



# The imperishable controversy over aquaculture

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## ABSTRACT

Fish farming has been a recurring topic of debate, not the least in the news media. The media is an important source of information about the aquaculture industry and its products to the public. However, the media is also an important debate arena, enabling representatives of the public, stakeholders, authorities, and the industry to engage in discussions as well as to influence policy and regulations. This paper focuses on the continuous debates in news media, the topics and storylines discussed, the various actors participating, and their arguments. Through a study of the content, positions, and producers of debate contributions in nine Norwegian newspapers, this paper sheds light on the public debate on aquaculture and the present controversies. Drawing on discourse theory, it is argued that the concept of discursive conflicts offers important insights into the controversies surrounding aquaculture. Discourse coalitions unite seemingly dissimilar and independent actors, and shared story lines provide political momentum, reduce complexity and reify the debate. However, such coalitions also contribute to maintaining the debate in a deadlock.

## 1. Introduction

Aquaculture is controversial and triggers fierce public conflict across the world. The debate is particularly visible in the mass media [1–3] and is mostly concerned with farmed salmon, both as a food and as a product that has negative environmental consequences. The debate in Canada has been characterized as involving "the most bitter and stubborn face-offs over industrial development ever witnessed" [4: p. 3], and in Norway has been dubbed the "salmon war" [5]. The aquaculture controversy engages a wide range of actors, including scientists, environmentalists, journalists, lawyers, local farmers, sports anglers, native communities, gourmet chefs, and so forth. Simply put, the opposition is between those in favor of a flourishing industry producing food to a growing global population, and those who fear that such industrial production may have irreversible consequences for marine ecosystems. However, at its most fundamental, the conflict is about how much human beings should intervene in nature and, as shown earlier [1,6], reflects a global unease about the health and safety of modern methods of food production. As such, aquaculture is often presented as a complex activity that raises concerns about health, environmental, economic and socio-cultural issues.

In this article, the public debate on aquaculture is investigated as it is expressed through written debate contributions in nine newspapers in Norway. The research questions are: What is the controversy of aquaculture about, and why are prominent storylines and arguments

seemingly repeated unabatedly?

## 2. Theoretical framework

The public debate about aquaculture takes place in a number of arenas, be it in public hearings, conferences, and the mass media, to name but a few. The arena metaphor [7] is here used to portray the symbolic location of the political actions of all social actors involved in a specific issue, namely the public discussion of aquaculture, its production methods, its environmental and social impact, and its product, the Atlantic salmon. Within a policy field several arenas may exist where actors are present to influence the policy process; this is also the case of aquaculture policy. However, here the focus is on the political actions taking place in the arena of the mass media in Norway, and, more specifically, the actions that took place in nine national, regional, and local newspapers through the years of 2012, 2013, and 2014.

### 2.1. Media influence and public opinion

Even though the degree of the media's influence remains a matter of uncertainty, it is evident that the media have an impact on public opinion [6,8,9]. The media plays an important part in how people receive information about news and people's images of our modern world (our perception of reality) are constructed in a process domi-

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nated by the mass media [10,11]. To a significant degree, public opinion as well as politics is shaped by the news media's selection and presentation of their news stories. By giving certain issues differential attention (by covering or ignoring the issue) the media influences our perception of what the most important issues are of the day. Issues emphasized in the news media will over time be regarded as important by the public [12–14].

Public opinion is also subject to media framing, which means that the media highlights some aspects of an issue, and ignores others [14]. A frame can be defined so as to suggest what the essence of an issue is and what the controversy surrounding an issue is about, e.g. like a central story line or idea. An important mechanism for framing an issue is the packaging of information, e.g. the symbols and language used to describe the issue. The symbols used may pertain to the frame or to the reasons and justifications, and help construct the frame/interpretive package. Examples of symbols associated with a frame are visual images, metaphors, and depictions [10]. A useful approach to investigating such frames and how the media portrays aquaculture is discourse analysis.

## 2.2. Discourse analysis

Discourse analysis starts from the premise that the way in which people talk about aspects of the world is not a neutral reflection of reality, but rather plays an active role in creating and changing it. Discourses are important to study because they play a key role in the process of political change. Discourses are where political debate takes place, and where different actors engage in a competition for discursive hegemony by seeking support for their versions of reality. Discourses define what types of actions are considered rational and logical and which ones are unthinkable [15]. Discourse analysis is often applied to study controversies, where two or more discourses compete for hegemony [16–18].

