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Navigating Towards Effective Fishery Management: Exploring the Impact of Imbalanced Burdens on Regime Legitimacy

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Abstract

Despite two decades of the Common Fishery Policy (CFP), the fishery politics of the European Union (EU) is considered a failure when it comes to securing fish-stocks. This paper explores reasons to this state of affairs by analysing the views and opinions among those subjected to regulations, namely professional fishermen (in Sweden). Since the capacity of any natural management regime to protect the resources depends on appropriators' compliance, the prospects of sustainable natural management depends on improved understanding of when and why appropriators consent, and ultimately comply, with a regulative policy. So, when do fishermen comply with a fishery management regime? Instrumental views give a straightforward explanation; when the risk of being caught is considered high (and the potential economic profit of rule-breaking is low). More normative views point at various "qualities of government" such as procedural fairness, distributive justice, trust and legitimacy, but is much less specified in terms of actual explanations to appropriators' actions. This paper adds a piece to the compliance puzzle by, relying on the model presented by Levi(1997), exploring the importance of 1) imbalanced burdens and 2) trust in authorities. Results confirm the importance of trust in authorities but contradict the idea that experiences of imbalance in burdens have a negative effect on legitimacy. Strikingly enough, fishermen who believe that other governments take greater concern in their fishing-fleets than the Swedish government, value the principles of Swedish fishery politics more.

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Why Accept State Regulations?

What make us accept and comply with regulations we are subjected to by the state? According to the instrumental approaches launched in the economic literature, it is mostly a matter of the sanctions that might follow if we chose not to. According to more normative approaches launched in political science and sociology this has also to do with a number of assessments we make concerning the process and outcome of policy: procedural fairness, distributive justice, trust and legitimacy. An implication of the normative approach is that with diverseness in implementation and exercise of policy, comes the risk of undermined legitimacy and a lower degree of compliance as a consequence. European fishery policy bears characteristics of diverseness in the sense that member-states may be more or less ambitious in implementing the Common Fishery Politics (CFP). According to the normative approach we should therefore expect the fishermen of EU member states to – once they have discovered the imbalances in burdens between fishermen of different nationalities – be less inclined both to trust the regime and to consider it as legitimate. The empirical findings presented in this paper, however, partly contradict these expectations.

European Fishery: A Common Policy with Imbalanced Burdens

Fish, as a global common, creates collective action problems on at least two levels. First, the short-term interest of each single fishing crew to maximize their catch runs contrary to the long term collective good of sustainable fishery and preserved fish-stocks. Second, while the collectively preferable strategy for all states would be to impose consistent regulations and supervision, each state has a short term interest to provide relatively soft conditions for their own fleet. The standard solution to escape these kinds of collective action problems is various forms of cooperation, such as setting up common rules and sanctions to prevent free-riding.¹ If one considers the general cooperative structure of the European Union (EU) and the issue-specific cooperation in the Common Fishery Politics (CFP), one might therefore expect that over-exploitation is a minor problem in European fishing-waters. Especially since the CFP has been running for two decades – long enough to develop efficient supra-national institutional arrangements to reduce incentives for states and fishing-crews to free-ride.

However, this is clearly not the case. The fishery politics of the European Union is severely criticized and judged a failure by several crucial actors such as the European Court of Auditors.² One important shortcoming revealed by a study carried out by the EU Commission indicates that there is a high degree of misreporting of catches. Inspections in the Baltic Sea 2005/2006 show that

¹ The risk of over-exploitation and degradation of common pool resources (CPR), such as fish stocks, has - of course - most famously been captured in Garrett Hardin's metaphor "The Tragedy of the Commons" where "freedom in the commons brings ruin to all" (Hardin 1968:1244).

² The European Court of Auditors. Särskild rapport nr 7/2007.

inspected vessels quite systematically report larger catches than non-inspected vessels.³ For Latvian vessels, the discrepancy was 8 percent, for Swedish vessels it was 21 percent, and for Polish vessels 48 percent. Assumingly, plain cheating is a core (although not necessarily the only) cause for this discrepancy in landings.

Another highlighted incongruity in the CFP is that it involves imbalances of the burdens imposed on fishermen. Such disproportions are potentially risky since they are assumed to negatively impact the legitimacy of the regime as well as the trust in authorities- at least among the offended groups.⁴ The theoretical foundations of this argument are further elaborated later in this paper, but it should be noted already at this stage that it is not the objective distribution of burdens that is in focus. Rather, the core of the matter is how fishermen perceive the balance and imbalance of burdens. The purpose of this paper is to test whether Swedish fishermen's *perceptions* of their relative burdens within the CFP impact their trust in the national fishery authorities (Swedish Board of Fisheries, SBF) and the degree to which they consider the regulations legitimate. Judging from earlier research and official reports, there are at least two sources of perceived imbalance in burdens.

Burden as governmental concern. The Common Fishery Policy (CFP) of the European Union involves a resource management element. The resource management aims at recovering and preserving the resource stocks through regulations such as catch limits, quotas, protected areas, restricted access zones, effort limits and gear restrictions. The shape and content of these regulations are the result of national governments negotiating with each other. Swedish fishermen have perceptions of in which degree the Swedish government takes the interests of the fishing industry into consideration in these negotiations. They evaluate how *concerned* their government is compared to how concerned other governments are for their fishing fleets.

The positions and strategies of a government depend on a number of factors such as the relative importance of fisheries, the size of the fishing fleet and the strength of the fishery lobby.⁵ The principle of relative stability set frames for the distributions of fishing rights and quotas among the member countries. Still, the bargaining about the TAC levels as such can, in the minds of fishermen, indicate whether their government shows low or high concern for the fishing industry.

