

“Ola I Ka Wai”: Investigating the Department of Defense Response to the Red Hill Bulk Fuel Storage Facility Water Crisis

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Submitted to
Central European University
Department of Public Policy

*In partial fulfillment for the degree of
Master of Arts in International Public Affairs*

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Vienna, Austria

2024

Author Declaration

I, the undersigned, Alison Gray, candidate for the Master of Arts in International Public Affairs, declare herewith that the present thesis is exclusively my own work, based on my research. All sources have been properly credited in the text, notes, and the bibliography. I declare that no unidentified and illegitimate use was made of the work of others, and no part of the thesis infringes on any person's or institution's copyright. Furthermore, I declare that no part of this thesis has been generated using artificial intelligence (ChatGPT). I also declare that no part of the thesis has been submitted in this form as coursework for credits or to another institution of higher education for an academic degree.

Date: June 3, 2024

Name: Alison Gray

Signature:

A handwritten signature in cursive script that reads "Alison Gray". The signature is written in black ink and is positioned below the "Signature:" label.

Abstract

U.S. military policy studies rarely occur in a domestic context, often focusing on international security instead. However, domestic events can prompt the U.S. Department of Defense (DoD) to engage in policy-making, especially when the military harms the population it is supposed to protect (Feaver 1999). When the U.S. Navy's Red Hill Bulk Storage Fuel Facility sprung a leak that contaminated the drinking water and poisoned residents on O'ahu, Hawai'i in November 2021, the DoD responded by decommissioning the facility months later. This was an unusual response in that the DoD repealed a decades-long policy in a geostrategically critical location at a relatively swift pace.

This thesis studies this case of DoD policy change using a case-centric process tracing methodology and hypothesizes that civil society actions caused the policy change. Through analyzing qualitative interviews, public government documents, local media coverage, and civil society publications, the hypothesized mechanisms were confirmed, demonstrating that civil society was key in the DoD decision to shut down and defuel Red Hill, and, more generally, indicating that civil society is capable of influencing DoD policy change.

Acknowledgements

Thank you to Dr. Florian Weiler, Dr. Inna Melnykovska, and Dr. Evelyne Hübscher; I am incredibly thankful for your guidance and support! Mahalo to my interviewees who were so generous with their time to share their stories with me, and thank you to Mom, Dad, and my Vienna community.

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Introduction

In native Hawaiian culture, *wai*, or freshwater, is sacred. It was, and remains, the basis of survival for both people and the ‘āina¹ (Puleloa 2014). When the United States government illegally annexed Hawai‘i in 1898, the island’s land and resources were taken and channeled toward military use (Tuteur 2021). After the bombing of Pearl Harbor on December 7, 1941, Hawai‘i became a critical military stronghold in the Pacific theater during World War II. It was during this time that the U.S. Department of Defense developed the area called Kapūkaki, near Pearl Harbor, into the Red Hill Bulk Fuel Storage Facility (American Society of Civil Engineers 2024; McCullough 2022).

Decades later, in November 2021, the Red Hill fuel facility sprung a leak that seeped into an aquifer and contaminated the drinking water supply (McCullough 2022). Tens of thousands of Hawai‘i residents were affected, and the event deepened the distrust between the military and many native and local Hawaiians (Sinco Kelleher 2022). One citizen was quoted in the local media saying, “This has been the most egregious assault on a public trust resource in the history of Hawai‘i” (Sinco Kelleher 2022). Local activists took up the phrase “*ola i ka wai*,” or “water is life,” in protests calling for the closure and defueling of Red Hill (Figure 1). Their demands were later realized. In March 2022, U.S. Secretary of Defense Lloyd J. Austin III formally announced the closure and defueling of Red Hill.

¹ Ōlelo Hawai‘i for “land.”



Figure 1. Instagram posts from activist groups. Sources: LAING Hawai‘i 2022; O‘ahu Water Protectors 2021.

Research Question and Relevance

This thesis addresses the following research question: why did the Department of Defense decide to shut down and defuel the Red Hill storage facility? To investigate this question, the qualitative methodology of process tracing will be used to unpack the causal mechanisms that led to this outcome. It is hypothesized that the causal mechanisms linking this case of policy failure and policy change were actions by civil society.

This topic is a compelling research avenue for several reasons. First, contemporary understandings of the Department of Defense (DoD) would assume that the DoD would be indifferent to domestic social or environmental concerns. The DoD’s purpose, after all, is to command military forces for national security. Yet, the DoD took extensive actions to remedy the situation, spending millions to address the fallout. Second, DoD policy change is an area largely understudied by public policy scholars. This could be due to the idea that the DoD is simply an extension of the executive branch or an institution with closer ties to foreign policy than domestic policy and therefore more appropriate for international relations studies. Regardless, the topic deserves examination from a policy perspective. Third, the impact of non-governmental actors in affecting policy change from the “bottom-up” is paid

little attention. Identifying how these actors' seemingly small actions create larger policy implications is crucial to better understanding the policymaking process.

By taking the case of Red Hill to analyze DoD policy processes in times of crisis, this thesis aims to shed light on the DoD as a policymaking institution and its relationship with civil society. It offers a foundation for further research to study similar cases of U.S. military policy change domestically and abroad.

Case Background

In November 2021, over 90,000 residents living on and near the Pearl Harbor-Hickam Air Force Base on O'ahu, Hawai'i, had their drinking water supply contaminated with petroleum product (Yamaguchi and Breen 2023). The contamination stemmed from a leak at the U.S. Navy's Red Hill Bulk Fuel Storage Facility, established in 1943 (American Society of Civil Engineers 2024). Initially, the Navy claimed the water was safe to use, but as more people fell ill after consuming tap water, it became evident that a significant problem existed (McCullough 2022). After conducting tests, the Hawai'i Department of Health found that the Red Hill shaft drinking water contained petroleum levels that were 350 times above the standard safe level (Hawai'i State Department of Health 2021). Approximately 2,000 individuals became sick, and some continue to experience ongoing symptoms since the incident (Yamaguchi and Breen 2023).