In line with Hajer [19], an argumentative approach inspired by Foucault in which interest is understood as being constructed through discourse is applied here. According to Hajer [19], the development of a new political discourse may create a change in people's perception of problems and opportunities, which may lead to new coalitions. As Hajer explains:

*The argumentative approach focuses on the level of the discursive interaction and argues that discursive interaction (i.e. language in use) can create new meanings and new identities, i.e. it may alter cognitive patterns and create new cognitions and new positionings. Hence discourse fulfills a key role in processes of political change [19, p. 59]*

Hajer proposes three tools for examining discourses: similarity in metaphors and rhetorical concepts; dominant storylines; and discourse alliances consisting of authors applying these concepts and storylines.

## 2.3. Metaphors and imagery

Metaphors and other rhetorical concepts are used to create consistent, coherent, and powerful images. Schön [20] has argued that metaphors provide a common ground between various discourses. Complex research work is reduced to a visual presentation or a catchy one-liner. All uncertainty and all the conditionality of the original knowledge claims are erased and replaced by statements that are still true, but simplistic and shallow. The use of metaphors can thus be seen as a way of reproducing scientific findings in a non-scientific language. They often have strategic policy implications [21, p. 107], and can point the finger of blame and imply responsibility for remedial actions. Metaphors and other rhetorical concepts are an integral part of story lines.

Story lines refer to a condensed form of narrative in which metaphors, analogies, clichés, historical references, and so forth, are

employed and used by people as 'short hand' in discussions. Hajer defines story lines as: *narratives on social reality through which elements from many different domains are combined and that provide actors with a set of symbolic references that suggest a common understanding [19, p. 62]*. Through story lines the problem is defined, solutions are proposed, and blame and responsibility are distributed. Through story lines actors are positioned as victims, problem solvers, perpetrators, top scientist or scaremongers. Complexity and uncertainty are erased so that story lines may serve as a narrative that many can subscribe to. Story lines allow for the clustering of knowledge and have a prominent role in the creation of discourse alliances. A discourse-coalition refers to a group of actors that shares the usage of a particular set of story lines over a particular period of time. Hajer [22] describes discourse coalitions as alliances of knowledge bearers. Discourse coalitions are defined as the totality of a set of story lines, the actors involved and the areas where the discursive activity takes place. Actors are not necessarily closely related to each other, but are united through shared story lines. Actors are attracted to specific sets of story lines for different reasons, but are united through a common understanding of the social and moral order the story line portrays.

Shared story lines provide political momentum. No matter what their institutional position is, the actors *who are able to impose their interpretations of reality on others gain substantial control over political debates [22, p. 6]*. Such actors are elsewhere called 'policy entrepreneurs' or 'claim-makers' [10,23,24]. By framing public issues to garner support from the media, public, and political actors, these claim-makers are working to shape public debate. Claim-makers aim to construct a social problem, and to be successful they typically must identify a potential triggering device, such as natural catastrophes, ecological change etc. [10]. *If claim-makers are able to persuade others of the legitimacy of their concerns and are able to recruit early converts, a collective definition of a problem forms; and to the extent that collective definitions of problems come to supplant individualistic definitions, a social problem can be said to exist. [24, p. 38]*.

## 2.4. Debate contributions

The opinion pages in newspapers play a distinct role in public debates. It is the only place in the newspaper where members of the public can contribute as writers. However, the pages are also open to journalists (most often writing as freelancers in our material), and government officials, including members of parliament. The opinion pages are often viewed as a key site for public debate [25] and allow for the expression of opinions both based on personal experience as well as objective knowledge claims. The position of and the space allocated to the opinion pages vary greatly between newspapers and countries [25], but have in most Norwegian newspapers a very prominent role. The media desk is the gatekeeper to get published, and will select contributions that ensure the ongoing relevance of the opinion pages, and which contribute to the overall circulation of the newspaper. The desk may reject contributions, but the desk is often looking for a multiplicity of voices [26]. Hill [27] found that the opinions expressed in debate contributions were similar to public opinion polls on the topic in question. However, others are more reluctant to view the opinion pages as a good representation of public opinion [28]. In this paper debate contributions are viewed as a representation of the public debate in the mass media, as one arena among others for public debate. To get a contribution published, an author will attempt to address and convince both the media desk and the general public. And as former research [25,28,29] has shown, the media desks select debate contributions based on four main rules.

