since NO_x is a well-know smog-precursor and $S0_2$ is associated with the most severe episode of air pollution around the world (Fontan, 2003).

Second, since all atmospheric pollutants (NO_x and $S0_2$ included) are targeted by the same regulations, it is particularly difficult to sort out one pollutant from the other. Two exceptions however are greenhouse gases and ozone-depletion substances. These substances are not mentioned in the regulation on atmospheric pollutants and have their own specific regulation (even though few specific greenhouse gases are actually targeted).

Third, climate change and ozone-depletion are often portrayed as similar issues because they share common features in terms of their global impact, their appearance in international treaties, their common causes (some substances create both) and their cross-over effects. It is true that we should have treated these issues separately but due to the scarcity of data that option has been ruled out early in our research.

Research hypotheses

Our main hypothesis is that the media agenda generally have a dominant effect on the policy agenda. But for the purpose of our research, we will test the alternative hypothesis of a policy-driven dynamics as well. Consequently, we derive three major hypotheses from the literature:

H_0: There is no dominant effect, either media-driven or policy-driven (hence, values of the media agenda do not predict values of the policy agenda and conversely values of the policy agenda do not predict values of the media agenda).

H_1 (*media driven hypothesis*): The media agenda has a dominant effect on the policy agenda (past values of the media agenda significantly predict current values of the policy agenda).

H_2 (*policy driven hypothesis*): The policy agenda has a dominant effect on the media agenda (past values of the policy agenda significantly predict current values of the media agenda).

Data analysis

Media agenda correlation test

Many authors consider that in spite of *prima facie* diversity in media coverage of social and political issues, most of general Medias cover similar topics more or less in a uniform fashion. This argument justifies the reliance on a single measure of the media agenda (see Soroka, 2002). Before we move towards statistical details, we need to test this hypothesis with regard to our six issues. Table 6 (see the appendix) displays Pearson's correlation coefficient score for each keyword in *La Presse* and *Le Devoir*. Out of 27 tested keywords, nine show strongly significant correlation coefficients (coefficients more than 0,8 and significant at the 0.01 level), 12 mild highly significant correlation coefficients (coefficients between 0,4 and 0,79 and significant at the 0.01 level) and two other weak but still significant coefficients. Only three coefficients are not significant.

We thus confidently assert that the two newspapers can be clustered into a single agenda as predicted by the literature. In subsequent sections, we will make no further distinction between them.

Univariate analysis

In the following analysis, we use twelve variables. Considering six issues, we analyze the relations between each media variable and its policy counterpart. The time periods vary with regard to their respective length. In order to get a standardized time unit, we divide our measure of the media and policy agendas by the number of days each period lasted. We thus obtain the mean value of each agenda for each issue per period.

Considering the distribution of our twelve variables, we must mention that all but one display a heavy positive skewness. We thus rely on a widely used strategy that takes the logarithmic value of the variable plus one in order to avoid a significant loss in the number of relevant observations whenever many original values are zero (Tufte, 1974: 108). Table 1 (see the appendix) summarizes the transformations operated.

In most cases, a positive skewness remains but is corrected enough to allow meaningful OLS analysis. Since we deal with time series, there is a need to test for autocorrelations in our variables. In order to do so, we regress each of the variable on time (Wooldridge, 2006: 432-36). Nine variables do not display any form of autocorrelation. However, three are autocorrelated (these are the policy and media agendas about sustainable development and the media agenda about waste management). Whenever these autocorrelated variables are concerned, we use a first-order autoregressive model (Prais-Winsten method) for autocorrelation (as suggested in Ostrom, 1990: 34-5; and Pétry, 2003: 161-62). We therefore estimate equation (1) for each media variable and equation (2) for each policy variable.

$$MEDIA_t = \beta_0 + \beta_1 MEDIA_{t-n} \qquad (1)$$

$$POLICY_t = \beta_0 + \beta_1 POLICY_{t-n} \qquad (2)$$

The diagnosis for each variable is listed in table 2 (see the appendix). Though the univariate analysis is a necessary starting point, our goal here is to assess bivariate relationships between the media agenda and the policy agenda with regard to six environmental issues.

