Marine and Coastal Values in Newfoundland and Labrador: The Development of a Values Database

[1]Engel, M.T., [2]Andrews, E.J, [1]Chuenpagdee R., [3]Sabau, G., [1]Blaser, M., and [1]Bath, A.

[1]Geography Department, Memorial University, Canada
[2] School of Environment, Resources and Sustainability, University of Waterloo, Canada
[3] Grenfell Campus, Memorial University, Canada

- The building process of a values database using non-academic knowledge
- 16 types of values were identified among individual materials
- Mastery and financial values were most related to the fish and the ocean in Newfoundland and Labrador
- The values database is a potential source for longitudinal studies.

Abstract

Human values are important in the understanding of behavior, as values influence people's decision, and shape how people relate to marine environment. In this review study, we investigated Newfoundlanders and Labradorians' values towards fish, fishers and the ocean. Our objectives were twofold. First, to gather non-academic sources that can be used to access values and compile these materials in a 'values database'. Second, to identify environmental e community values among individual materials. A total of eight main sources were identified. Two television broadcast shows were used as case studies to pilot the protocol for individual analyses of values. A total of 203 individual episodes were identified; of those, 28 were analyzed individually. We used content analyses to identify values within each source. The temporal scope of individual episodes ranged between 1977 to 1990. Sixteen types of values were identified. The most prominent values were the environmental values 'mastery' and 'monetary', where fish and the ocean were mostly valued for their financial attribute. This rapid assessment of values shows that a variety of values play may influence the way people relate to the ocean in this province. Our findings show that people were aware of the decline of fish but would continue fishing to attend their financial needs, hence the 'mastery' value. Finally, the database may be used for longitudinal studies investigating whether values are changing over time.

"The value concept, more than any other, should occupy a central position… able to unify the apparently diverse interests of all the sciences concerned with human behavior" Rokeach, (1974, p. 3).

Why studying values

The oceans are transforming rapidly, involving massive reductions in biodiversity, with increasing vulnerabilities for fisheries and coastal communities (Halpern et al., 2008). An imperative to respond to these changes involves reviewing human-ocean relationships to identify pathways for advancing sustainability in coastal and marine systems (Walker-Springett et al., 2016). Embedded in these relationships are social and psychological elements that shape people's experiences with change, such as perceptions, values, attitudes, emotions, moral judgements, worldviews and preferences (Amel, Manning, Scott, & Koger, 2017; Gifford, 2014). We focus our research on the study of coastal communities and environmental values, as a basis to explore possible avenues and mechanisms to promote the sustainable use of marine resources in Newfoundland and Labrador.

Values are deeply-held cognitive elements that guide human behaviour and form a foundation for social interactions (Rokeach, 1974). They also reflect humans' judgements of what is important in life. Values exist within a multi-level social and ecological structure (Munford & Callicott, 2003; Manfredo et al., 2016), for example, at the individual and community levels, and as expressions of the worth people attribute to a particular species. Understanding values can shed light on human-oceans relationship and on what may influence it, as values drive human activity at the land-sea interface, shape perceptions of coastal and marine problems, and guide decisions about support or opposition for management strategies. Because the nature of people's worldviews can accelerate the anthropogenic impacts on the environment, values research has a critical role in advancing sustainability through building public awareness, research grounded human experience and policies that reflect a dynamic social context (Dallmeyer, 2003).

The purpose of our research is to conduct a rapid scan of human values related to fishing, fish, and the ocean off the coasts of Newfoundland and Labrador. People express values implicitly and explicitly in everyday life. For the people of Newfoundland and Labrador, fishing, fish, and the ocean have been

important topics of discussion in which values are expressed. Since the early 20th century, records of people's perspectives on the ocean and the fishery exist whether in minutes from public meetings, in news media, formal policy or reports. Yet, those sources are diverse in format, objectives, and accessibility. To address our research purpose, then, we are (a) developing an inventory of non-academic sources to be included into a 'values database', and (b) assessing some of the sources to make preliminary observations about human values over the course of 50 years. We have chosen 50 years as a time frame as it encompasses a period of an approximate 25 years before and after the collapse of the Atlantic ground fish industry and multi-year moratoria of Atlantic cod.