Ever since the first days of the CFP, there have been substantial differences between countries when it comes to formulating the CFP and decides on regulations. In a study on the negotiations of the 2003 CFP reform, two main

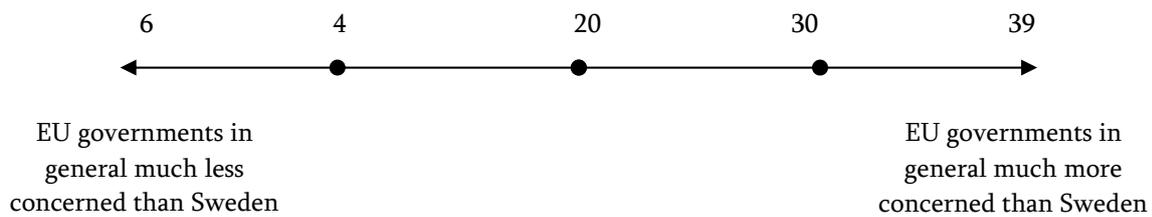
³ "Evaluation report in catch registration in Baltic-sea member states" (January, 2007).

⁴ European Court of Auditors. Särskild rapport 7/2007

⁵ Lequesne 2004, SLI 2006, Hasselberg 1997.

camps were identified.⁶ One camp is the “friends of the fishery”, consisting of mainly southern states such as Spain and France. This group of countries tends to resist restrictive measures and lowering of TACs, assumingly since political mechanisms instigate them to satisfy demands of fishermen organizations and to take socioeconomic factors into consideration. Another group is the “friends of the fish” with among others Germany and Sweden. This group tends to promote relatively restrictive policies, even though they also – of course – to some extent play by the demands of the fishing industry and take socioeconomic concerns.

Figure 1. Fishermen’s perceptions of the relative concern for the fisher profession among European governments compared to the Swedish government (percent in each category).



Notes: Data comes from a survey to Swedish fishermen. The exact question wording was “Compared to the Swedish government, do you think that the governments below take less, more or about the same concern to the fisher professions of their countries?” (A 5 degree scale from much less concern to much more concern). n=450

The picture of Sweden as a friend of the fish rather than a friend of the fishery receives quite strong support among Swedish fishermen. According to figure 1 above, the general opinion among Swedish fishers is that the governments of other EU countries are more concerned about the situation for their fishermen than the Swedish government is for Swedish fishermen. In this paper, we concentrate on the perceived differences between the Swedish government and EU governments *in general*.⁷ Figure 1 reveals that 69 percent (39+30) of the respondents are leaning toward the opinion that EU governments in general are more concerned and only 10 percent (6+4) indicate that the Swedish government is more concerned.⁸

Burden as intense monitoring. The other source of perceived imbalanced burdens is the intensity of monitoring. Even though the fisheries policies are common, the monitoring is a national responsibility. Member states are obliged to effectively monitor the compliance of CFP decisions in their territorial waters and in their Exclusive Economic Zone (EEZ). The problem is, however, that there are no specified authorized instructions on how to interpret and perform these tasks. In the absence of common monitoring norms, a diverse array of national systems

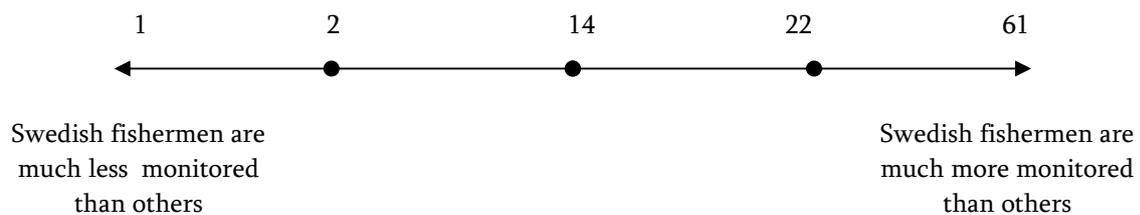
⁶ SLI 2006, see also Lequesne 2004.

⁷ Survey material also contains comparisons between the Swedish government and a number of individual countries.

⁸ The former social democratic government is perceived as somewhat less concerned than the current right-wing government which took office in 2006.

have emerged, each with its own characteristics, strategies, capacity and opportunities. Hence, EU fishermen subordinated to a common set of regulations confront different monitoring regimes. As stated in a report from the EU Court of Auditors, the disparate character of the monitoring system facilitates for fishermen to portray the monitoring methods of their own country as discriminating or unreasonably harsh.⁹ In the end, this might lower the trust in fishery authorities and the inclination to comply with CFP regulations.

Figure 2. Fishermen's perceptions of the relative extent of national monitoring systems (percent in each category).



Notes: The data come from a survey to Swedish fishermen. The item accounted for here was included in a battery in which the head question wording was “In general, do you consider Swedish fishermen to be monitored more, less or to fairly the same extent as the following professions?” Respondents answered using a 5 point scale ranging from (1) Swedish fishermen are much less monitored than fishermen of other EU countries, and (5) Swedish fishermen are much more monitored than fishermen of other EU countries. n=633. Respondents indicating “no opinion” excluded.

According to figure 2 above, it is no doubt how Swedish fishermen in general estimate the relative monitoring burdens of Swedish fishermen and fishermen of other nationalities; Swedes are more monitored than others. A whole 61 percent think that Swedes are *much* more monitored than others, and another 22 percent indicate that they are at least more monitored than other nationalities.¹⁰ It is interesting to study the figures above in the light of the debate of fishery politics in Sweden. The Swedish management system is considered equally inefficient as the CFP when it comes to securing fish-stocks. But in contrast to the numbers in figures 1 and 2, the more recent critique views the Swedish Board of Fisheries as an organization that represents rather than monitors Swedish fishermen.¹¹

Still, however, the national Swedish debate also elucidates strong disagreements between professional fishermen and the Swedish Board of Fisheries. In fact, fishermen seem to be at clinch with most other actors: They challenge scientists' estimations of stock-sizes, they are dissatisfied with quota sizes, with the

⁹ European Court of Auditors. Särskild rapport 7/2007

¹⁰ It is difficult to say whether these numbers are high or low. However, fishermen's evaluations of whether they are more or less monitored than Swedish farmers and forestry shows even larger perceived differences. 66% think that they are *much* more monitored than Swedish farmers, and 73% that they are *much* more monitored than the Swedish forestry.