Dynamic models

Formally, we aim at testing the following two alternative hypotheses: the media driven hypothesis and the policy drive hypothesis. For this purpose, we estimate the following equations:

Media driven hypothesis

$$POLICY_t = \beta_0 + \beta_1 MEDIA_{t-1} + \varepsilon_t \qquad (3)$$

Policy driven hypothesis:

$$MEDIA_t = \beta_0 + \beta_1 POLICY_{t-1} + \varepsilon_t \qquad (4)$$

Two main results from our statistical analysis must be stressed. The first one is that the media driven hypothesis is much more supported by our data than the policy driven hypothesis. As shown in Table 4, the policy agenda does not precede the media agenda in any of the six issues considered here. As far as climate change & ozone depletion on one side and sustainable development on the other side are concerned, we clearly witness the impact of the media agenda on the policy agenda. This impact can be graphically illustrated. Figure 1 and Figure 2 show that the policy agenda reacts to the media agenda with a one-period lag.

Though we put substantial evidence forward that the media driven hypothesis clearly holds in Quebec with regard to climate change & ozone depletion as well as sustainable development, one obvious weakness displayed by our data is that they do not allow us to explain the agenda dynamics for the remaining four issues (about which H_0 can not be rejected).

Main limits to our analysis

Improvements for an exhaustive analysis

In order to rigorously assess the dynamics between the agendas with regard to environment-related issues in Quebec policies, it is doubtless that a thorough search for keywords and issues is the first problem to be dealt with.

However, the difficulty of this task should not be underestimated. The first problem is obviously one of defining the scope of environmental policy. Should we include issues related to energy policy, transport policy and so on? What is an environment-related issue after all? These questions are by no mean easy.

The first answer might come from a focus on the activities of the Environment ministry and the parliamentary environment committees. Hence, we could find useful insights in laws and regulations. Here is our approach in this paper. But it is also true that in doing so we are likely to obtain country-specific results which may render comparative analysis uneasy.

If some approaches consider environment to be more easily explained when thought of as a single generic issue, the attempt to desegregate this issue raises several methodological problems. The way out surely relies on substantive knowledge of environmental policy. Improving the definition of environmental issues is probably the most difficult and important thing we have to do in order to present sound results.

When we look at a few environment-related committee sessions with low frequencies on our keywords, some other issues not included in our paper, are brought to light. Those refer to environmental problems in the agricultural domain (for instance: pesticide), protection of Saint-Laurent River, toxic waste management, industrial clean-up, and environmental project evaluation. A more comprehensive research should probably include these issues as well.

Therefore, an obvious second step in order to develop a better analysis relies on the improvement of our keyword list for each of the selected issues. It is by no mean an easy task though it is a feasible one as long as it stems from a substantive knowledge of Quebec environmental policy.

Statistical data treatments

Since the two agendas show a lack of correlation in four issues out of six, a major improvement would require getting an insight from other explanatory variables such as public opinion. We have considered that environmental policy issues dynamics is that of the relations between the media and the policy-makers. After all, this could be an unjustified or at least an incomplete assumption. If public opinion matters equally for the two agendas, we should observe strong non-lagged correlations between the agendas. This is not what we have measured. It could be that one agenda is more public opinion sensitive than the other. In both cases, it seems necessary though difficult to include other agendas in the dynamics so as to rule out spurious relations and to assess confidently the true dynamics at hand.

Concluding comments

In this paper, we have reviewed selected works in the agenda-setting literature. Then we have challenged two well-documented hypotheses with regard to the relations between policy and media agendas. After testing for six issues in Quebec environmental policy, we have reached two main conclusions.

First, four out of these six issues do not display any dominant effect, either media-driven or policy-driven. To put it more straightforwardly, the observations of an agenda behavior in time does not significantly predict the values of the other agenda.

Second, as far as climate change & ozone-depletion substances and sustainable development are concerned, we have found a one period-lag correlation between the media agenda and the policy agenda. These findings provide some support to the media-driven hypothesis (H_1) previously tested by Soroka (2002) about the generic environmental issue at the federal level.

Our main goal in this article has been one of breaking down the environmental issue. In doing so, we have been willing to demonstrate that various dynamics between the policy and media agendas can be observed in environment-related issues. At this time, we are not able to reach this conclusion. Media still appear to play a significant role in the emerging stage of the policy process.

Finally, we should mention that this study is mostly based on six cases. For each of them, we have collected many observations. This allows us to draw issue-specific conclusions. However, it is hardly enough to test a general hypothesis for all environmental issues, as Howlett (1999: 779) acknowledges in a more general perspective. Consequently, more work has to be done before we reach a robust conclusion on the subject. The lack of significant relations for the majority of the selected issues might be a warning against the overall validity of the media-driven hypothesis with regard to the environmental domain, at least when this hypothesis is tested with frequency analysis. Finally, a more elaborate content analysis might be helpful to gain a better understanding of this complex subject.

