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# International fisheries regime effectiveness—Activities and resources of key actors in the Southern Ocean



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#### ARTICLE INFO

#### ABSTRACT

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Keywords: IUU Fishing International environmental regime Southern Ocean CCAMLR Organizational importance Capacity-building Many contemporary environmental challenges are truly global and span several organizational and geographical borders. Research on international environmental regimes has, over the last couple of decades, identified several important factors that contribute to a more effective governance of global ecological resources, but few studies have addressed the different roles certain influential individual organizations play in determining regime effectiveness. Here we address this question by studying a relatively successful fishery governance system in the Southern Ocean. By drawing on insights from the research fields of common-pool resource management and international environmental regimes, we demonstrate that organizations engaged in certain combinations of activities, and that have access to certain combinations of resources stand out as important for regime effectiveness. In particular, collaboration with other flag states and being politically well-connected stand out as important explanatory factors. However, access to advanced technology, engagement in public campaigns, and being active in the field are other factors that, in different combinations, also seem to explain organizational importance. Furthermore, governmental and non-governmental organizations tend to perform different sets of activities and possess different resources, thereby complementing each other. Also, organizations doing similar things are often of different types with different mandates and objectives. This could contribute to improved adaptability and responsiveness to change at the larger regime level. Finally, we discuss some potential implications of our results for capacity-building in international environmental governance.

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#### 1. Introduction

International environmental regimes, designed to address many of the current most pressing environmental issues, have exhibited varying degree of success (Young, 2011). Research on such regimes has identified several important factors that contribute to effectiveness at the regime level (Miles et al., 2002; Breitmeier et al., 2006, 2011), but few studies have addressed the different roles that certain influential individual actors play in determining regime effectiveness. This study of a fishery governance system in the Southern Ocean aims to address this question by investigating which activities and resources the most influential actors involved in this relatively successful international environmental regime are engaged with.

Sustainable use of global fish stocks is arguably one of the most pressing challenges for sustainability (Pauly et al., 2002). Many, but not all, international (regional) fisheries regimes have been characterized as relative failures (Cullis-Suzuki and Pauly, 2010;

Young, 2011). Weak regulations and limited monitoring and enforcement of compliance often characterize such fisheries (Cullis-Suzuki and Pauly, 2010; Norse et al., 2012). Non-compliance severely reduces regime effectiveness and thus contributes to overexploitation and unsustainable resource use and, therefore, poses a key challenge for marine sustainability (United Nations General Assembly (UNGA), 2011). However, there are also positive examples of reduced non-compliance and improved fisheries governance (e.g. Agnew et al., 2009; Österblom and Sumaila, 2011). The regional management organization responsible for managing fish stocks in the Southern Ocean, the Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR, from now on referred to as the Commission), is often described as a positive example. Non-compliance or illegal, unregulated and unreported (IUU) fishing (see Sumaila et al., 2006) has been a critical barrier for accomplishing regime effectiveness in the area managed by the Commission (Österblom and Sumaila, 2011). This issue has threatened to result in the depletion of valuable fish stocks and globally threatened seabirds that the organization has a mandate to protect. Official documents of the Commission have continuously, since 1995, identified illegal, unregulated and unreported fishing as a substantial threat to the credibility of

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the entire regime (see Österblom and Sumaila, 2011). However, this threat has been effectively addressed, and with the exception of just a few years, the Commission has been able to steadily decrease illegal, unregulated and unreported fishing over the past twenty years (Österblom and Sumaila, 2011; Österblom and Bodin, 2012; Österblom and Folke, 2013). As a consequence, illegal, unregulated and unreported fishing has been reduced to less than 10% of its peak value in the mid 1990s (Österblom and Sumaila, 2011; Österblom and Bodin, 2012; Österblom and Bodin, 2012; Österblom and Folke, 2013). Analogous to what has been observed in effective regimes elsewhere (Young, 2011), a subset of deeply involved actors in the Commission constitutes a coalition of influential and therefore important actors (Österblom and Sumaila, 2011; Österblom and Bodin, 2012).