When he ordered the permanent closure and defueling of Red Hill four months after the fuel leak, Secretary of Defense Austin called the decision the "right thing to do for our service members, our families, the people of Hawaii, the environment, and our nation" (Austin 2022a; U.S. Indo-Pacific Command 2022). The U.S. Navy and DoD also undertook various actions to remediate their errors, including the creation of the Joint Task Force Red Hill (JTF-Red Hill) to oversee the facility's defueling. To execute its plans, the DoD requested \$1 billion from Congress for the Fiscal Year 2023 Defense Budget to create a "Red

Hill Recovery Fund” that would “enable DoD to quickly and flexibly address the health, environmental, and national security needs of the Hawaii community and the Department” (Austin 2022b). The defueling process officially began in October 2023 and was completed in March 2024.

Literature Review

Policy change can be momentous, but it can also be unnoticeable. It can happen on a neighborhood level, but it can also happen on a transnational level. With all these intricacies, how can we understand this concept within policy studies? This review addresses the relevant theoretical frameworks and literature that inform understanding of why and how policy change occurs from an institutional lens.

Historical Institutionalism

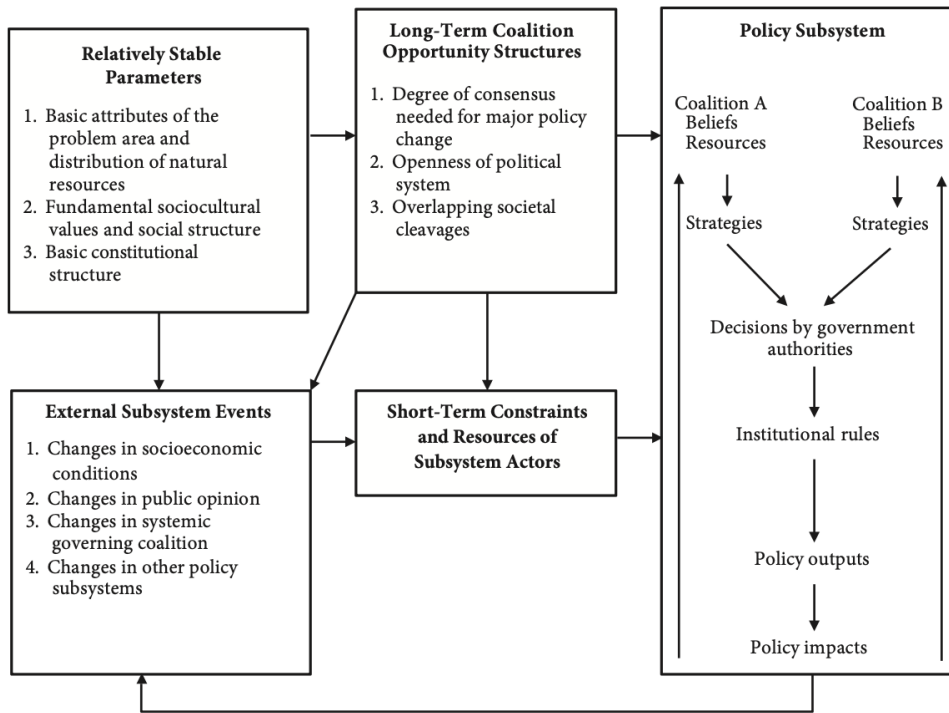
One theoretical approach to understanding why a certain policy outcome occurs is historical institutionalism, one of the three “new institutionalisms” along with rational choice institutionalism and sociological institutionalism (Hall and Taylor 1996). Rational and sociological institutionalism differ from historical institutionalism (HI) in that the former focuses on how institutions function to maximize actors’ utility and the latter focuses on how institutions reflect cultural context and actors’ values (Hall and Taylor 1996). Institutions, defined by Hall and Taylor (1996) as “formal or informal procedures, routines, norms and conventions embedded in the organizational structure of the polity or political economy,” can be shaped by different variables that depend on historical context (Steinmo 2008).

Importantly, HI contains a temporal perspective in that it puts weight on the concept of path dependency (Hall and Taylor 1996; Pierson 2000; Steinmo 2008). Path dependency generally holds that within a historical sequence, there are causal processes, sensitive to prior events, that tend to have a degree of “inertia” (Mahoney 2000). Institutions and their policies are at a state of equilibrium in their path until “critical junctures” that punctuate the equilibrium and trigger change occur (Hall and Taylor 1996; Pierson 2000; Steinmo 2008). Critical junctures are brief events with an enduring impact in that they open new outcome possibilities for actors and can alter an institution’s “path” (Capoccia and Kelemen 2007; Mahoney et al. 2016). In this way, HI is a suitable approach in studying policy change.

There are criticisms that HI is invalid because researchers select their case(s) based on a dependent variable. HI scholars largely acknowledge this (Collier et al. 2004; Fioretos 2011; Steinmo 2008). There is some risk of selection bias in choosing from the dependent variable, and doing so makes it more difficult to integrate findings into larger theories, although scholars like Collier et al. 2004 have made efforts to refute these accusations. Nonetheless, HI is useful in its ability to recognize that actions do not come out of a vacuum, it can be applied to a wide variety of real-life research “puzzles”, and it can be used to illuminate causal processes that can be applied to other cases (Fioretos 2011; Steinmo 2008).