Notes

1 For the purpose of our research we use the *Biblio-branchée* search engine in order to collect relevant newspaper articles. For each sub-issue, we have searched for our keywords at a given period of time. Articles have been selected whenever the relevant keyword appears in the lead (first paragraph).

2 Control expressions consist in expressions of two keywords, often the most popular, for a particular issue. In order to avoid double-counting articles, we subtract frequency scores for these expressions from total keyword scores for a particular issue.

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APPENDIX: Tables and figures

TABLE 1

LOGARITHMIC TRANSFORMATIONS OF THE VARIABLES

Issues	Policy	Media
1 – Air1 *(climate change and ozone depletion)*	Transform (log+1)	Transform (log)
2 – Air2 *(atmospheric pollution and acid rain)*	Transform (log+1)	No transformation
3 – Waste	Transform (log+1)	Transform (log+1)
4 – Biodiversity	Transform (log+1)	Transform (log+1)
5 – Sustainable development	Transform (log+1)	Transform (log+1)
6 – Water	Transform (log+1)	Transform (log+1)

TABLE 2

AUTOCORRELATION FOR EACH OF OUR VARIABLES

Variables	Autocorrelation
Log_pol_air1	No
Log_pol_air2	No
Log_pol_waste	No
Log_pol_biodiv	No
Log_pol_sust_dev	Yes
Log_pol_water	No
Log_med_air1	No
Med_air_2	No
Log_med_waste	Yes
Log_med_biodiv	No
Log_med_sust_dev	Yes
Log_med_water	No

TABLE 3

RESULTS RELATED TO THE MEDIA DRIVEN HYPOTHESIS

Policy	Issue 1	Issue 2	Issue 3	Issue 4	Issue 5	Issue 6
Media $_{t-1}$	0,1620** (0,0450)	0,2873 (0,1485)	0,3923 (0,6648)	0,8836 (1,0046)	1,0125*** (0,2710)	-0.0493 (0,0914)
Policy$_{t-1}$	—	—	—	—	0,4959*** (0,1041)	—
Constant	0,2818*** (0,0553)	-0,0016 (0,0310)	0,2738 (0,1402)	0,1768 (0,1271)	-0,0415 (0,0574)	0,0435 (0,0128)
R^2	0,1905	0,0637	0,0063	0,0139	0,6438; DW=1,85; ρ= -0,1453	0,0053
N	57	57	57	57	57	57
DF	55	55	55	55	54	55

N: Number of observations, DF: Degree of freedom. Standard error reported in parentheses.
***Correlation is significant at the 0.001 level (two-tailed
**Correlation is significant at the 0.01 level (two-tailed)
*Correlation is significant at the 0.05 level (two-tailed)

TABLE 4

RESULTS RELATED TO THE POLICY DRIVEN HYPOTHESIS

Media	Issue 1	Issue 2	Issue 3	Issue 4	Issue 5	Issue 6
Policy $_{t-1}$	0,7449* (0,3645)	0,0220 (0,1175)	-0,0017 (0,0227)	-0,0077 (0,0178)	0,0376 (0,0388)	0,1143 (0,1936)
Media $_{t-1}$	—	—	0,6934*** (0,1015)	—	0,7862*** (0,1016)	—
Constant	0,9469*** (0,1205)	0,1840*** (0,0152)	0,0488* (0,0203)	0,1134*** (0,0092)	0,0375 (0,0201)	0,1038*** (0,0139)
R^2	0,0694	0,0006	0,4726; DW=1,98; ρ= -0,3825	0,0033	0,7077; DW=2,04; ρ=-0,3922	0,0062
N	57	57	57	57	57	57
DF	55	55	55	55	54	55

N: Number of observations, DF: Degree of freedom. Standard error reported in parentheses.
***Correlation is significant at the 0.001 level (two-tailed)
**Correlation is significant at the 0.01 level (two-tailed)
*Correlation is significant at the 0.05 level (two-tailed)