The first one considers the structure and form of contributions, especially in terms of brevity, and whether the message is to the point and explicit, and employ a primarily argumentative style. Brevity is important due to the newspapers structure and format. There is limited space and the text should be appropriate for the readers of the

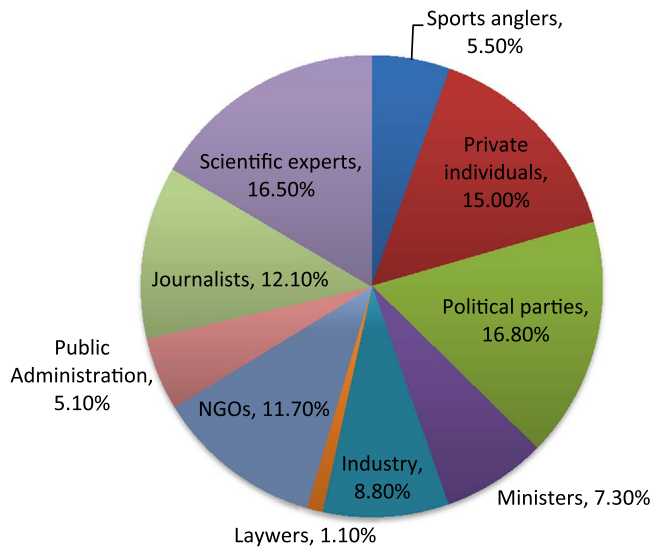


Fig. 1. Actor groups participating in the aquaculture debate (percentage of contribution).

newspaper. The second rule for selection is the rule of relevance. The contribution should respond to on-going debates or events that are already present in the media or the public sphere, and from this follows that new themes are difficult to introduce. There is also a certain expectation of entertainment value. As Wahl-Jorgensen [30] has discussed, contributions should therefore be eloquently written, perhaps with a humorous or ironic style, or display personal experiences and speak from the heart. This is also linked to the last rule of thumb, that of authority. Media desks evaluate contributions based on cultural standards of eloquence and expertise [29, p. 77]. This implies that letters are judged by their spelling, grammar and persuasiveness, which are closely linked to educational capital, i.e. formal qualifications. Contributors need to justify why they are important to listen to, and authority is gained through formal titles, personal knowledge or experience [19]. However, in the age of mediatization new actors also get easier access to the arena [22], in this case the opinion section in newspapers. Hajer [22] says that claims can increasingly be made from all sorts of entrepreneurs, despite the fact that they might lack a clear institutional base. Authority is thus gained through personal experience or by applying recognizable arguments. Wahl-Jorgensen [30] asserts that writers need to be seen as knowledgeable on the topic and well-known recognizable arguments are one way of appearing knowledgeable.

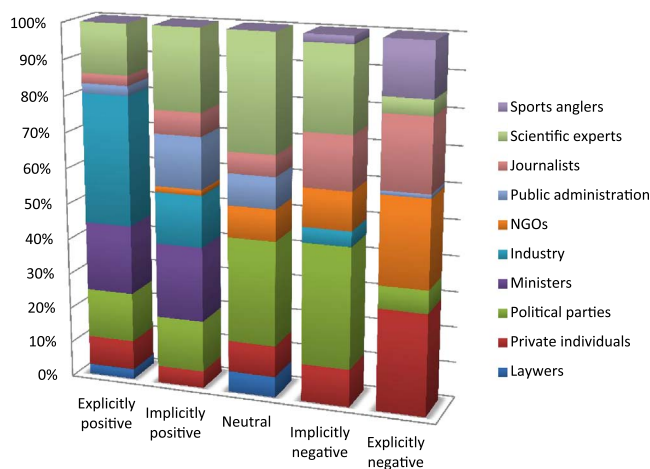


Fig. 2. Actors and position in the debate (percentage within each position type).