Policy Change and the Advocacy Coalition Framework

Studies on policy change in the U.S. tend to focus on elections and the role of electoral change in policy change (Jones and Baumgartner 2012). However, in looking back at history, it is clear that electoral change is not a necessary condition for policy change. Hence, scholars such as Jenkins-Smith and Sabatier (1994), Jones and Baumgartner (2012), and Weible (2008) have instead posited the importance of information and actors within the larger policy-making environment. Out of the idea that actors at various levels can contribute to policy change, the Advocacy Coalition Framework (ACF) by Jenkins-Smith and Sabatier (1994) was born (Figure 2). The ACF holds that policy actors, driven by beliefs, form advocacy coalitions that compete to influence policy. External shocks, such as environmental disasters, can punctuate the equilibrium of the policy-making system, and policy learning can prompt policy actors with information to change their beliefs (Jenkins-Smith and Sabatier 1994). By accommodating for the power of actors that do not directly decide on policy and acknowledging the existence of beliefs and exogenous events, the ACF is more comprehensive than the elections-focused perspective.



SOURCE: Adapted from Sabatier and Weible (2007).

Figure 2. The ACF. Source: Jenkins-Smith et al. 2018.

The ACF, however, has numerous limitations. First, the ACF takes the view that the process of policy takes “a decade or more” (Sabatier 1988). While long-term change over time must be acknowledged, the policy change process can be quite short-term when conditions allow, such as in crisis situations. Although macro-level policy change or change for particularly institutionalized policies would likely fall into the long-term category, it is questionable to assume this for every case of policy change. Hall (1993) sheds some light on understanding varieties of policy change by positing three “orders” of policy change with different temporal dimensions. First-order policy change involves altering the setting of policy instruments, second-order change involves modifying the policy instruments, and third-order policy change involves a larger “paradigm shift” over the goal of the policy as a whole (Hall 1993).

Second, the ACF is descriptive in nature and does not provide for in-depth causal analysis, which Jenkins-Smith and Sabatier (1994) recognize. Third, the ACF does not distinguish the boundaries of an advocacy coalition. Jenkins-Smith and Sabatier (1994) define advocacy coalitions as made up of people from “various governmental and private organizations who share a set of normative and causal beliefs and who often act in concert.” But what constitutes advocacy coalition behavior and acting in concert is undefined. In the case of Red Hill, for example, it is not clear if the U.S. Navy would be characterized as an advocacy coalition, decisive government authority, or a blend of the two.

Policy Learning and Civil Society

Literature on policy learning generally agrees that learning originates on the individual level and comes from psychological and social processes (Dunlop and Radaelli 2017; Moyson 2017; Pierson 1993; Sabatier 1988). Sabatier (1988) defines policy learning as “relatively enduring alterations of thought or behavioral intentions which result from experience and/or new information and which are concerned with the attainment or revision of policy objectives.” Under the ACF, it is assumed that learning is instrumental as individuals seek to gather knowledge for policy-making goals (Jenkins-Smith and Sabatier 1994). However, May (1992) goes further to identify two additional kinds of policy learning that can take place: social and political. Instrumental learning focuses on understanding the viability of policy tools or designs, social learning focuses on the larger policy problem or goals, and political learning focuses on the political strategy behind a policy problem (May 1992). This is a more holistic view of policy learning.

Civil society’s role in policy change as part of advocacy coalitions can be addressed through the ACF, but it is important to also more clearly examine the role civil society plays in facilitating policy learning for policy decision-makers. In his study of hazardous systems, Busenberg (2001) introduced the concept of institutional learning arrangements, which are

organizational “structures, procedures, and customs that act to promote individual learning.”

In Busenberg’s (2001) case, the federal government invited affected local governments and interest groups to join an advisory council after the focusing event of the Exxon Valdez oil spill, thereby creating an institutional learning arrangement. This council then functioned as a learning mechanism for improved safeguards through initiating studies with other groups, including the federal government (Busenberg 2001). This case also illustrates Sabatier’s claim that a coalition can undergo policy learning when an opposing coalition’s beliefs cannot be ignored (Sabatier 1993, as cited in Cairney 2019).

Yet, to function as a learning mechanism for policy decision-makers, advocacy coalitions such as civil society organizations must have resources. Sabatier and Weible (2007) contend there are six key resources: legal authority, public support, information, financial resources, leadership, and mobilizable troops. With such resources, civil society can transmit information, and consequently, facilitate learning, between individuals and policymakers.

The U.S. Military as a Policy Actor

Understanding the role of national defense agencies such as the DoD in the context of policy change is challenging. Archuleta (2016) even made a “public policy call to arms” about the lack of U.S. defense policy scholarship. One potential explanation for this is that the separate nature of the U.S. Armed Forces makes it difficult to generalize findings. The Air Force, Army, Coast Guard, Marines, and Navy each have different strategies, interests, and preferences (Roman and Tarr 1998). Analyzing national security policy failure from a larger institutional level, as Birkland (2009) or McConnell (2016) has done, is more manageable. The relationship between the military and civil society from a policy or political science perspective is also underrepresented in literature, perhaps due to the misguided notion that the military is an apolitical, independent, professional institution (Ratuva 2019).

Nonetheless, there is ample literature on civil-military relationships from a theoretical level. To describe the civil-military relationship, Feaver (1999) coined the term “the civil-military problematique,” where the military needs power and resources to protect civilians, but it cannot have so much power and resources to where it harms the society it is supposed to protect. Burk (2002), on the other hand, frames the civil-military relationship “problematique” more in terms of values as military values do not always align with liberal democratic ones.