We began the development of the values database through an organized collection of qualitative sources based on their core elements and relevance. With this database, we expect researchers, policy-makers, scholars and community members alike will have the opportunity to delve quickly into learning about human values, and to use them in discussions about fish, fisheries and the oceans off Newfoundland and Labrador. Furthermore, the values database can serve for future longitudinal and temporal analyses of human values. We start out this report by reviewing how the concept of *value* is articulated in the literature, then we present a brief description of environmental and community values. Next, we explain the methodology behind the creation and development of our values database. Last, we present preliminary results and a discussion, followed by a brief description of next steps and recommendation for future work.

How values are articulated in the literature

Although the study of human values is a well-established study topic, the concept of *values* suffers from a definitional inconsistency among researchers and theorists from various relevant fields of investigation (Steven Hitlin & Piliavin, 2004; Rohan, 2000; Kluckohn, 1951). From a social psychology perspective, values are "enduring beliefs that a specific mode of conduct is personally or socially preferable to an opposite or converse mode of conduct or end-state of existence" (Rokeach, 1974, p. 5). Values represent a component of the individual personality that underlies and influence attitudes and behaviour (Cieciuch, Schwartz, & Davidov, 2015). The anthropologist and social theorist, C. Kluckhohn defines values as "a conception (cognitive component), explicit or implicit, distinctive of an individual or characteristic of a group, of the desirable (affective component) which influences the selection (conative

component) from available modes, means, and ends of action" (Kluckhohn, 1951, p. 395). While Rokeach considers values as given meaning to action, Kluckhohn emphasizes action intrinsic to his definition of values (Hitlin & Piliavin, 2004).

From a social psychology perspective, values are conceptions of what is considered as good, proper or desirable in human life; they are vital in social life, especially when they elicit conflict on personal values. From an economic perspective, values refer to the degree in which the object is desired and reflect the individual willingness to give up a particular situation or object to get them; in this sense, people have preferences and objects have value (Graeber, 2001). Despite the variations in perspectives and meanings (see Rohan, 2000, for a more thorough review if value definitions), there are at least six common characteristics among most of the definitions of human values that are implicit within the writings of many theorists (Schwartz, 2012; Schwartz & Bilsky, 1987). These features of human values are:

1. Values are beliefs that are activated when they become infused with feeling;
2. Values refer to desirable goals that motivate actions;
3. Values transcend specific actions and situations;
4. Values serve as standards of criteria, guiding the selection or evaluation of actions, policies, people and events;
5. Values are ordered by importance relative to one another;
6. The *relative* importance of multiple values guide action, that is, values influence action when they are relevant in the context and important to the actor.

We adopt a social psychological perspective to help broaden our analyses of values. Despite the recognition of the intrinsic value of seas through non-use values in the economic perspective, economic based models fail to acknowledge the sense of responsibility and care attached to values (Collet, 2007). Our objective is to go beyond monetary valuation of fish, fisheries and the ocean.

Values become less abstract when they are oriented toward an object carrying contextual meaning, for example toward the environment broadly or the oceans specifically. Environmentally oriented values are based on beliefs of the relationship between humans and nature (Steg & de Groot, 2012). Below we explain the concept of environmental values, and briefly describe the rationale behind core human values at the community level.