¹¹ Lövin (2007).

supervision they are put under, and with the general – yet unfair – image of fishermen as notorious rule-breakers.¹² While this paper explores dynamics not directly related to economic conditions, it is obviously close at hand to suspect that their dissatisfaction with other parties, as well as the content of current policies, is strongly associated with the fact that Swedish fishermen suffer economically from the regulations and limitations of fishery-rights. Hence, the analysis to come will include economic explanations as well. The coming sections introduce our theoretical model and chisel out three connected hypotheses on how imbalanced burdens, trust and legitimacy are connected.

The Economic Model vs. Governing the Commons

To rely on the economic approach when trying to improve institutional capacity suggests a further focus on monitoring and credible (harsher) sanctions, since fishermen are likely to violate regulations as long as cheating is likely to lead to economic gains and unlikely to lead to punishment. However, starting with Elinor Ostrom, CPR-research presents rather disheartening news about the usefulness of top-run management systems.¹³ Ostrom has been followed by a number of studies, separable in a *co-operative* and a *co-management* approach, of how various institutional arrangements can produce successful management practises for fish stocks (and other CPRs).¹⁴ This has brought along a shift in the understanding of appropriators' behaviour in the sense that non-coercive compliance mechanisms are taken into account. These views suggest that also at conditions when non-compliance potentially leads to economic benefit, appropriators could still decide to comply with regulations on the basis of normative considerations about procedure, distributive justice and trustworthiness. Through the focus on normative considerations, these views more or less outspokenly assume that there is a link between whether appropriators consider policy as legitimate and their

¹² Illustrative examples can be found in *Göteborgs Posten* (2006-03-20). See also Rapporten från riksdagen 2007/08:RFR3.

¹³ Ostrom (1990). Ostrom criticises the two most commonly suggested ways out of the social dilemma; market solutions and interventions of an external authority. She objects both against the theoretical presumptions of the game-theoretic models as such, and to the treatment of “the tragedy” as an empirical fact. Moreover, she shows how appropriators within a geographically demarcated fishery can achieve a sustainable usage of the resource, by establishing local arrangements and agreements. Thus, when local users are responsible for the management of the fish stocks, one can expect that their enthusiasm to comply with the rules, as well as their capacity to adapt to changes in the eco-system, rises.

¹⁴ A specified distinction between these approaches can be made: In the co-operative perspective, rather than securing the resource through coercion, self-management depends on participants accepting regulations as just or legitimate. In the co-management perspective, even though this approach implies a larger involvement of state authorities, appropriators' influence on the decision-making process as well as their capacity to make and implement regulatory-systems is emphasized (see Honneland, 2002). See also Ostrom, Dietz & Stern (2003); Jentoft (2000); Nielsen (2003). For studies in a Swedish context, see for example Rova (2004) and Píríz (2004). See also Honneland (2002).

inclination to comply with regulations.¹⁵ Considering that this normative (as oppose to instrumental) view also seems to inform reform proposals of policy, the shortage of clear-cut empirical support is somewhat surprising. In the next section, we return to the seminal work on citizens' consent carried out by Margret Levi, in order to set up a model useful for the field of fishery management.

Conditions of Rule Acceptance

In contestation to the economic model of compliance and institutional effectiveness, stands a literature in political science and sociology that stresses normative matters of compliance.¹⁶ A distinction can be made between theories that underline the importance of *procedural justice* on the one hand, and *distributive justice* on the other, where the former focus on matters such as whether one had a say in the process and the latter rather concerns the fairness of the outcome of the decision. Margret Levi(1997) makes an influential contribution on the matter of compliance that actually touches upon both these aspects. She presents a model where compliance is dependent on appropriators' assessments of 1) government trustworthiness, and 2) ethical reciprocity.¹⁷ Levi argues that citizens, before they decide whether to comply with policy, evaluate the trustworthiness of the government on the basis of the capacity of the government (in the past as well as the future) to make credible commitments, and on whether the procedures for making and implementing policy meets prevailing standards of fairness. The evaluation of ethical reciprocity concerns whether other members of the community also contribute; If a citizen concludes that others do not keep their part of the agreement, this citizen's "contingent consent" is likely to break down.¹⁸ Thus, Levi's line of reasoning includes a definitional distinction between compliance and consent.

Consent and compliance can be seen as related in the sense that not consenting with a policy might increase the likelihood of non-compliant behaviour. Still, they are not necessarily the same, since one might comply with regulations without necessarily consenting with it - for instance because non-compliant behaviour simply might inherit the risk of sanctions. However, Levi (1997) argues that non-compliance is more serious than non-consent in the sense that it is a behavioural response which raises the cost of implementation, and thereby always challenges policy.¹⁹ Thus, not consenting with policy is something one may do silently, without taking action. Levi escapes the mistake to take passivity as a sign of

¹⁵ Levi (1997); Dietz et al (2003); Grimes (2006); Jentoft (1999).

¹⁶ Eggert & Ellegård (2002); Levi (1997); Dietz et al (2003); Ostrom (2005); Gezelius (2002, 2004, 2006).

¹⁷ Levi (1997:23-26). See also Grimes (2006:17). In addition, there are theoretical arguments about the impact of norms as important to understand prevailing levels of compliance with state regulations. See Gezelius (2002, 2004, 2006).