Another cluster of civil-military scholarship focuses on the civilian control of the military. Feaver (1999) contends that civilians can exercise control over the military by employing techniques that both affect the military’s ability and disposition to seize control. The military’s actual ability to seize control is regulated through constitutional checks and balances, but its disposition toward control can be regulated by the media and think tanks, for example (Feaver 1999). Such scholarship could be useful for studying the DoD from a policy perspective.

Research Design

Positionality

The author believes it is important to acknowledge her positionality in relation to the topic. The author identifies as a white woman from the East Coast of the U.S. She lived on O‘ahu, Hawai‘i for three months as part of a fellowship run by the U.S. Indo-Pacific Command and DoD. It was during her time working in the Command’s public affairs division that she first learned about Red Hill. The author recognizes the history of U.S. colonialism in Hawai‘i and believes that Hawai‘i’s resources have been and continue to be exploited by the U.S. government. In writing this thesis on Red Hill to complete her degree, she is, in a way, benefiting from an event that was a horrible manifestation of this exploitation. At times throughout this thesis, the author includes the Hawaiian language, Ōlelo Hawai‘i, in an attempt to decolonize her writing and show respect for Hawaiian culture.

Case Selection

The selected case study of this thesis is the case of Red Hill. The Red Hill fuel leak and its ensuing closure is a “least-likely” case demonstrating the phenomenon of policy change. The case’s time period spans from November 20, 2021, when fuel is believed to have leaked into the drinking water supply, to March 7, 2022, when the DoD publicly announced Red Hill’s closure. The Red Hill case is a compelling, least-likely case of policy change for numerous reasons. First, the DoD did not necessarily have to take any extensive action after the fuel leak; the leak could have been cleaned up, and then Red Hill could have remained without any changes to operations. And in fact, there was a previous leak in 2014 that the DoD made no significant remediations for (Jedra 2022; McCullough 2022). Yet, this time, the DoD took extensive action to address the crisis and its subsequent fallout.

Second, the decision to shut down Red Hill at a time when the Indo-Pacific region is a “priority theater” in the national defense strategy appears counterintuitive (Garamone 2022). Third, in his statement to officially announce the closure and defueling of Red Hill, Secretary

of Defense Lloyd Austin called the decision “the right thing to do” (Lloyd J. Austin III 2022a). Such a rationale is not often given for DoD policy, and the choice carried significant financial costs. These intriguing and unexpected events make the case a fitting one to unpack the mechanisms within the “black box” that exists between policy failure and policy change.

The Red Hill case does have limitations. Hawai‘i is a unique state with a culture and political environment unlike other American states. It is possible that this context is too specific and could not be generalized to other cases of policy failure and change.

Furthermore, Red Hill occurred under a crisis situation due to the contamination of drinking water and, as a result, it may be limited in its ability to generate knowledge about policy change in non-crisis environments. Nonetheless, as Beach (2021) points out, an in-depth, within-case-study methodology such as process tracing can be valuable in understanding crisis decision-making.

Methodology

Process tracing is a qualitative methodology that attempts to trace the causal mechanisms linking an independent and dependent variable, or a cause and an outcome, at a theoretical level (Beach and Pederson 2013, 5). As explained by Beach and Pederson (2013, 11-2), process tracing can be used for three primary purposes: theory-testing, theory-building, and outcome-explaining. Whereas the first two purposes center around a theory, the outcome-explaining approach centers around a specific case study. Figure 3 illustrates the differences between the three approaches.

The research aim for this thesis is not to build on or test a theory that can be generalized to a population, but rather to examine a change in a certain context that yielded an intriguing and rather untypical outcome. Observations of hypothesized causal mechanisms are used to test whether the theories behind the mechanisms explain a certain outcome or not.

Accordingly, this thesis utilizes an outcome-explaining process tracing methodology that is case-centric.

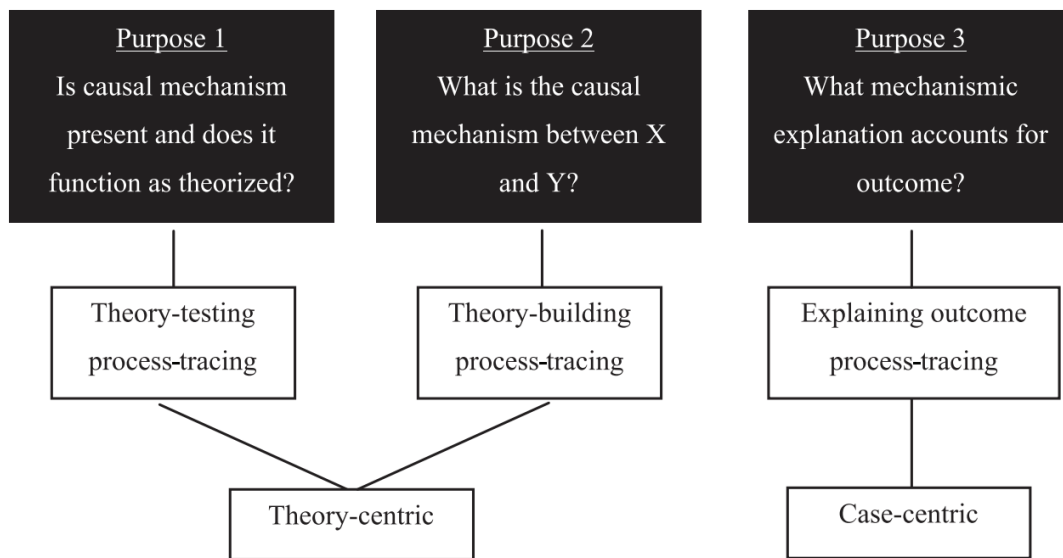


Fig. 2.1. Three different uses of process-tracing methods

Figure 3. The three kinds of process tracing. Source: Beach and Pederson 2013, 12.