### 3. Research methods and materials

The analysis presented below is a study of the debate on salmon aquaculture in Norway. Norway is an important nation in salmon aquaculture, as it is the world's largest producer of farmed salmon. The analysis is limited to the debate contributions printed in the opinion pages of nine newspapers. The newspapers included include three with a national reach – *Dagens Næringsliv*, *Klassekampen* and *Dagbladet* – three with a regional outreach – *Bergens Tidende*, *Adressa* and *Nordlys* – and three with a local outreach – *Finnmarken*, *Sunnmørsposten* and *Lokalavisa Nordsalten*. The newspapers were selected with an eye to geographical location and the presence of aquaculture farms, as well as distribution. The national newspapers differ with respect to the political profiles they are known for, where *Dagens Næringsliv* has a reputation for being business-oriented and *Klassekampen* for having a more socialist profile. *Dagbladet* is a more popularized liberal newspaper. Individual media items were selected using an electronic database (A-tekst). The search terms were one or more of the following words [in Norwegian originally]: *Farming, aquaculture, farmed salmon* (and to limit results articles with the search words +(one or many of these following words) *fur farming, fur animals, cod, turkey, birds, horse, seashells, cross words, recipe* were removed. Each item was then read to exclude those that made only a passing reference to aquaculture, leaving a total of 1304 items. The material was subject to a qualitative content analysis with a directed approach where initial codes were identified through relevant theory, former research and preliminary findings. All articles were read and analyzed, and coded on 15 variables (see Appendix for the overall coding scheme). The analysis was used to identify topics in media coverage, sources used (and actors given access to the debate), possible media events, and the impression conveyed by the article concerning benefits or risks, the importance of environmental, economic or health issues, and what positions are presented in the articles.

In this article, the study is limited to the 273 written debate contributions that were printed in the opinion pages of these newspapers. The debate contributions included vary in length from 300 to 3000 words, and represent 1/5 of all media items identified. When all debate contributions were selected, a second round of analysis began, re-reading all contributions and categorizing each in terms of the metaphors and analogies used, how problems are named and framed, how actors are situated, and the type of actor who wrote the article. The actors identified were thereafter clustered into discourse alliances based on similarities in storylines and rhetorical concepts. Based on this analysis, labels were chosen for the discourses that were characteristic for the policy claims uttered. For a broader analysis regarding discourses in regular news items from the same time period and newspapers, see Olsen and Osmundsen [31].

### 4. Results

There was a broad representation of actors that contributed to the opinion pages in our material, corresponding to the democratic rationale ascribed to such pages. As illustrated in Fig. 1, actors were categorized into 10 groups. All of these actors contributed to the different newspapers included in this material, at the national, regional and local levels. The contributors, in ascending order, according to the extent of their contribution, are: political parties, scientific experts, private individuals, journalists, NGOs, industry, members of cabinet, public administration, sports anglers, and lawyers. However, both sport anglers and private individuals were of various backgrounds and occupations, and can be considered private individuals who do not draw on any formal credentials to legitimize their opinion. Together these represent 20,5% of all contributions. Journalists writing debate contributions do so as freelancers and offer these to other newspapers than their own, hence, these may also be considered as private individuals in this context. Categorizing 'private individuals' in this

**Table 1**

The two alliances, actors, storylines, and rhetorical concepts.

Alliances	Actors	Storylines	Rhetorical concepts
'Environment- and conspiracy' alliance	Journalists, private individuals, sports anglers, NGOs, and a few political parties	'A billion dollar industry which by the aid of corrupt politicians is allowed to destroy our fjords'.	Sewage, poison, stinking hazardous waste, underwater prison, conspiracy
'Industry and food production' alliance	Ministers, industry and lawyers, most political parties, and the largest environmental NGOs (Bellona and WWF)	'Aquaculture saves the global population, and all human activity leaves a footprint. The government takes environmental challenges seriously'.	Hungry global population, local jobs, local communities, growth potential, an acceptable footprint, innovation, environmental challenges

manner creates a group that represents 32,6% of the material. The aquaculture industry itself wrote only 8,8% of the debate contributions included here. The industry is also supported by lawyers, and even though these represent only 1,1% of this data material, they are emerging as important messengers in the discursive conflicts and controversies over aquaculture.