¹⁸ Levi (1997:24f).

¹⁹ Levi (1997:17).

consent, by the specification “contingent consent”; constituted through trust in government and ethical reciprocity. She argues that contingent consent leads to compliance also in the absence of strong ideological conviction and/or lack of material incentives. Thereby, what Levi refers to as contingent consent seems largely similar to legitimacy, at least according to a comprehensive understanding of legitimacy as a “reservoir of loyalty”.²⁰

Legitimacy. What legitimacy actually means, and how institutions and policy become legitimate, are contested issues. For instance, there is the question of whether legitimacy is “in the eyes of the beholder”, or an intrinsic property of the object as such.²¹ There is also the complex issue of legitimacy as dependent on both legality and morality; legitimacy is not necessarily established in the moment a specific order is made into a law (neither are all normative guidelines considered legitimate).²² In fact, the normative view of compliance underlines the circumstance that non-compliance occurs also in the presence of laws, but suggests that this could be in response to a normative devaluation of procedures related to, and content of policy. Thus, the crux is to establish whether non-compliance takes place as a response only to economic incentives, or if the normative considerations contributes to make compliant behaviour more or less likely. According to Levi, the most crucial normative assessments concerns 1) government’s trustworthiness and 2) ethical reciprocity. Studying Swedish fishermen in the context of the CFP, we suggest that these normative assessments may be specified as 1) burden as governmental concern, and 2) burden as monitoring. Our line of reasoning is presented in the following.

Trust & Fairness. The management-approaches brought the concept of trust into the analysis of compliance and regime efficiency in CPR.²³ Trust among individuals in a group (or between groups) is expected to have a positive impact on the level of compliance in the sense that people become more inclined to contribute to the common good. If each competing party trusts that the competitors will follow the rules of the common use of a natural resource, then this presence of trust will increase the likeliness that all parties will comply and thus generating more collective goods in the longer term. To quote Ostrom “No one wants to be a ‘sucker’ keeping a promise that everyone else is breaking”.²⁴ Thus a firm belief that no one else follows prevailing regulations undermines an

²⁰ Tyler (1990); see also Nielsen(2000:427).

²¹ Jentoft (2000:143).

²² Jentoft (2000:142). See also Nielsen (2003).

²³ Ostrom (1990); see also Putnam (1993); Offe (1999).

²⁴ Trust among (unrelated) individuals, has also proven important for peoples’ willingness to contribute to the general welfare, e.g., by paying tax. See Torgler (2004); Roth *et al.* (1989). Yamagishi & Yamagishi (1994); Scholz & Lubell (1998); Torgler (2003a, 2003b, 2004).C.f., Uslaner 2002 for an illuminating more general discussion about similarities and differences between individual-level trust among strangers and within social groups (e.g., Hells Angels).

already weak incentive to spare the resource for the future. This implies that in order to consider policy as legitimate, an assessment concerning ethical reciprocity should lead to the conclusion that there is a fair balance in burdens between oneself and others also subjected to the regulations of a policy.

Levi's model of compliance keeps separate the normative considerations about relevant political actors' trustworthiness and fairness in burdens. Citizens are assumed to evaluate on the one hand how reliable their own government is and, on the other hand, the extent to which others also are subjected to regulations. In the context of the CFP, we rather suggest that these normative considerations are integrated in the sense that the evaluations Swedish fishermen make about the government's trustworthiness actually concerns the matter of ethical reciprocity in relationship to fishermen of other EU-nationalities. Thus, if there is a negative interpretation of Swedish fishery policy, characterised as "friendship with the fish" rather than "friendship of the fishery", Swedish fishermen might experience an imbalance in burdens in relationship to fishermen of other EU-nationalities. This could undermine the legitimacy of policy.

In addition to these kinds of normative assessments, with trustworthiness and ethical reciprocity integrated, there is of course also the matter of whether fishermen trust the authorities of the regime. Empirical findings suggest that trust in institutions, including the legal system, the government and public officials, has a significant positive effect on policy compliance.²⁵ The trustworthiness of an institution among citizens depends on whether it has, for instance, emerged properly, is founded on appropriate knowledge and principles, is adequately administered and the effects clearly designated.²⁶ On the other hand, if a citizen has reasons to believe that the institution performs badly, this is expected to lead to a decline in trust that also might have an impact on whether the institution is considered legitimate.

Theoretical Specifications: Imbalanced Burdens, Trust and Legitimacy

This article has so far searched for available theoretical understandings – complementing or competing with the economic model – of appropriators' compliance with state regulations. Relying on Levi's model of compliance we suggest first, that contingent consent is largely similar to regime legitimacy and second, that as potential causes of regime legitimacy, assessments of governments trustworthiness and ethical reciprocity are integrated. Thus, when Swedish fishermen evaluate Swedish fishery politics in the context of the CFP, they take into account their share of the burden in relation to fishermen of other nationalities. This could have an impact on the legitimacy of the regime. Moreover, this assessment could also impact whether they consider the regime as

²⁵ See e.g. Scholz & Lubell (1998); Torgler (2003a, 2003b, 2004).

²⁶ Rothstein(2003).

trustworthy. Finally, on the basis of previous studies on the importance of trust, we should expect an independent effect of trust in authorities and the extent to which the regime is considered legitimate.