Given that the outcome of the selected case occurred relatively recently (the DoD announced Red Hill’s closure in March 2022), there has yet to be substantive literature on the topic. Hence, this thesis employs an inductive approach that uses empirical material about the Red Hill case to then construct a causal explanation. That is not to say that theory plays no role in process tracing. As Beach and Pederson (2013, 34) note, theory still guides process tracing analysis regardless of whether it is theory-centric or case-centric.

It is also important to note that in a case-centric process tracing approach that seeks to uncover mechanistic explanations, there are no “variables.” Instead, “variables” can be thought of as causes and outcomes. Beach and Pederson (2019, 3-4) contend that case-centric process tracing employs mechanistic, within-case data to make inferences; it does not seek to

analyze variation across cases through the absence or presence of variables. The terms “cause” and “outcome” are therefore more appropriate.

Conceptualization and Operationalization

Conceptually, the Red Hill case demonstrates policy failure (the fuel leak and drinking water contamination) and policy change (the DoD decision to close the facility). Policy failure is a relatively straightforward concept. Walsh (2006) provides a useful definition of policy failure as when policy decision-makers conclude a policy is “no longer achieving the political and program goals they prefer.” Walsh’s definition, however, does not incorporate non-decision-making actors. Accordingly, this thesis defines policy failure as: *an event where a program does not achieve its policymaker-defined goals and receives highly significant opposition from policy actors*. Key observable attributes of policy failure are when outcomes do not align with policy goals and receive public opposition such as protests, negative media, letters to officials, etc.

Policy change occurs when policymakers alter the goals of an already implemented program. This thesis accepts the ACF concept that policy change is driven by individual beliefs, which are mobilized via advocacy coalitions. Drawing from Hall (1993), policy change here is characterized as “third-order,” in which there is a drastic shift in the larger policy paradigm. Key observable attributes of a third-order policy change include a reversal or full repeal of policy goals, which can be identified by reviewing official policy documents.

Applying process tracing will uncover the mechanisms between the facility’s leak (policy failure) and the facility’s closure (policy change). This thesis hypothesizes that actions taken by civil society caused the policy change, with the two most important causal

mechanisms being civil society mobilization and the presentation of evidence to policymakers.² The full hypothesized causal chain is illustrated in Figure 4.

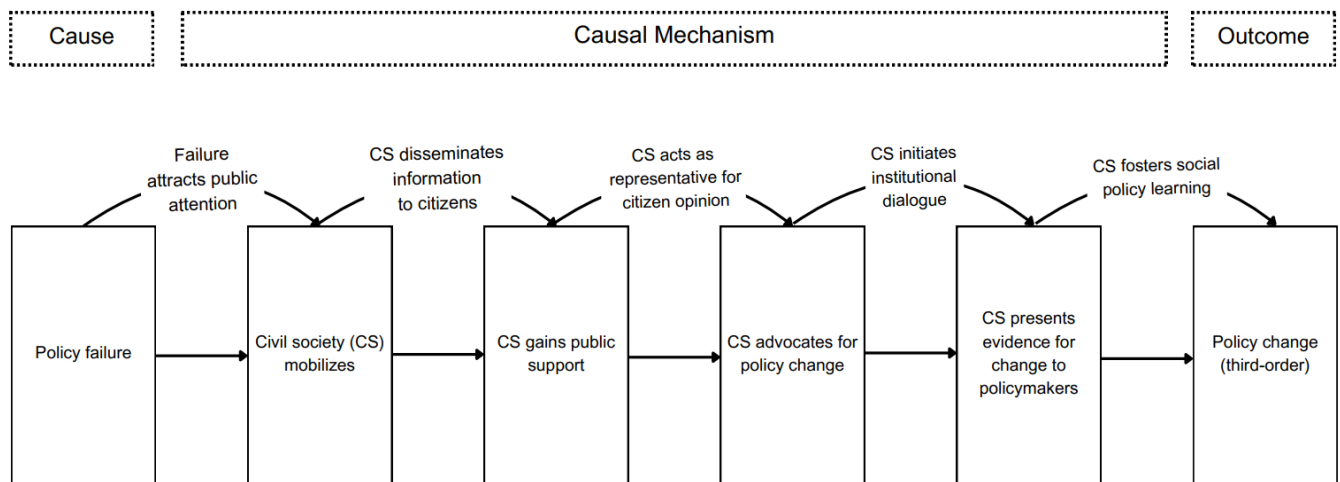


Figure 4. The hypothesized causal chain.

The operationalization of all causal mechanisms is shown in Table 1. The very last part of the causal chain in Figure 4 involves civil society fostering social policy learning. This concept draws on May's (1992) conception of social policy learning, whereby there is a "new or reaffirmed social construction of a policy by policy elites." The observable attribute of fostering social policy learning is an attempt to change policy elite beliefs, which could be expressed in official documents, press conferences, or news statements, for example, that detail meetings between civil society and policymakers.

² Civil society in this context is composed of non-governmental organizations (NGOs), grassroots activism groups, volunteer groups, and citizen-activists.

Causal mechanism <i>(hypothesized)</i>	Observable manifestations <i>(identified via media reports, interviewee accounts, public documents)</i>
Policy failure	Policy outcome does not align with policy goals; policy receives significant public opposition.
Civil society (CS) mobilizes	CS organizations coordinate to form a coalition; CS plans advocacy strategy
CS gains public support	CS meets with the public; CS uses media outreach; citizens demonstrate support for CS
CS advocates for policy change	CS protests, petitions, launches letter writing campaigns, uses media outreach, takes legal action, lobbies policymakers
CS presents evidence to change policymaker beliefs	CS meets with policymakers; CS provides data, testimony, other information to policymakers
Policy change (third-order)	Policymakers repeal or reverse policy goals

Table 1. Operationalized causal concepts.