Environmental values

Environmental values reflect people's perceptions, judgments, and individual and shared moral ideals towards nature that are not necessarily intended to fulfill human needs and desires (Reser & Bentrupperbaümer, 2005). There are at least three value orientations that are relevant for shaping behavior towards the environment: biospheric, altruistic and egoistic values (Stern & Dietz, 1994). **Biospheric values** emphasize the intrinsic value of nature and the environment (Steg & de Groot, 2012). They reflect concern for the health and quality of nature for its own sake without a clear consideration for the welfare of humans. **Altruistic values** reflect concern for the welfare of humans before the environment. Both biospheric and altruistic values reflect self-transcendence (Schwartz's value theory) and prosocial (social value orientation theory) values (Steg & de Groot, 2012). Self-transcendence values are values related to universalism (i.e., understanding, appreciation, tolerance, and protection for the welfare of all people and for nature), and benevolence (i.e., promoting the welfare of one's ingroups). Prosocial values refer to altruistic and cooperative value orientations. While altruistic value orientation maximizes outcomes of others regardless of own personal values, cooperative value orientation prioritize joint outcomes (Liebrand & McClintock, 1988). Environmental **egoistic values** reflect concern with individual outcomes (Stern & Dietz, 1994). People with egoistic value orientations will consider the costs and benefits for themselves before engaging in any activity, and are less likely to engage in pro-environmental behavior when compared to altruistic and biospheric values (De Groot & Steg, 2008). Yet, when they believe that environmental issues would threaten them personally, this group are likely to engage in pro-environmental behavior (Stern & Dietz, 1994).

As mentioned, the natural environment also carries an **intrinsic value**. An intrinsically valuable thing, as the ocean or a particular fish species, is thus something that is valuable for its own sake, independent of any human experience or evaluation; it is a non-anthropocentric type of value (Pascual et al., 2017a). As such, valuing something for its own sake does not include valuing it only for what it does or provides for human benefit. Intrinsic value can be understood, in part, by distinguishing it from **instrumental values** and **relational values.** While the former refer to the value attributed to an entity as a means to achieve a particular end, the latter reflects preferences, principles and virtues of relationships (i.e., people/people, people/nature), but also values associated with a good quality of life (Pascual et al., 2017). While intrinsic and instrumental values are often viewed as opposed to each other, relational values are the link between them (Chan et al., 2016).

Embracing value pluralism and acknowledging a diversity of worldviews, values and ideologies, may lead to a better understanding of the complexities between people and nature (e.g., Pascual et al., 2017). Value pluralism states that entities have many intrinsically valuable properties (e.g., biological, social, cultural values), while value monism considers an entity to have only one valuable property (e.g., livelihood; Kelly, 2014; Robinson, 2011). Adopting value pluralism in environmental related issues allows the choice of actions to be contextual and specific to circumstances, and not determined by rigid ideology (Robinson, 2011). We adopt the notion of value pluralism in this study, which leads to a better understanding of humans' responsibility to protect and conserve biodiversity. Table 2 in the Methodology section summarizes the definitions of environmental values applied to the marine context and this research.

Community Values

Community values are beliefs and desires held by groups of people such as power, well-being, wealth, or respect (Jones et al. 2015). People hold numerous and diverse values that are expressed in relation to a social-ecological or management changes (Jones et al. 2015; Satterfield 2001). As such, community values are closely related to goals that change in different contexts and co-evolve with changing social-ecological conditions (Lasswell 1971). Expressions of these goals create observable patterns that can be measured quantitatively and qualitatively (Lasswell 1971; Clark 2012). Investigating these patterns can provide insights into how certain future changes might affect people, thus providing opportunities for considerations in management (Norton & Steinemann 2001).

Community values are important for managing coastal and marine systems. The individual community values included in this research (see Table 2) reflect categories for people experiencing processes of changing in marine ecosystem goods and services and changing policy processes, in particular those designed to develop key outcomes such as ocean development, spatial regulations, seasonal closures, fish quotas (Hicks 2012, Hicks et al. 2015), and getting better knowledge of the ocean. Community values, then, support an environmental values suite because they broaden the scope of values to recognize the goal-oriented behavior of coastal and marine system actor groups in relation to different types of change, including management.