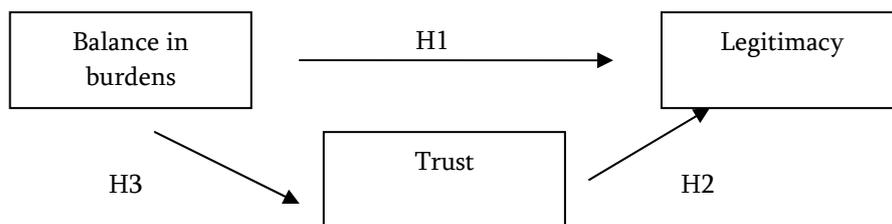
Our three hypotheses can be specified as follows:

H1: Assessments of whether government reassures ethical reciprocity (i.e. balance in burdens) impact the legitimacy of the regime.

H2: Trust in authorities impact the legitimacy of the regime.

H3: Assessments of whether government reassures ethical reciprocity (i.e. balance in burdens) impact the legitimacy of the regime. Hence, some of the effects regarding ethical reciprocity on legitimacy are channeled through trust in the authorities.

Figure 3. Graphical summary of the hypothesized relationships between assessments about balance in burdens, trust and legitimacy. Each hypothesis is illustrated with an arrow.



Methods, Measures and Model Specifications

The empirical data consist of a survey to all 1863 licensed professional fishermen in Sweden.²⁷ The overall response rate was 48%. To evaluate the support for our hypotheses and, in more general terms, elaborate the relationship between perceived relative burdens, trust and legitimacy we conducted one path analysis for each of the relative burden indicators *governmental concern* and *monitoring*. The path analysis helps us to capture the direct, indirect and total effects of perceived relative burden.

Model specification. We ran two OLS regressions per burden factor, one with Legitimacy (LEGITIMACY) as dependent variable, and one with trust in the Swedish Board of Fisheries (TRUST) as dependent variable. Apart from these variables and the variables measuring perceived imbalance in burdens, the

²⁷ Number refers to the time of the surveying period, fall 2007.

multivariate OLS models take into account the control variables economy and general trust. *Economy* is included to evaluate the effects of imbalanced burden under control for the relative economic situation of each respondent. To capture the effects of regime specific trust, we also remove the effects of political trust in general, which is done with the variable *general trust*. It refers to the general level of trust in political institutions other than the key fishery authority in Sweden, which is the Swedish Board of Fisheries (SBF).

To capture the direct effect of respective burden factor on legitimacy (the upper arrow - H1 - in the causal model), and the effect of trust on legitimacy (the upwards sloping far right arrow - H2 - in the causal model) we ran an OLS model:

$$\text{LEGITIMACY} = b_0 + b_1 \text{RELATIVE BURDEN} + b_2 \text{TRUST} + b_3 \text{ECONOMY} + b_4 \text{GENERAL TRUST} + e$$

To be able to capture the indirect effect of perceived relative burden on legitimacy, i.e the effects of burden channelled through trust, we need to evaluate the effect of perceived burden on trust in the Swedish Board of Fisheries (SBF) (the downward sloping arrow - H3 - in the causal model). Hence, we ran an OLS model:

$$\text{TRUST} = b_0 + b_1 \text{RELATIVE BURDEN} + b_3 \text{ECONOMY} + b_4 \text{GENERAL TRUST} + e$$

The total effect of perceived relative burdens on legitimacy is equal to the direct effect (H1) plus the indirect effect. The indirect effect equals the product of arrows H3 and H2.

Variable measurements. Legitimacy was measured with a three item summated index, transformed into a 0-10 scale. Two of the items indicate the degree to which respondents think that regulations fulfil core tasks of the regime. The third concerns whether respondents think that regulations are founded on reasonable estimations of fish stock conditions.

The items indicating task fulfilment are drawn from the question *How important is the following reasons for you to comply with existing regulations?* We use respondents' ratings of the sub-alternatives "The regulations contribute to a sustainable fishery" and "The regulations contribute to protect marine environments". The rating scale ranges from (1) "Completely unimportant reason" to (5) "Very important reason". The third index item was drawn from the question *How acceptable is the following reasons for rule infringements?* and the ratings of the sub-alternative "The rules are founded upon incorrect estimations of stock sizes". The rating scale ranges from (1) "Completely unacceptable reason" to (5) "Completely acceptable reason". The responses on this last item were reversed in order to fit the numerical logics of the other two items. High points on the three items hence indicate a high level of legitimacy.

Regime specific trust was measured as trust in the Swedish Board of Fisheries (SBF). Respondents rated their trust on a five point scale from “very low” to “very high” trust. High numbers corresponds to high levels of trust and vice versa. The exact wording of the head question was *What is your trust in the way in which the following societal institutions and groups perform their work?*

The “imbalanced burden” variables measure whether respondents feel more or less monitored than fellow fishermen from other countries, and whether they perceive that their government takes more or less concern than other governments to the fishery. The perceptions of relative monitoring were measured with the question *In general, do you consider Swedish fishermen to be monitored more, less or to fairly the same extent as the following professions?* Here, we use ratings (5-point scale) of the sub-alternative “Fishermen of other EU-countries”. The perceptions of relative governmental concern was measured with the question *Compared to the Swedish government, do the governments below take less, more or fairly the same concern to the interests of their professional fishermen?* In this paper, we use the comparisons (5-point scale) between the Swedish government and the sub-alternative “EU-countries in general”.

The variable “general trust” is an index composed by measurements of trust in the law courts, banks, the home town authority of each respondent, the Swedish Social Insurance Agency and the Swedish government. Respondents were asked to rate their trust on a five point scale from “very low” to “very high” trust. High numbers correspond to high levels of trust and vice versa. The exact wording of the head question was *What is your trust in the way in which the following societal institutions and groups perform their work?*

Economy was measured with respondents’ answers to the question *How do you assess you economic situation compared to the average professional fisherman?* Respondents were asked to rate their situation on a five point scale ranging from “much worse than average” to “much better than average”.