Our aim with this study is to (1) identify these key actors (i.e. organizations) seemingly crucial for ensuring regime effectiveness, (2) determine which activities and resources different actors have at their disposal, and (3) infer whether there are any relationships between which resources and activities the actors have at their disposal and their level of importance. We hypothesize that the key actors are important because they contribute with critical activities and resources, and that these activities and resources are critical since they provide the regime with certain functions that are needed for making it effective (cf. Breitmeier et al., 2006). We do not necessarily expect an important actor to be engaged in every important activity, nor do we assume it to possess all resources of importance. Rather, we expect that different key actors can contribute in different ways (or that actors can be important for different reasons). By investigating combinations of activities and resources, we explicitly allow for complex causalities to determine actors' importance (cf. Young, 2011). We do, however, not assume that these activities and resources necessarily encompass all relevant components for making this regime, as a whole, effective.

A secondary objective with this study is to develop an understanding of critical components for building capacity, on the level of individual actors/organizations, in order to make international environmental regimes more effective. Since countries with limited governance capacity typically suffer more substantially from fisheries' non-compliance (Agnew et al., 2009), the identification of critical activities and resources can also provide guidance as to how best to utilize limited resources in order to develop sufficient capacity for regime effectiveness.

#### 2. Theory

Recent research on international environmental regimes has identified that effectiveness is, among several other things, positively affected by the existence of a coalition of influential actors that are willing and able to act for the benefit of the regime (Young, 2011). Our objective here is to further examine how such subsets of important actors are contributing to regime effectiveness by examining characteristics (activities and resources) of such a subset of actors in a relatively successful regime (the Commission). Central in this study is thus the actor- and resource level perspective on international environmental regimes. Actors in this context can be either governmental or non-governmental organizations (Österblom and Bodin, 2012), i.e. representing the hybrid form of governance (Andonova et al., 2009) identified as increasingly important (Biermann, 2007; Young, 2011). However, although non-state actors are on the rise, states remain central for outcomes in international environmental governance (Breitmeier et al., 2006).

Given the critical importance of reducing illegal, unregulated and unreported fishing in order to maintain credibility and effectiveness of the Commission as a regional management organization (Österblom and Sumaila, 2011), we used every organization's perceived ability to help reduce illegal, unregulated and unreported fishing as a measure of organizational importance. We acknowledge that regime effectiveness is not only about reducing illegal, unregulated and unreported fishing. However, this issue has been, and continues to be an issue of great concern for the Commission. We therefore argue that the ability of the regime to effectively deal with illegal, unregulated and unreported fishing is a good proxy to measure the effectiveness of the regime (conversely, had illegal, unregulated and unreported fishing only been a minor concern, then the ability to deal with it would have been a less relevant measure of effectiveness).

If an organization's perceived level of importance in addressing illegal, unregulated and unreported fishing in the area managed by the Commission is the dependent variable we are trying to explain, then what are the explanatory variables of interest? Although there are numerous plausible explanatory variables of interest, the focus of this study is to investigate activities and resources that potentially make an organization important. Even with this more narrow focus, a theoretically informed selection of plausible explanatory variables is needed. Dietz et al. (2003) suggest that effective and adaptive governance of environmental resources should fulfill a number of general requirements. These requirements include: a) providing necessary information, b) dealing with conflict, c) inducing compliance with rules, d) providing physical, technical and institutional infrastructure and e) encouraging adaptation and change. We assume that effectively reducing illegal, unregulated and unreported fishing, in this case, overlaps with the notion of effectiveness by Dietz et al. (2003), and we therefore use this theoretical framework to define a set of contextrelevant activities and resources that captures these broad requirements (i.e. our explanatory variables, see Table 1). In doing so, we explicitly hypothesize that organizations meeting all or some combinations of these requirement would be perceived as important for regime effectiveness. It should here be emphasized that the specific research question we address is what makes an individual organization important in an effective regime? The theoretical and practical value of this research thus rests on the underlying assumption that since the studied regime is effective, the activities and resources of the identified most important organizations do not just form a random set of activities and resources; rather these are the activities and resources that the aforementioned critical coalition of actors in an effective regime are engaged with (cf. Young, 2011).

#### Table 1

Operationalization of Dietz et al.'s (2003) requirements (rows) in terms of context-relevant variables of interest for this study (columns). The crosses show how the requirements link to the explanatory variables.

	Field-related activities (FIELD)	Collaboration with flag states (FLAG)	Access to technology (TECH)	Political contacts (POLI)	Public awareness campaigns (PUBAVR)
Providing necessary information	×				
Dealing with conflict		×			
Inducing compliance with rules	×	×		×	
Providing physical, technical and institutional infrastructure			×		
Encouraging adaptation and change		×		×	×

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