Research Methodology

We adopted a qualitative, narrative methodology using a critical review of secondary sources. A narrative methodology refers to the study of human experience as a collection of stories through which the researcher can identify interpretations and make inferences about why and how people experience the world (Connelly and Clandinin 1990; Clandinin 2006). Critical reviews are a common method in narrative methodology. They involve analysis of data sources to identify strengths, weaknesses, and gaps in constructs and the applications of those to construct broader narratives (Jesson and Lacey 2006). Often, critical reviews of peer-reviewed and grey literature indicate as a limitation a certain extent of social, political, cultural, and ultimately interpretive distance between theory and the human experience (Law 2004). We used non-academic data sources in an attempt to reduce such distance, although we acknowledge that our non-academic sources include subjective standpoints manifest through editing and prioritizing in materials.

We conducted a content analysis of values database material. Content analysis refers to a "research technique for making replicable and valid inferences from text and other meaningful matter to the contexts of their use" (Krippendorf 2004: 18). Content analysis involves the systematic, rigorous and replicable coding of textual, visual, and audio material to develop a critical understanding of constructs and their applications across multiple data sources (Krippendorf 2013; Weber 1990). In the context of a critical review, the researcher considers the main content of the materials as raw data, and then proceeds to analyses by systematically making evidence-based inferences about organizing codes (Finfgeld-Connett 2014). This synthetic process occurs in four iterative phases including data segmentation, the development of data matrices and coding, reflecting by memoing, and reflecting by diagramming (Table 1).

Table 1. Content analyses process.

Content Analysis Phases	Description
Data segmentation	• Initial sorting of materials into broad descriptive categories (e.g., TV broadcast, radio broadcast, magazine, report, etc.) in a database • Secondary sorting of each category into segments (i.e., identifying sections in source from which codes arise)
Data matrices and coding	• Organizing segments from the source to manage codes and separate quotations • Iterative and inductive identification of phrases that are separated into similar or dissimilar themes and subthemes. • Describing and interpreting the sources based coded data
Reflecting by memoing	• Memoing for a clear "audit trail" as data analysis progresses • Note-taking on immediate reflections of phrases and codes within studies and then on themes across studies.
Reflecting by diagramming	• Constant revising of visual representations of codes

Adapted from Finfgeld-Connett (2014).

A hybrid of inductive and deductive approach for our content analysis was adopted. The inductive part, also known as conventional analysis, refers to coding based on categories that emerge directly from text, spoken word, or images (Hsieh and Shannon 2005). The deductive aspect, or directed analysis, involves coding based on preidentified categories existing in frameworks or theories (Hsieh and Shannon 2005). In the directed analysis, we used preidentified categories based on established previous work on the study of values (Table 2). These preidentified categories serve as theoretical bases to start the identification of values across the sources.

Table 2. Preidentified categories of values used in the directed content analysis.

Value	Definition applied to the marine context	Key references
Environmental Values		
Biospheric	Emphasize the value of nonhuman species and the biosphere (unity with nature).	De Groot and Steg (2008)
Altruistic	Concern for the welfare of humans before considering the welfare of the ocean.	
Egoistic	Concern with individual outcomes first.	
Mastery	Sense of mastery, control over the ocean and marine life. Related to dominance value.	Kellert (2012)
Instrumental	The value attributed to the ocean or species as a means to achieve a particular end.	Dietz et al. (2005); Arias-Arevalo et al. (2017)
Monetary	The ocean or species valued for its financial contribution to people.	
Relational	The importance attributed to meaningful relations and responsibilities between humans and between humans and nature.	
Subsistence	The species as main source of food.	Arias-Arevalo et al. (2017)
Livelihood	The species as a source of income.	
Recreational	The species as a source of recreation and leisure.	
Intrinsic	The value of the ocean, or marine life as ends in themselves, irrespective of their utility to humans.	
Community Values		
Power	Is to make and carry out decisions or influence decision-making of others. Control over resources and people.	Lukes (2005); Schwartz (2012)
Intelligence	To have and seek knowledge.	
Wealth	To have money or its equivalent and material assets.	Bendtro and Brokenleg (2002)
Skill	To have special abilities, learned or passed down, and to develop those over time and use.	
Wellbeing	To have health, physical, and mental.	
Affection	To have family, friends, and strong community relationships.	
Sense of place	Individual identity that is related to the meaning of some environmental, social or physical.	Cresswell (2004); Song et al. (2013)
Respect	Is to have, show, and receive deference.	