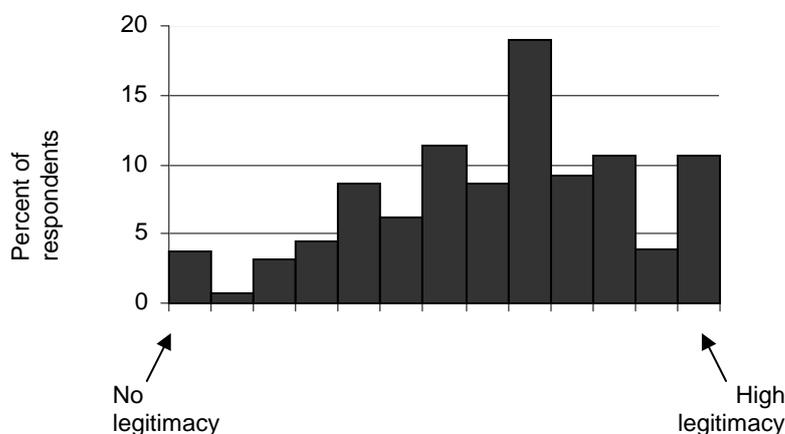
Mapping Regime Legitimacy and Institutional Trust

As we have discussed in the theoretical sections, legitimacy seems to be a key element in an effective fishery management regime. It is assumed to raise the levels of compliance, and lower the need for coercive measures. While we acknowledge the link between legitimacy and compliance/effectiveness in theoretical terms, our empirical focus is on the creation of legitimacy. More exactly, we investigate the link between perceived fairness of burdens, institutional trust and legitimacy. We measure legitimacy by an index composed of three questions. Two of them estimate the degree to which respondents think that regulations fulfil core tasks of the regime. The third concerns whether respondents

think that regulations are founded on reasonable estimations of fish stock conditions.²⁸

As a group, Swedish fishermen seem to consider the regime as at least fairly legitimate. Figure 4 below shows that the centre of gravity in the aggregated legitimacy assessments is in the middle of the range, but slightly leaning towards the right hand, high legitimacy flank. On a (continuous) scale from zero to ten, the average fisherman awards the regime with six legitimacy points.

Figure 4. The legitimacy of the fishery regime among Swedish fishermen. (percent of respondents on each scale step)

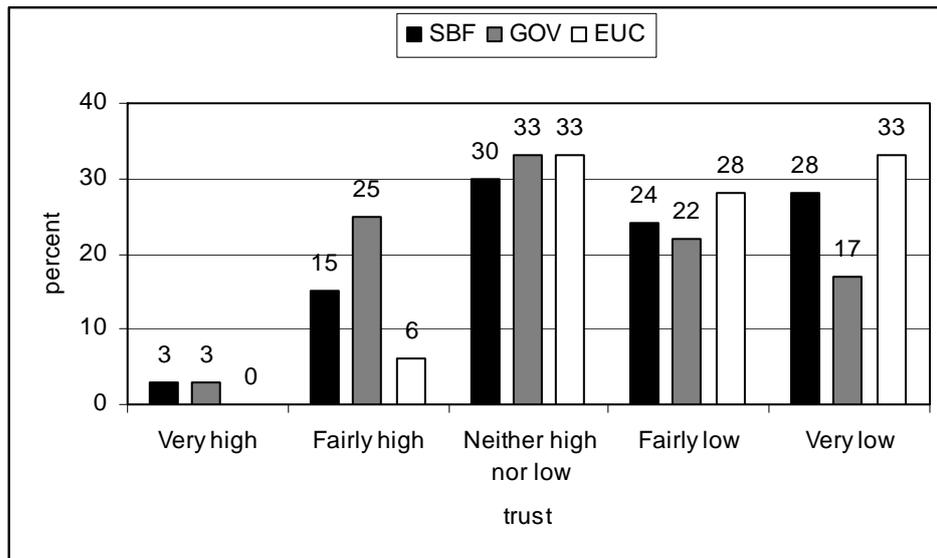


Notes: The figure reports the distribution of respondents along a legitimacy scale. Mean value=6. n=595. For information on the index construction, see section on Methods and Measures.

The theoretical model of this paper states that legitimacy is dependent on trust in authorities (H2). The more a fisherman trust regime institutions, the higher the probability that he considers the regime to be legitimate. A closer look at fishermen’s trust for fishery institutions such as the Swedish Board of Fisheries (SBF) and the EU Commission reveals that the proportion of low-trusters by far exceeds the share of high-trusters. The balance of opinion, i.e. the proportion of respondents indicating *fairly high* or *very high* trust minus the proportion indicating *very low* or *fairly low* trust is a useful tool to capture the general opinion in the Swedish fishery corps. As reported in figure 5 below, the least trusted institution is the EU Commission where the balance of opinion is – 55 (6-61). Nor is the numbers for the Swedish Board of Fisheries (SBF) pleasant reading for its representatives with a balance of -34 (18-52). The corresponding numbers for the Swedish government are -11 (28-39).

²⁸ For exact wordings of the questions, see the previous section on measures and methods.

Figure 5. Fishermen’s trust in SBF, EU Commission and the Swedish government (percent in each category)



Notes: The data come from a survey to Swedish fishermen. Trust was measured through the question “How much do you trust the manner in which the following societal institutions manage their work?” Key to abbreviations: SBF= Swedish Board of Fisheries; GOV=government; EUC= European Commission. n=SBF 769; GOV 771; EUC 768

Trust in SBF is used as the intermediate variable in our causal model, and the trust in government is included in the index of general trust used as a control variable in our estimations of how imbalanced burdens, trust and legitimacy relate to each other. Having mapped out the aggregated levels of trust and regime legitimacy, we now turn to the analysis of these relationships.