Measurement

To confirm a hypothesis under process tracing, scholars can use four kinds of empirical tests based in Bayesian inference: hoop, straw-in-the-wind, smoking gun, and doubly decisive (as described in Figure 5). Hoop tests and smoking gun tests tend to be the most commonly used as they can prove the necessity and sufficiency of a mechanism for an outcome (Mahoney 2012). These will be the tests applied in data analysis. Successful hoop tests require a piece of observed evidence that, although not necessarily unique, matches with the hypothesized causal process, thereby indicating if a hypothesis is relevant or not. Conversely, passing a smoking gun test requires a piece of evidence that is unique and strongly supports the hypothesized causal process. In order to confirm the hypothesis that civil society actions caused DoD policy change, mechanisms must at least pass a hoop test, and ideally, pass a smoking-gun test as well.

Table 1

Process Tracing Tests for Causal Inference

		SUFFICIENT FOR AFFIRMING CAUSAL INFERENCE	
		No	Yes
NECESSARY FOR AFFIRMING CAUSAL INFERENCE	No	1. Straw-in-the-Wind	3. Smoking-Gun
		a. Passing: Affirms relevance of hypothesis, but does not confirm it.	a. Passing: Confirms hypothesis.
		b. Failing: Hypothesis is not eliminated, but is slightly weakened.	b. Failing: Hypothesis is not eliminated, but is somewhat weakened.
		c. Implications for rival hypotheses: Passing <i>slightly</i> weakens them. Failing <i>slightly</i> strengthens them.	c. Implications for rival hypotheses: Passing <i>substantially</i> weakens them. Failing <i>somewhat</i> strengthens them.
	Yes	2. Hoop	4. Doubly Decisive
		a. Passing: Affirms relevance of hypothesis, but does not confirm it.	a. Passing: Confirms hypothesis and eliminates others.
		b. Failing: Eliminates hypothesis.	b. Failing: Eliminates hypothesis.
		c. Implications for rival hypotheses: Passing <i>somewhat</i> weakens them. Failing <i>somewhat</i> strengthens them.	c. Implications for rival hypotheses: Passing <i>eliminates</i> them. Failing <i>substantially</i> strengthens.

Source: Adapted from Bennett (2010, 210), who builds on categories formulated by Van Evera (1997, 31–32).

Figure 5. The four kinds of Bayesian inference tests. Source: Collier 2011.

Methodological Limitations

To reach a 100 percent certainty level with this method is, unfortunately, not possible. To reach at least a minimally-sufficient explanation in case-centric, outcome-explaining process tracing, there must be an explanation for the most important aspects of the outcome and sufficient evidence that aligns with the explanation (Beach and Pedersen 2013, 21). Case-centric process tracing can also border on “storytelling” without conducting adequate causal inference and can be limited in its ability to generalize broadly (Schimmelfennig 2014). Recognizing these limitations does not, however, invalidate the method itself. When applied effectively, case-centric process tracing can be a useful qualitative tool for digging into how mechanisms can produce unexpected outcomes.

Data Sources

In engaging in outcome-explaining process tracing, having a variety of data sources is important for triangulation (Bennett and Checkel 2014). There is no rule for achieving a

sufficient amount of data in process tracing, but Bennett and Checkel (2014) suggest ending data collection when information starts to be repetitive. Data was collected from local media coverage, materials by civil society organizations, and public government documents. The two local media outlets used for data collection were the non-profit *Honolulu Civil Beat* and public broadcaster *Hawai‘i Public Radio*. Both outlets are moderate-to-left leaning in perspective. They were selected as they had the most comprehensive and factual coverage of the case and did not have paywalls.

Requests for interviews were sent to the U.S. Indo-Pacific Command, Joint Task Force Red Hill, the Office of the Secretary of Defense, U.S. Representative Ed Case, the Hawai‘i State Department of Health, two local government bodies in Honolulu, and four non-profit organizations and activist groups. Interviews with leaders from two non-profits and one local government body were conducted and transcribed. Other interview requests were ignored or denied.

Ethical Considerations

Before conducting interviews, the author obtained written consent forms from participants. Participants were informed of the purpose of the study and agreed to be recorded during the video call interview. Transcripts of their individual recordings were shared with participants, who each approved them.³ The Red Hill crisis spurred legal actions that are still ongoing. As a result, participants have been anonymized. Instead of their names, interviewees are referred to in relation to their institutional affiliation as NGO 1, NGO 2, and LOCAL GOV.

³ Anonymized interview transcripts are available upon request.

Data Analysis

Cause: Policy Failure

The critical juncture that triggered the DoD path toward policy change was the Red Hill fuel leak, which was a policy failure. Two interviewees confirmed that the fuel leak was a triggering event for the eventual policy change outcome:

“It finally took something of that horrible magnitude to finally bring everybody onto the same page and say, yeah, this is a problem. We can't really have this fuel facility sitting over our drinking water” (LOCAL GOV 1 2024).

“If there weren't a disaster, this wouldn't have happened. I mean, you wouldn't have seen this huge change” (NGO 2 2024).

The Red Hill fuel leak can be considered a policy failure that did not meet policymaker goals and received significant public opposition. When fuel leaked into a groundwater aquifer under the facility in November 2021, Red Hill did not meet the government's goal of containing fuel and was therefore a policy failure on an instrumental level.