Table compiled by the authors from reviewed materials, on August 2018.

Creating the Value Database

We developed a three-phase protocol involving source collection, screening, and organization of content into a qualitative database (Fig. 1). This database is grounded on a qualitative database design that includes a structure for organizing and archiving diverse data sources (Manderson et al., 2001). Providing structure allows for the categorization of sources and materials based on their core elements and constructs, observations and notes, and codes used to analyze materials. Effective organization can provide a foundation for further evaluation and theory development (Thorne, 2000). Archiving is important for building a long-term, shareable understanding of phenomena that can be further developed, adapted, and refined (Kuehn and Witzel, 2000).
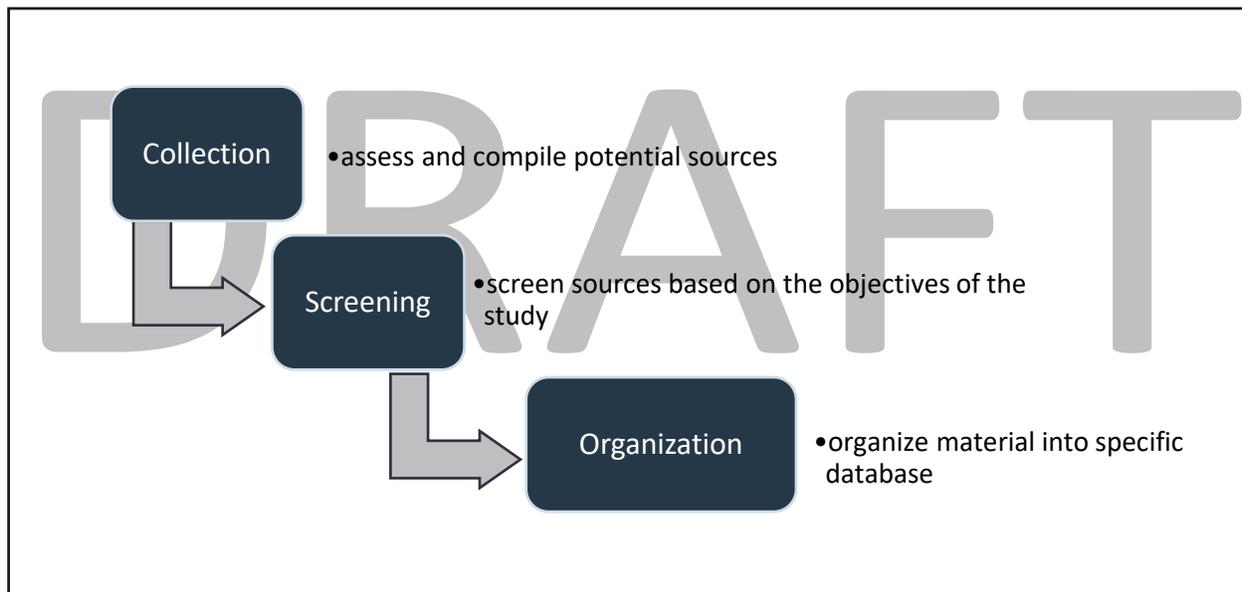

Figure 1. Visualization of the three-phase protocol. Figure compiled by authors based Manderson et al. (2001).