In Fig. 2, the position of each of the actor groups is shown. The positions have been categorized on a five-point scale from 'explicitly positive - implicitly positive - neutral - implicitly negative - to - explicitly negative'. 51,6% of the contributions were categorized as either implicitly or explicitly negative, and 39,9% as either implicitly or explicitly positive, and the rest were considered as expressing neutral opinions.<sup>1</sup> While the debate encompassed a broad variety of voices, the position of each contributor towards or against aquaculture was very predictable (Fig. 2).

The contributions of the sport anglers were all negative, and most of the contributions from journalists, NGOs and private individuals were also negative. The industry, and ministers of the sitting cabinet expressed mostly positive opinions towards aquaculture. Scientific experts and public administrators represented more neutral positions, even though there were both positive and negative contributions written by these groups.

In the data material, there were three main discourses, which have been labeled "Seafood", "Salmon Farming", and "Salmon". "Seafood" refers to aquaculture and seafood production in general as an economic sector and its importance to the national economy. "Salmon Farming" concerns aquaculture as production, and encompass both producers and production methods, and the consequences for the natural and social environment. The "Salmon" discourse relates to discussions about salmon as an animal and food. Most of the debate contributions were concerned with the discourse labeled "Salmon Farming" which will be the focus below. It is within this discourse that the most distinct storylines and coalitions are found.

Debates about salmon farming concern both the production and its consequences, but also the producers themselves. The producers were often portrayed as capitalists and profiteers because their incomes have soared in recent years due to high salmon prices. Furthermore, salmon production takes place in what is considered the Norwegian commons, the fjords that all have and should have access to. They are therefore described as making a personal profit from something that belongs to the community at large. Even though salmon producers often pay a stiff price to the Norwegian government for their license to produce in the commons, the profit margins are high. The production itself was also debated, mostly in terms of the consequences for the marine environment. Wild salmon is viewed as the most vulnerable species to be affected by escapees or salmon louse, but other wild aquatic organisms are also seen as being at risk. Other salient themes were effluents and organic waste from farms, and the consequences of medication use. Also, the wildlife above the water was debated, as well as conflicts with other interests such as traditional fisheries, cabin owners, and tourism. The "Salmon Farming" discourse also included issues of a more global

nature, such as the use of marine resources for production of fodder.

An examination of the debate contributions in the data material shows that these issues engage two distinct discourse alliances [19]. The first alliance has been labeled the 'Environment and conspiracy alliance' in accordance with the arguments and storylines salient in this alliance. Actors who belong to this alliance were journalists, private individuals, sports anglers, NGOs, and a few political parties. The second alliance has been labeled 'Industry and food production alliance' in accordance with the salient storylines and arguments. Contributors were ministers of the sitting cabinet, industry representatives, most political parties, and the largest environmental NGOs (Bellona and WWF).

Shared arguments and imagery were repeatedly used in most of the contributions within an alliance during the time period here studied, despite rebuttals and counterarguments made by other actors and alliances. Table 1 portrays the alliances, actors, storylines, and rhetorical concepts characterizing both sides of the debate. A few actors, often those most prominent in this debate, also engaged in personal attacks ridiculing or characterizing the opponent in negative terms; however, this was more rare.

As shown in Table 1, the 'Environment- and conspiracy' alliance produced debate contributions, which together formed a storyline portraying aquaculture as a billion dollar industry that, by the aid of corrupt politicians, is allowed to destroy Norwegian fjords. The rhetorical concepts used in these contributions create images of a filthy industry exploiting pristine waters and destroying wildlife, by employing phrases like "sewage", "poison", "stinking", "underwater prisons", "the whole ecosystem is collapsing". The words employed appealed to emotions and to preserving the value of nature untouched by human activity. Such imagery was often coupled with suggestions or blatant accusations of a conspiracy between fish farmers and the government. Examples include, portraying politicians as "people bought by the industry". Many also included statements for legitimizing momentum, e.g. by situating the author as one amidst many, through phrases like "People are waking up", "People are starting to realize what is going on" and "All whom I have been in contact with".