Red Hill was also a policy failure on a social level as it received highly significant opposition from non-policy decision-making actors. A few days after the leak, there was an NGO-led protest calling for Red Hill's closure (McAvoy 2021a). Weeks later, there was a “die-in” protest against Red Hill at the Hawai'i State Capitol (Jedra 2022). Additionally, there was a considerable deal of negative media on Red Hill due to the leak, which one interviewee also mentioned (NGO 2 2024). Headlines from local media at the time read “How The Red Hill Fuel System Has Threatened Oahu's Drinking Water For Decades” and “Military families voice fears and frustrations about contaminated Navy water system” (Cruz 2021; Jedra 2021a). Local media also highlighted stories of residents who fell ill from

contaminated water or were displaced from their homes (Hofschneider 2021; Jedra 2021b; Jedra 2021c; McAvoy 2021b).

In reviewing the events shortly after the fuel leak, there was clearly a failure to meet policy goals and significant public criticism of the Red Hill facility. The hypothesized causal mechanism passes a hoop test and smoking gun test.

Mechanism 1: Civil Society Mobilizes

Once the fuel leak attracted public attention, civil society (CS) began to mobilize, coordinating with one another and building necessary capacity. A local news outlet described how the O’ahu chapter of the Sierra Club, an environmental NGO, formed a “Shut Down Red Hill Coalition” with 70 other groups to bolster advocacy efforts (Jedra 2022). NGO 1 described working with other CS organizations during this time to “plan out actions” and increase “consciousness raising around the situation” (NGO 1 2024). Mechanism 1 passes a hoop test and a smoking gun test due to the direct evidence of coalition-building and advocacy planning.

Mechanism 2: Civil Society Gains Public Support

By disseminating information to the public and recruiting concerned citizens to their advocacy coalition, CS gained public support, which would be necessary for executing an advocacy strategy. One news article noted that social media was an important way that some organizations could communicate with the public (Jedra 2022). A Native Hawaiian organization started an online petition to shut down Red Hill, including information and resources. The petition received 6,500 signatures, indicating considerable public support (‘Āina Momona 2021). NGO 1 described their information-sharing activities and how they led to more citizen involvement:

“I was putting together educational products and presentations and meeting anyone who would listen, including churches and just an ad hoc group of kūpuna, like retirees, that reached out, and they eventually became a pretty big organizational

force. Which is really a good litmus test, right? If you can reach retirees who pretty much earned their keep and should just be enjoying life, to get them to activate and take action. That was a good sign that the educational piece was working” (NGO 1 2024).

Interestingly, LOCAL GOV 1 began to act as a CS organization by taking a similar, education-based approach as NGO 1 in order to increase awareness about the fuel leak and address community concerns:

“My boss did probably at least three to 400 different meetings. We met with anyone who wanted to talk to us...If people called, ‘Can I speak to the boss?’ He would call them back. Because we felt it was just so important” (LOCAL GOV 1 2024).

Interviewees built trust and support with the public through their communications efforts. The mechanism passes a hoop test, and interviewee accounts of public interaction are sufficient to pass the smoking gun test.

Mechanism 3: Civil Society Advocates

After uniting citizens and serving as an outlet for their opinions, CS organizations launched their advocacy campaign. They protested, created a “Red Hill pledge” for citizens and legislators to express support for shutting down Red Hill, canvassed, and urged citizens to write letters to policymakers (Jedra 2022; NGO 1 2024). They also communicated their advocacy efforts on social media (Figure 6).



Figure 6. Facebook and Instagram posts, respectively, from two CS organizations. Sources: Hawai'i Peace and Justice 2021; Sierra Club Hawai'i 2021.

NGO 1 directed advocacy not just toward local policymakers and the Navy but also toward “key decision-makers” in “the Pentagon and the White House,” particularly through letter writing (NGO 1 2024). Additionally, NGO 1 described meeting with the Council for Native Hawaiian Advancement (CNHA), an NGO and lobbying organization, to discuss Red Hill so that CNHA could raise the issue over dinner with President Biden (NGO 1 2024). The mechanism passes a hoop test and smoking gun test given the direct evidence of advocacy from media reports, CS social media, and NGO 1’s account.

Mechanism 4: Civil Society Presents Evidence to Change Policymaker Beliefs

Out of their advocacy, the NGO 1 and LOCAL GOV 1 filed a legal motion to intervene in the case between the state Department of Health (DOH) and the Navy, in which the Navy was contesting a DOH order to shut down and defuel Red Hill (Earthjustice 2021; Kim 2021).⁴ NGO 2, who was also involved in the intervention, said that NGO 1 stepped in to ensure public interest was represented in the case (NGO 2 2024). Over thirteen hours, NGO 1 and LOCAL GOV 1 met with Navy representatives as well as the DOH over video

⁴ LOCAL GOV 1, although a local government institution, exhibited characteristics of a CS organization.

chat (Ubay 2021). Presenting facts and witness testimony, the intervening parties argued for the DOH order to be upheld and the Navy argued against it; recordings were posted on the DOH YouTube (Kim 2021; Ubay 2021). Notably, at one point, the Navy argued that “a forever suspension [of the facility] is not appropriate” (Hawai‘i State Department of Health 2021).

By meeting with policymakers and presenting evidence for policy change, CS fostered social policy learning. CS attempted to change the beliefs of policymakers and cause them to rethink the nature of the policy itself, which then triggered policy change. This mechanism passes a hoop test and smoking gun test as CS provided information during the DOH meeting to the Navy.

Outcome: Policy Change

When the Secretary of Defense formally announced that the Red Hill fuel facility would be shut down and defueled, the DoD fully repealed the policy goals it had set in place over the last seventy years. In analyzing the Secretary of Defense’s statement announcing Red Hill’s closure, two quotes in particular indicate this was a third-order policy change precipitated by social policy learning:

“This is the right thing to do. Centrally-located bulk fuel storage of this magnitude likely made sense in 1943, when Red Hill was built. And Red Hill has served our armed forces well for many decades. But it makes a lot less sense now” (Austin 2022a).