The goal of **source collection** was to assess many potential sources (i.e., comprehensiveness) to include the most relevant (i.e., selectivity). This quick scan of potential sources was made based on materials suggested by a professional at the Center for Newfoundland Studies (CNS) at Memorial University. After gathering the material, we entered some key information about these sources in a master sheet (Appendix 1). Figure 2 summarizes the source collection process.
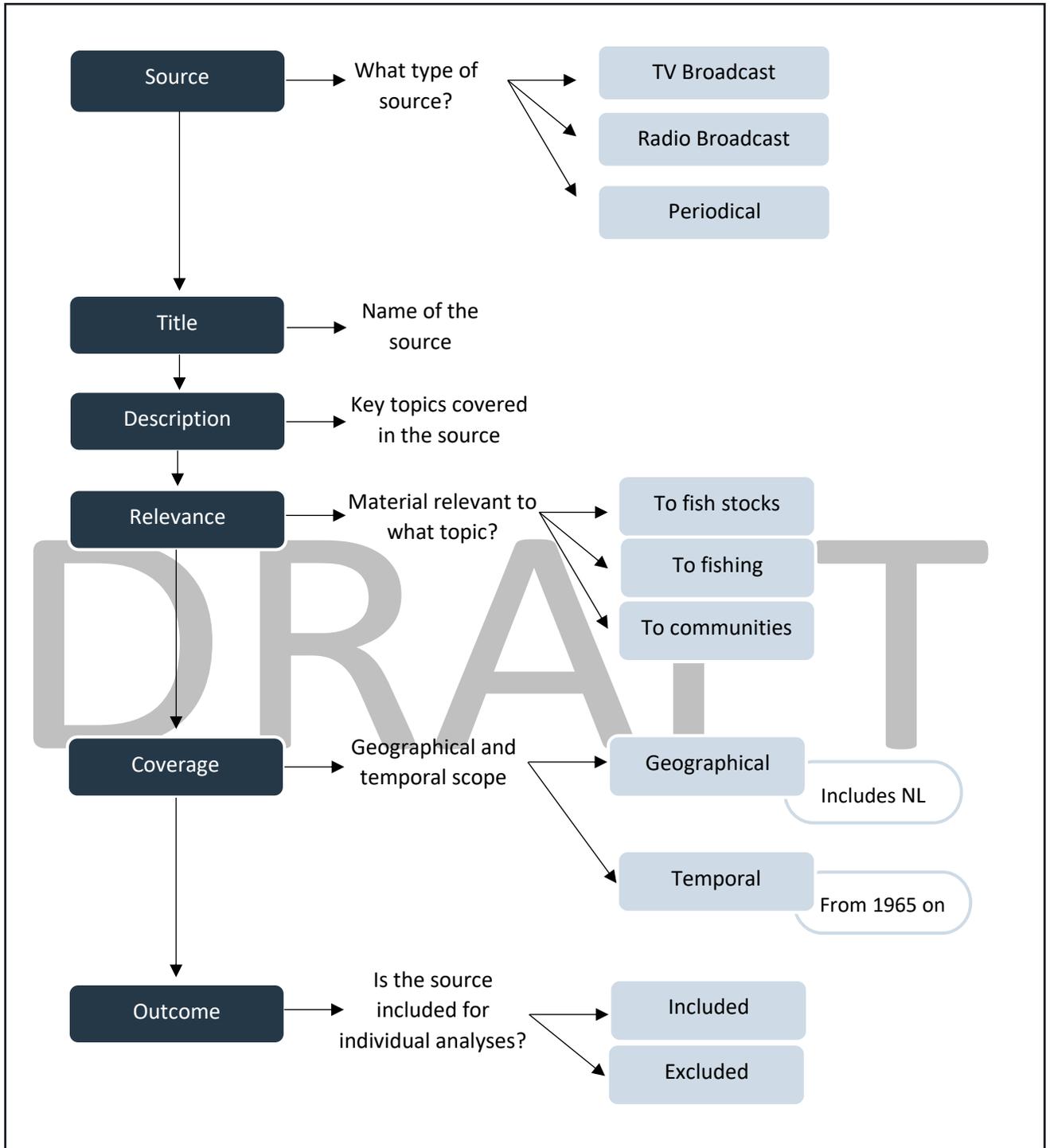
Figure 2. Elements used to describe the key information about source materials in the master sheet. Figure compiled by authors.

The next phase of the protocol involves the **screening** process. We screened sources based on a set of pre-determined criteria (Petticrew and Roberts, 2006), such as the relevance of the source in relation to the objectives of the study, and its geographical and temporal scope. Table 3 includes these criteria and the corresponding protocol with questions to assess inclusion or exclusion.