The 'Industry and food production' alliance produced debate contributions that together formed a storyline about how aquaculture saves the global population from hunger, while acknowledging that all human activity leaves a footprint, which the current government takes seriously. The rhetorical concepts employed created a positive image of progress and growth, through words like "growth potential", "innovation", and "challenges". This was often coupled with numbers demonstrating the significance of the industry, such as the number of dinner plates of salmon produced. Local communities and the need for local jobs were often used as arguments for why aquaculture is important. While the negative environmental impact was acknowledged, it was often portrayed in terms such as "sustainability" and "an acceptable footprint" suggesting that this is both manageable and tolerable. Finally, the government, public administration, and national regulations were portrayed as strict and as upholding high environmental standards.

In addition to these two alliances, scientific experts and public servants working with aquaculture participated in the debate. These actors cannot be said to belong to any of the alliances, but contributed

<sup>1</sup> This finding is slightly different from findings from the overall media analysis, looking at other newspaper items than debate contributions, where there is a larger number of positive than negative articles concerning aquaculture [31].

by correcting statements in the debate through facts, knowledge claims, and recent research results. However, they rarely introduced new topics.

## 5. Discussion

Ideally one could expect that media debates on aquaculture should evolve over time, as older disagreements are resolved, contributors reach consensus, and new themes are introduced. However, the debates on aquaculture seem to continue with the same arguments, rhetorical concepts, and storylines over time. Acknowledging that the data material only covers three years, similar arguments can however easily be found in debate contributions both before and after this time period.

Three main explanations for the continuous and ritualistic character of the debates surrounding aquaculture are proposed. The first explanation is based on the form and structure of debate contributions. Media desks receive a great number of debate contributions and a large portion of these will not be published. To have a contribution accepted it is therefore important to correspond to a set of written and unwritten rules. As earlier identified [28,30], media desks use four rules to judge incoming contributions: brevity, relevance, entertainment value, and authority.

In the data material contributions were in line with these structural and functional rules; however, not necessarily all at the same time. Contributors from the sitting cabinet, industry or lawyers seem to rely more on their formal credentials, and display a more sober language, referring to facts and figures. The sports anglers, private individuals, and local interest groups seem to substitute what they lack in formal authority with a more colorful language, appealing to the emotions of the reader, and rely on their personal experiences with aquaculture.

A second explanation is to be found in the discourse itself. Earlier research [19,32] has argued that when the theme for a debate is complex, open to different interpretations and explanations, contributors to the debate resort to shared rhetorical concepts and storylines to get their messages across. Such shared concepts and storylines serve important functions in defining the essence of the debate. They **reduce complexity** and create a recognizable story concerning what the problem is, who is to blame, and the position of the author as a victim, savior, whistle blower, and so forth. Shared storylines and rhetorical concepts replace a complex scientific debate. These concepts also allow anybody to participate, regardless of their educational background and expertise. Contributors, supported by recognizable concepts and storylines, are allowed to communicate their messages without having in-depth knowledge of the topic in question. Recognizable and known arguments give **authority** to the contributor. Shared concepts and storylines also give **permanence** to the debate, and reify it so that it becomes more manageable. Arguments become stronger the more they are repeated, and the alliance gains strength as many agree and present the same arguments. Also, the more arguments are repeated the truer they become, despite being refuted by others. Facts may be a problem, but can easily be ignored because many and different contributors agree on what the problem is and are attracted to the same arguments. This makes the alliances **resilient towards facts** and creates political momentum [21].

A third explanation is rooted in the topic itself – aquaculture. Aquaculture can be viewed as an emblem for a more general environmental conflict. To take a stance 'for' the environment may be costly if it affects your own lifestyle, employment, or bank account. Aquaculture is for many an economic sector they only vaguely relate to when choosing salmon over many other dinner options. So if people chose to oppose aquaculture they may perceive themselves as environmentally friendly and their choice has few ramifications for themselves. Also, the nature of environmental conflicts has earlier been described as

essentially discursive conflicts [17,19,32,33]. Understanding environmental conflicts as different than traditional conflicts rooted in competing interests, value systems, misunderstandings, or dislike between opponents, means to acknowledge that at the essence of the conflict are narratives of disparate social realities. Environmental policy issues are often characterized by uncertainty and are open to interpretation both concerning the definition of the problem and the appropriate solutions. Saarikosi [32] explains that when policy issues are messy and difficult to interpret, actors attempt to make sense of them by selecting for attention certain features of reality and using these to construct a coherent narrative. However, opponents thus often employ contrasting and often incompatible models, metaphors, and interpretative schemes to make sense of a policy issue, which is why such issues can be described as being in a deadlock or as "dialogues of the deaf" [19,34]. To resolve such deadlocks the work of Ostrom [35] may serve as inspiration.