TABLE 5

KEYWORDS AND CONTROL EXPRESSIONS LIST

		Keywords or control expressions
Issue 1# climate change and ozone-depletion substances	1	*changements climatiques*
	2	*changement climatique*
	3	*gaz à effet de serre*
	4	*réchauffement global*
	5	*réchauffement climatique*
	6	*réchauffement climatique et gaz à effet de serre*
	7	*réchauffement climatique et changements climatiques*
	8	*changement climatique et gaz à effet de serre*
	9	*changements climatiques et gaz à effet de serre*
	10	*couche d'ozone*
	11	*CFC*
	12	*couche d'ozone et CFC*
Issue 2# waste management	13	*gestion des déchets*
	14	*incinération*
	15	*matières résiduelles*
	16	*collecte sélective*
	17	*gestion des déchets et collecte sélective*
	18	*collecte sélective et matières résiduelles*
Issue 3# acid rain and atmospheric pollution	19	*pluies acides*
	20	*dioxyde de soufre*
	21	*SO2*
	22	*anhydride sulfureux*
	23	*smog*
	24	*oxydes d'azote*
	25	*qualité de l'air*
	26	*assainissement de l'air*
	27	*smog et qualité de l'air*
Issue 4# biodiversity	28	*biodiversité*
	29	*conservation de la faune*
	30	*réserves fauniques*
	31	*aires protégées*
Issue 5# sustainable development	32	*développement durable*
Issue 6# drinking water	33	*contamination de l'eau*
	34	*cyanobactéries*
	35	*eaux usées*

TABLE 6

CORRELATION COEFFICIENTS BETWEEN THE FREQUENCIES OF KEYWORDS IN THE NEWPA*PERS LA PRESSE* AND *LE DEVOIR*

Keywords number	**Correlation coefficients (Pearson)**	**Observations (N)**
1	0,971**	58
2	0,720**	58
3	0,973**	58
4	0,164	58
5	0,867**	58
10	0,722**	58
11	0,524**	58
13	0,845**	58
14	0,403**	58
15	0,514**	58
16	0,818**	58
19	0,361**	58
20	0,187	58
21	0,031	58
22	0,357**	58
23	0,839**	58
24	0,508**	58
25	0,592**	58
26	0,333*	58
28	0,787**	58
29	0,415**	58
30	0,492**	58
31	0,850**	58
32	0,956**	58
33	0,849**	58
34	0,465**	58
35	0,710**	58

**Correlation is significant at the 0.01 level (two-tailed)
*Correlation is significant at the 0.05 level (two-tailed)

FIGURE 1

CROSS-CORRELOGRAM OF POLICY AND MEDIA AGENDAS WITH REGARD TO CLIMATE CHANGE AND OZONE-DEPLETION

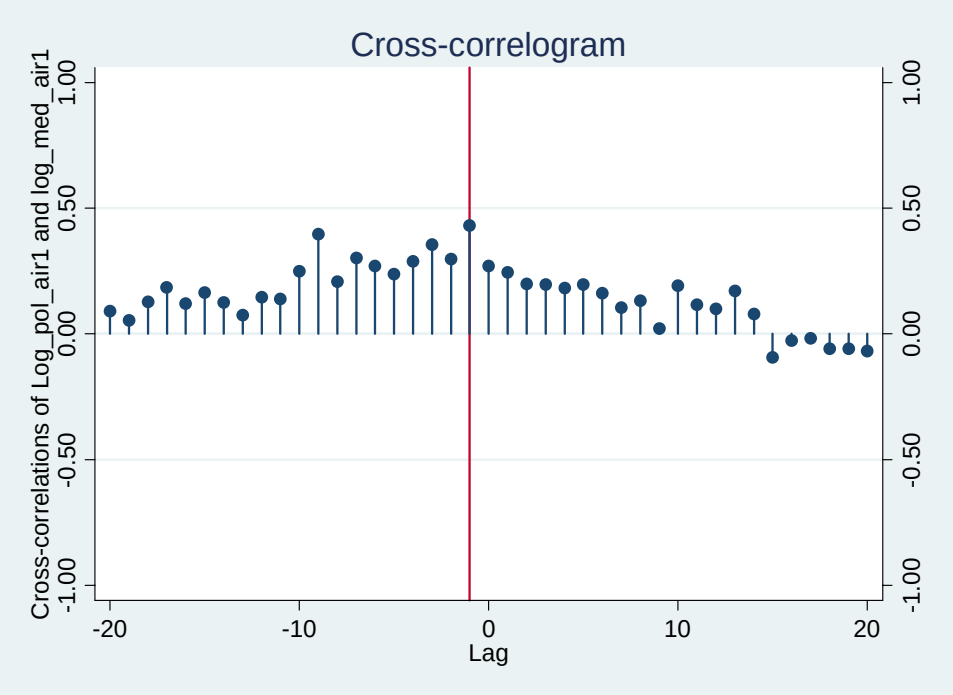

FIGURE 2

CROSS-CORRELOGRAM OF POLICY AND MEDIA AGENDAS WITH REGARD TO SUSTAINABLE DEVELOPMENT