How Relative Burdens Impact Legitimacy

The results suggest mixed support for our package of hypotheses. To begin with, the actual “imbalanced burden effects” depend on which of the measures (monitoring or concern) we use. There is no support at all for the idea that the perceived relative degree of monitoring has negative effects on legitimacy. Fishermen perceiving that they are more monitored than other EU fishermen regard the regime just as legitimate as the fishermen who do not feel more monitored than others. As is indicated in table 1 below, the total effect of perceived relative monitoring is zero, and also statistically insignificant.

Table 1. Models of burdens effects on legitimacy (unstandardized OLS coefficients)

	Dependent= legitimacy Burden=Monitoring			Dependent=legitimacy Burden= concern		
	Direct	Indirect	Total	Direct	Indirect	Total
Bivariate b	.08 (.57)			.27 (.02)		
Monitoring	.04 (.75)	-.04	0			
Concern				.25 (.04)	-.03	.22
SBF Trust	.42 (.000)			.42 (.001)		
Economy	-.07 (.63)			-.12 (.42)		
General trust	-.02 (.65)			-.005 (.91)		
Constant	5.2			4.4		
Adjusted R ²	.02			.03		
SEE	2.6			2.5		

Notes: The table reports bivariate and multivariate unstandardized OLS coefficients. The effects of the two versions of imbalanced burdens are split into direct, indirect and total effects. Entries are coefficients and model performance statistics. P-values are in parenthesis. For information on coding procedures, see section on Methods, Measures and Model Specification.

While the perceptions of relative monitoring seem irrelevant for understanding legitimacy, the perceptions of relative governmental concern have at least some such effects. Indeed, the R^2 – the proportion of explained variance – is no more than .03, indicating that the model explains about three percent of all variance in respondents' grading of regime legitimacy. However, in this case we are more interested in the effects of individual variables. The bivariate effect of perceived relative concern on legitimacy was .27 (upper section of table 1 above).²⁹ The coefficient tells us that Swedish fishermen thinking that other governments are more concerned for their fleet tend to regard the regime as more legitimate than those thinking that the Swedish government is more concerned than others. Now, the question is whether this effect withstands when we control for economy and general trust.

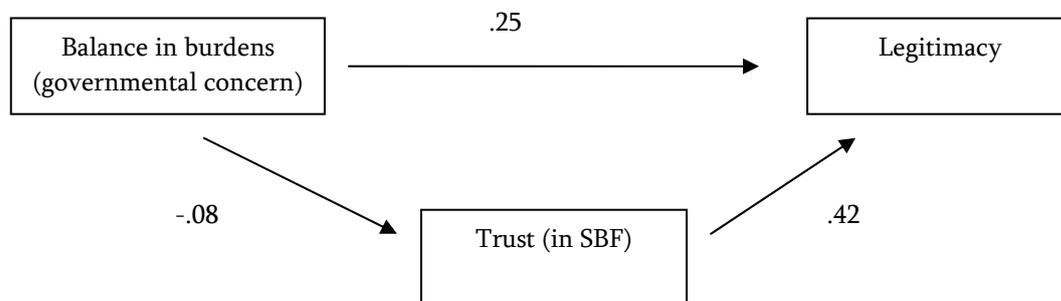
The lower section of table 1 reports the results of a multivariate OLS model with *relative concern*, *trust in SBF*, *economy* and *general trust* as independent variables. It turns out that the relative concern effect is marginally lowered, but is still substantial and statistically significant. Hence, also under control for the relative economic situation of each fisherman, their trust in SBF and their general trust, the opinion on the relative concern issue has a direct effect on their view on regime legitimacy ($b=.25$). Since the indirect effects channelled through trust are negative, the total effect come down at $+.22$. Interestingly enough, the direct and total effects are positive, meaning that those who consider the Swedish government to be less concerned for the fishery than others actually have a more positive view on the legitimacy of the regime. The direction of the causality hence seems to go in the “wrong” direction.

²⁹ The correlation coefficient (τ) for the *bivariate* relationship between perceived relative concern and legitimacy was .11; ($p=.01$) (not presented in the table).

The subjective perception of belonging to the fleet of a “friends of the fish” country does not seem to lower regime legitimacy. More analyses are required to understand this pattern, but we can note that the result also runs contrary to the ideas that plain self interest guides the evaluations of the regime. The offended fishermen do not necessarily consider the regime to be illegitimate. We can also note that the chairman of the Swedish Fishermen’s Interest Organization (SFR) might have a point when he questions the media-image of Swedish fishermen as “zero-rating pirates” – only interested in their personal gain.³⁰

The perceived imbalance in governmental concern has some negative causal effects, however. Figure 6 below summarises the path analysis of how perceived relative concern impacts legitimacy. We see that while the relative concern has a positive effect on legitimacy, it has a negative effect on trust in SBF (multivariate $b=-.08$). Hence, those who think that other governments are better at taking the interests of their fishing industries into consideration tend to perceive the regime as *more* legitimate, but also to have *lower* trust in the key national fishery authority. It seems hence that it is the fishery authorities and not the regime regulations that take the blow from fishermen offended by imbalanced burdens. It is also interesting to note that imbalance in terms of monitoring has a negative effect on trust. ($b=-.09$; $p=.09$, not presented in figure or table). The two imbalance in burden factors hence go hand in hand in this regard.

Figure 6. Graphic summary of path analysis. Effect of perceived relative governmental concern on legitimacy.



Notes: Entries are b-values. All coefficients statistically significant at the .05 level.

The intermediate variable in the model, trust, seems to effect legitimacy in accordance with our hypothesis H2 to ($b=.42$). Fishermen with a higher degree of confidence in the Swedish Board of Fisheries (SBF), are more prone than their less trusting fellows to consider the regime as legitimate. Even though the effects are not overwhelmingly high, the results must be regarded as a support for the

³⁰ Yrkesfiskaren, September 7, 2007, p.6.

hypothesis. In this regard, the results are in line with earlier research that point at trust as important for upholding the legitimacy of a regime.