The prominent place these debate contributions take in newspaper media has important political implications. The two alliances are able to shape and control the public debate of aquaculture over time. As policy entrepreneurs, participants adhere to a shared storyline, and are mostly concerned with promoting the specific social and moral order the storyline portrays. This obscures the debate about aquaculture and omits other important issues regarding aquaculture, be it technology development, use of marine resources in feed, fish welfare, certification schemes or others, which were rarely treated in the debate contributions analyzed in this article. Facts or issues, which are regarded as incompatible to the storyline, are excluded. The two alliances identified above dominate the debate at the expense of other participants with a more nuanced agenda. The public, reading the debate contributions, is thus left with an un-nuanced and inaccurate understanding of aquaculture. This has repercussions for the content and form of the public debate of aquaculture, and ultimately for policy developments in both public administration and industry.

## 6. Conclusion

The controversy concerning aquaculture is often centered on environmental problems, which is also reflected in this study. There are two distinct discourse alliances in the data material presented. The 'Environmental and conspiracy' alliance has a shared 'discourse of environmental disaster' that empowers different and independent actors and gives them a focus for their protest and the argumentative ammunition to argue their case. The 'Industry and food production' alliance writes in defense of aquaculture, and is represented by mainly industry representatives and members of the sitting cabinet. Environmental problems are here obscured by concepts such as 'sustainability' and 'an acceptable footprint'. For different reasons, as discussed above, discourse alliances remain stable and unchanged for a substantial amount of time. The arguments repeated by these alliances ultimately take on the quality of facts, and, despite rebuttals, are repeated by other contributors, and so the debate continues in circles. Such a deadlock serves poorly the public debate about aquaculture, which should be updated and well informed to ensure that public administration and industry have the ability to evolve and improve. Continuous efforts by the industry, public administration and others towards transparency, stakeholder involvement and open dialogue are central to counteract such deadlocks [35].

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## Appendix

Coding scheme.

Variable	Values
Article number	Unique number for each article
Headline	Headline of article
Newspaper	Dagbladet Klassekampen Dagens Næringsliv Bergens Tidende Adresseavisen Nordlys Sunnmørsposten Lokalavisa Nord-Salten Finnmarken
Date	Date published (2012–2014)
Size of article (including pictures)	Small Medium Large
Media genre	Editorial Debate letter Reportage Interview News article Feature Inquiry Ad (registered, but not part of analysis due to small size) Petit (registered, but not part of analysis due to small size) Note/fact box (registered, but not part of analysis due to small size)
Actor (producer of text)	Editorial staff Commentary Interest group Researcher/expert Industry representative Opposition party Government/regulatory body International interested party Other
Name of actor	(in case of debate contribution)
Topic	Technology Biology (fish, fish health, fish feed, etc.) Environment (spread of fish diseases, lice, escapes, etc.) Health (human health, when talking about fish as food) Industry (about the industry as a whole of specific companies— economy, results, licenses, etc.) Politics (politics related to aquaculture industry—i.e., state ownership) Regulation/trust (Does regulation work? Trust in regulation) Other
Level (content of text, not newspaper)	National (or global/international) Regional Local
Primary source used in article	(same values as Actor)
Secondary source used in article	(same values as Actor)
Tertiary source used in article	(same values as Actor)
Media / political event	Open field (if connected to an event—political or created by the media)
Risk/benefit category	Risk Benefit None
Subcategory	International innovation Norway's development (export and economy) Regional development (regions relative strength, regional innovation) Local development (local community, corner stone industry) Global health and environment (news about salmon, genes, resistance)

	National health and environment (escapes, diseases, contamination farmed-wild salmon)
	Local vulnerability (economy and environment)
	Government–industry relation
Position	Explicitly positive Implicitly positive Neutral Implicitly negative
Comment	Explicitly negative (open field)

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