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Are new industry policies precautionary? The case of salmon aquaculture siting policy in British Columbia

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ARTICLE INFO

Published on line 27 June 2008

Keywords:

Policy evolution
Siting policy
Salmon aquaculture
Agenda setting
British Columbia

ABSTRACT

This paper argues that regulatory processes and outcomes in the context of a new industry could respond to mechanisms and factors that shape governmental agendas, illustrating how policy can behave reactively rather than in a precautionary manner. In the case of salmon aquaculture, an emerging industry characterized by risks, uncertainties, exponential growth, economic significance and environmental controversy, the outcomes of such reactive policies are generally reflected in siting criteria that yield implicit environmental and socio-economic disadvantages and trade-offs. This paper proposes a conceptual framework based on specific mechanisms and factors that attempt to explain how policy evolves in the context of a new industry. It then links regulatory events back to the concepts to discuss how siting policy has been shaped using the salmon aquaculture industry in British Columbia as an example. The paper finally argues that, although in practice, policy makers generally tend to make incremental choices that are reactive to diverse issues, new industries could adopt more precautionary policies based on processes of public negotiation, analytical decision making and regional planning based on a systems approach.

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1. Introduction

Industry sectors that face multiple risks and public opposition frequently have to comply with strict and complex regulatory outcomes. A good example is the case of new industries that need to site 'undesirable' facilities to carry out their everyday operations. Siting policy choices for these industries are often complex, as regulatory processes need to consider significant social and environmental aspects while being able to deal with conflicting interests and values that generate disagreements among stakeholders and policy makers. Siting cases such as energy facilities (Van der Horst, 2007; Keeney, 1980), hazardous facilities (Kunreuther et al., 1993) and solid waste landfills (Al-Yaqout et al., 2002) often end up in controversial

affairs, where businesses and municipalities are sometimes confronted by local interest groups and regulators. More recently, newer industries such as salmon aquaculture have begun to face similar siting issues, which are characterized by a profound interaction between biophysical, socio-economic, political, and cultural-ethical contexts.

To date, siting undesirable facilities continues to raise intense public resistance, mainly due to potential health and environmental concerns. In their need for policy regulation, some of these industries have adopted a common practice to react to external events rather than behaving in a precautionary manner (that is, attempting to balance environmental, socio-economic and governance goals), thereby missing the opportunity to promote policies aimed at protecting human

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doi:10.1016/j.envsci.2008.05.002

health and the environment in the face of uncertain risks (Kriebel et al., 2001). The precautionary principle is advocated widely as a basis for regulatory decisions regarding risks whose extent and potential consequences are not well understood (O'Riordan and Cameron, 1994). Yet, in practice, there are many instances in which new risks are not approached with precaution.

Salmon aquaculture is an example of a new industry where multiple risks and uncertainties, exponential growth and an intense environmental debate tend to drive policy makers to expand, adjust or replace siting policy in the need for changing regulations in short time frames. Siting policy has become central to the debate over the conflicts and concerns regarding the salmon aquaculture industry in different parts of the world. In British Columbia (BC), criteria for site selection ultimately determine the location of salmon aquaculture facilities and shape siting policy processes and outcomes. However, the way that such criteria are determined and what they entail render several disadvantages and trade-offs that may certainly limit the expansion of the sector (under the assumption that salmon aquaculture is a viable industry that is capable of further growth). The development of the industry in the province has also generated social and environmental controversy as fish farm sites and their ecological footprint commonly interfere with the way of life of indigenous (First Nations) groups (Gerwing and McDaniels, 2006), coastal communities and other resource users, some of whom are in opposition to industrial aquaculture. As far as siting policy is concerned, this fact makes the BC case distinctive from several other aquaculture-intensive jurisdictions.

Salmon aquaculture was introduced to BC in the 1970s, albeit in small-scale, locally controlled farms (Keller and Leslie, 1996). During that same decade, Norway and Scotland took the lead in commercial, large-scale salmon production. BC's salmon farming industry continued to expand during the next two decades under a very complex regulatory setting (Galland, 2004). The industry developed extensively in Chile and, to a lesser degree, in the Faeroe Islands and Eastern Canada. As of 2008, BC is the world's fourth largest farmed salmon producer (British Columbia Salmon Farmer's Association, 2008), although its magnitude remains relatively small compared to the global industry, in that Norway and Chile together represent about 80% of the worldwide farmed salmonid production (Food and Agriculture Organization, 2008).

This paper addresses (i) the way by which siting regulatory processes associated with the salmon aquaculture industry in BC have evolved, (ii) the implications that reactive regulatory outcomes could yield, and (iii) how facility siting could benefit from other potential processes toward the adoption of more precautionary policy. Section 2 outlines concepts relevant for understanding the evolution of policy and discusses the dynamics that occur between them to illustrate that policy is commonly shaped on a reactive basis. Section 3 introduces the context of salmon aquaculture facility siting putting emphasis on the social and environmental dimensions in which the industry is embedded. Next it outlines the nature of the regulatory framework for the salmon aquaculture industry in BC. Section 4 explores the factors that have influenced the

evolution of salmon aquaculture facility siting policy and discusses its disadvantages and trade-offs. Section 5 suggests three potential processes associated with facility siting that could benefit the salmon aquaculture industry toward the generation of more precautionary policy. The final section links the facility siting policy case back to the conceptual framework and provides conclusions.

2. Concepts for understanding the evolution of policy

How does policy generally evolve in the context of a new industry? This question arises from the need to understand the factors by which siting policy processes and outcomes were shaped in BC's salmon aquaculture case, where initial planning approaches neither projected an accelerated expansion nor conceived significant potential risks (which were almost unknown in the province at the time when the industry was first established there). In BC, siting salmon aquaculture facilities has been a controversial resource management issue at least since the 1980s. The federal and provincial governments introduced siting policy several years after the industry was established and during a process of rapid expansion. Siting fish farms became gradually more complex as numerous stakeholders reacted to this process. To date, there is no harmonization of siting criteria between policy makers or agreement between stakeholders about their meaning. It is expected that examining the factors that shaped such policy will contribute to offer insights for future policy decisions and to understand the rationales, disadvantages and implicit trade-offs behind their establishment.

This section suggests a theoretical framework based on a set of proposed mechanisms and factors that attempt to give an answer to the question suggested above. We develop this framework under the theoretical basis of governmental agenda setting, which describes how problems come to be addressed from a policy perspective (Kingdon, 1995). In addition, we make use of inductive reasoning to strengthen this framework by determining additional concepts. In doing so, we first performed a thorough literature review and analysis concerned with relevant siting policy documents (the most important being the Salmon Aquaculture Review, published by British Columbia's Environmental Assessment Office in 1997) and conducted a number of interviews (with government officials of the federal Department of Fisheries and Oceans and the provincial Ministry of Agriculture, Food and Fisheries, as well as individuals associated with research organizations and the industry itself). These interviews contributed to expand on the previous review and helped clarify the origin, evolution, purpose and rationale behind siting policy. The interviews were also thought to yield relevant information regarding actual siting policy outcomes. This fact contributed to shape the concepts associated with the theoretical framework.

The main argument of this framework asserts that regulatory processes and outcomes in the context of new industries may respond to factors that shape governmental agendas. This response ultimately illustrates how policy can behave reactively rather than in a precautionary manner.

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