Summary and conclusions

The empirical findings give mixed support to the model. The most intriguing result concerns the impact of fishermen's assessments regarding the balance in burden in relationship to fishermen of other nationalities. Instead of having a negative impact on the legitimacy of the regime, fishermen that consider that the Swedish government is less concerned with their national fleet are more inclined to consider the regime as legitimate. Moreover, diverseness in monitoring between countries do not have an impact on regime legitimacy. The factor that runs in the expected direction is trust in authorities, which is shown to impact the legitimacy of the regime. Moreover, the imbalance in burden is of some importance in order to understand fishermen's trust in authorities.

References

Ellegård, Anders & Håkan Eggert (2002) *Mot En Ny Förvaltning Av Fisket: Enkät Om Yrkesfiskarens Inställning Till Reglering Och Kontroll*. Göteborg. Department for Interdisciplinary Studies of the Human Condition, Human Ecology Section

Gezelius, Stig (2002) "Do Norms Count? State Regulation and Compliance in a Norwegian Fishing Community" *Acta Sociologica*. Vol 45. p 305-314.

Gezelius, Stig (2004) "Food, Money, and Morals: Compliance Among Natural Resource Harvesters" *Human Ecology*. Vol 32, no 5, p 615-633.

Gezelius, Stig (2006) "Monitoring Fishing Mortality: Compliance in Norwegian Offshore Fisheries" *Marine Policy*. Vol 30, p 462-469.

Grimes, Marcia (2005) *Democracy's Infrastructure: The Role of Procedural Fairness in Fostering Consent*. Göteborg. Department of Political Science.

Hardin, Garret (1968) "The Tragedy of the Commons". *Science* 162.

Hasselberg, Ylva (1997) "Mål och makt i svensk fiskeripolitik" i *Fisk och fusk*. Stockholm. ESO

Honneland, Geir (2000) *Compliance in the Barents Sea Fisheries*. Oslo. Department of Political Science.

Jentoft, Svein (2000) "Legitimacy and Disappointment in Fisheries Management", *Marine Policy*, Vol. 24:141-148.

Lequesne, Christian (2004) *The Politics of Fisheries in the European Union*. Manchester. Manchester University Press.

Levi, Margaret (1997) *Consent, Dissent and Patriotism*. Cambridge. Cambridge University Press

Lövin, Isabella (2007) *Tyst Hav*. Stockholm. Ordfront förlag.

Nielsen, Jesper Raakjaer (2003) "An Analytical Framework for Studying: Compliance and Legitimacy in Fisheries Management", *Marine Policy*, Vol. 27: 425-432.

Offe, C. (1999). "Trust and Knowledge, Rules and Decisions: Exploring a Difficult Conceptual Terrain." In Warren, Mark. (ed) *Democracy and Trust*. Cambridge: Cambridge University Press.

Ostrom, Elinor (1990) *Governing the Commons : The Evolution of Institutions for Collective Action*. Cambridge: Cambridge Univ. Press

Ostrom, Elinor (2005) *Understanding Institutional Diversity*. Princeton: Princeton University Press

Ostrom, Elinor, Thomas Dietz & Paul C. Stern (2003) "The Struggle to Govern the Commons" *Science* 203.

Putnam, Robert D. et al (1993) *Making Democracy Work Civic Traditions in Modern Italy*. Princeton, N.J.: Princeton University Press

Roth, J.A., Scholz, J.T. & Witte, A.D. (1989) *Taxpayer Compliance: An Agenda for Research*, Philadelphia, University of Pennsylvania Press

Rothstein, Bo (2003) *Sociala Fällor Och Tillitens Problem*. Kristianstad: SNS Förlag.

Rova, Carl (2004) *Flipping the Pyramid : Lessons from Converting Top-Down Management of Bleak-Roe Fishing*. Luleå: Luleå University of Technology

Scholz, J. T. and Lubell, M. (1998) "Trust and taxpaying: Testing the heuristic approach to collective action," *American Journal of Political Science* 42 (2): 398-417.

Torgler, B. (2003a) "Tax Morale, Rule Governed Behaviour and Trust," *Constitutional Political Economy* 14: 119-140.

Torgler, B. (2003b) "To evade taxes or not to evade: that is the question," *The Journal of Socioeconomics* 33: 283-302.

Torgler, B. (2004) "Tax Morale, Trust and Corruption: Empirical Evidence from Transition Countries," *CREMA Working Paper* No. 2004-05, Center for Research in Economics, Management and the Arts, Basel.

Torgler, B. (2004) "Tax Morale, Trust and Corruption: Empirical Evidence from Transition Countries," *CREMA Working Paper* No. 2004-05, Center for Research in Economics, Management and the Arts, Basel.

Torgler, B. and Schneider, F. (2005) "Attitudes Towards Paying Taxes in Austria: An Empirical Analysis," *Empirica* 32(2): 231-250.

Uslaner, Eric M (2002) *The Moral Foundation of Trust*. Cambridge, Cambridge University Press.

Yamagishi, T. & Yamagishi, M. (1994) "Trust and Commitment in the United States and Japan," *Motivation and Emotion* 18: 129-166.

Other sources

European Court of Auditors. Särskild rapport 7/2007.

Rapporter från riksdagen 2007/08: RFR3. *Uppföljning av de fiskepolitiska insatsernas resultat och konsekvenser för företag inom fiskeområdet*. Miljö och jordbruksutskottet.

SLI, Livsmedelsekonomiska institutet (2006) *En politik för fisken eller fisket? En studie av EU förhandlingarna om 2003 års reform av fiskeripolitiken*. Lund. Livsmedelsekonomiska institutet.