“To a large degree, we already avail ourselves of dispersed fueling at sea and ashore, permanent and rotational. We will now expand and accelerate that strategic distribution. Moreover, when we use land for military purposes, at home or abroad, we commit to being good stewards of that resource. Closing Red Hill meets that commitment.” (Austin 2022a).

These quotes reveal that there was not only a strategic shift behind the policy change but also a moral shift. The Secretary of Defense’s statement cast the old policy paradigm as

impractical and unjust, and the new paradigm made more “sense” and better aligned with community relations and sustainability goals. Two interviewees confirmed the existence of policy change and both described the decision as a highly significant, relatively short-term change:

“It was a huge shift, right? So for eight years, Red Hill was vital to national security, it would cost ten billion dollars to build a new storage facility that could hold all the fuel that they apparently needed. That's what they were telling everyone. And then, when the Pentagon actually took a look at the situation, they're like, ‘No, this doesn't make sense to put all of our eggs in a basket from World War II’” (NGO 1 2024).

“Kind of suddenly, the Navy just did a 180 from vehemently denying that there was an emergency and on day one, they denied there's an emergency and claimed that Red Hill is vital for national security. And the next day, it is an emergency, Red Hill is not only not necessary for national security, it's an antiquated system that is bad for national security and we need to do more distributed stationing of fuel around the Pacific” (NGO 2 2024).

Taking the interviewee accounts together with the Secretary of Defense’s statement, there is strong evidence to support the existence of a third-order policy change. The hypothesized outcome passes a hoop test and evidence from the Secretary of Defense statement passes a smoking gun test.

Discussion of Results and Conclusion

In tracing the process from the Red Hill fuel leak to the DoD decision to close and defuel Red Hill, there was observed evidence to support all hypothesized causal mechanisms. All mechanisms passed the hoop and smoking gun tests. The hypothesis that civil society (CS) actions caused the DoD policy change is relevant and may also be a sufficient causal explanation.

Evidence strongly supported that the Red Hill fuel leak was a critical juncture for setting the DoD's path toward policy change. The external shock of the fuel leak prompted CS to mobilize and policymakers to begin reconsidering their beliefs. To sustain a coalition, CS needed public support, and it worked to educate and involve citizens on the Red Hill issue. Using the "troops" it created, CS directed advocacy efforts toward local, state, and national policy decision-makers.

The process came to a head when CS met with the Navy to present evidence to support Red Hill's closure. Through this "institutional learning arrangement," as Busenberg (2001) termed it, CS fostered social policy learning. While this learning was not immediate, as seen by the reaction of the Navy during the DOH hearing, the Secretary of Defense's statement made it clear that the DoD recognized Red Hill's detrimental impact on sustainability goals and relations with the Hawaiian community. This shift in policy goals and Red Hill's full decommission constitutes a third-order policy change.

Limitations

Some may argue that the DoD was already considering shutting down Red Hill before the fuel leak. Yet, as mentioned previously, the same facility had a fuel leak in 2014, but the DoD's response was inconsequential. This indicates the presence of new conditions and mechanisms between 2021 and 2022 that influenced the DoD decision.

While all hypothesized mechanisms passed Bayesian inference tests, there may be alternative explanations for the case outcome. Perhaps state institutions played a larger role in facilitating policy change, and the state DOH emergency order to shut down the facility triggered its own causal path. It is also possible that citizens and civil society activated Congressional representatives, whose insider positions and legislative advocacy eventually caused the DoD decision. Retracing the case with new hypothesized mechanisms, and with additional Bayesian inferencing, could identify other key actors and actions.

Ideally, more interviews would have been conducted with state, national, and DoD representatives to gain a more comprehensive view of the causal process, but these groups declined interviews due to time constraints or ongoing lawsuits over the fuel leak. Furthermore, case-centric process tracing on its own does not provide sufficient information for understanding a mechanism's degree of impact on the outcome, nor can it account for all the factors that influence an outcome. Utilizing the Qualitative Comparative Analysis (QCA) method for example to analyze multiple cases of DoD policy change could increase specificity and produce greater external validity.

Contributions to Literature

This thesis contributes to existing literature in several areas. Sabatier's (1988) assertion that the policy change process occurs "over a decade or more" does not hold true in this case. The DoD decision to shut down Red Hill took only four months. This is likely because the fuel leak's water contamination caused a crisis situation. With citizens falling ill, both CS and policymakers were under great public pressure to reach a solution quickly. Further research about how crisis situations impact policy change could better identify the factors that expedite change and reveal whether crises influence the likelihood of social policy learning between CS and policymakers. Additionally, it is interesting to note how LOCAL GOV 1 acted as a CS organization by taking part in the same actions as CS. This

indicates that local governmental authorities can join advocacy coalitions and advance shared beliefs alongside CS while also coordinating with state and national institutions to enact change.

Above all, this thesis sheds light on how CS impacts the DoD policy process—a topic that certainly deserves further research. CS was key in advocating for policy change and providing evidence to cause DoD policymakers to question not only the instruments of the policy but also the entire purpose of the policy. In other words, the DoD could no longer ignore the CS-led coalition’s beliefs, illustrating the argument made by Sabatier (1993), as cited in Cairney (2019). The DoD is not an institution insulated from the public and CS pressure, even if its decision-makers are not directly elected. If civilians can affect the military’s disposition toward control as Feaver (1999) suggests, then CS is a crucial channel for civilians to express their preferences to U.S. military policy actors.

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