Table 3. Inclusion criteria for screening protocol

Criteria	Question	Response	Action
Relevance (fish stocks)	Does this source include materials that primarily refer to fish stocks or marine ecosystems off the coasts of Newfoundland and Labrador?	Yes	Note in master sheet, and continue through protocol
		No	Note, and continue
Relevance (fisheries)	Does this source include materials that primarily refer to fisheries in Newfoundland and Labrador?	Yes	Note in master sheet, and continue through protocol
		No	Note, and continue
Relevance (Coastal fishing communities)	Does this source include materials that primarily refer to the coastal fishing communities in Newfoundland and Labrador?	Yes	Note in master sheet, and continue through protocol
		No	Note, and continue
Coverage (Geographical)	Does the source comprise a geographical scope that includes Newfoundland and Labrador or off the coast of NL?	Yes	Identify and note the geographical scope, and continue
		No	Note, and exclude from study
Geographical (Temporal)	Does the source include materials within the temporal scope of the database (approx. 1965 to present)?	Yes	Identify and note the temporal scope, and continue
		No	Note, and exclude from study
Outcome	Is the source included in individual material analysis?	Yes	Note as included
		No	Note as excluded
	Have the source been analyzed individually?	Yes	Note
		No	Leave it blank

Table compiled by authors based on review of pre-determined criteria adapted from Petticrew and Roberts (2006).

After collecting and screening the materials, we **organized** them into a more specific database file containing the material description, location and date of publishing, description of geographical and temporal scope, codes used, values referred within the content, observations about value constructs,

and general notes (Appendix 2). Due to time constraints and the purpose of this exercise, we only selected a sample of the materials gathered for individual analyses.

Analyzing the Materials in the Value Database

In the screening phase, we analyzed specific sources in relation to existing value sets related to community values (i.e., human goals related to social and environmental interactions), and environmental values. We used content analysis to code and analyze the material. *QSR NVivo 12* was used for developing codes.

Findings and Discussion

Meta-analysis

We identified eight potential source of individuals materials from the Center of Newfoundland Studies. Those included two television broadcast, one radio broadcast, four periodicals, and one virtual platform. From the TV broadcasts, we identified a total of 203 individual episodes that were available and accessible for analyses. The content of these 203 episodes were briefly described in the value database, following the protocol on Table 3.

The two television sources selected were the *Land & Sea*, and *Decks Awash* TV Series. Land & Sea, broadcasted by the Canadian Broadcast Corporation - CBC, has been on air since 1964. The Decks Awash TV Series documented community and fisheries issues in Newfoundland and Labrador between 1960s to early 1990s. The program was produced by the Extension Service of Memorial University. The Decks Awash series set the stage for the production of Land & Sea (Varga, 2015). Both the Land & Sea and Decks Awash document lives, livelihoods, and lifeways in Newfoundland and Labrador's coastal communities through interviews with local residents about their perspectives on marine related issues. A total of 162 episodes of Land & Sea were identified in the meta-analyses. Of those, 87 (53%) were excluded from the study based on the inclusion protocol criteria. Forty-one episodes of the Deck Awash show were identified; 20 (48%) were excluded from the study. Each episode of these programs lasted approximately 30 minutes. Time to analyze and code each episode ranged from 45 to 70 minutes.

The radio broadcast identified was CBC St. John's *The Broadcast*, formally known as *The Fishers Broadcast*. Since 1951, this program explores the stories of coastal communities and the people who depend on the sea. Four periodicals were included: *Decks Awash*, *Them Days*, *The Navigator,* and the *Vital Signs Report.* The Decks Awash periodical magazine was produced after the TV show caring the same name by Memorial University's Extension Services. This periodical published sociological materials about people in Newfoundland and Labrador between 1963 and 1993. Them Days is a quarterly magazine based in Happy Valley-Goose Bay, Labrador, that publish stories about life in Labrador, including fishing, since 1973. The publication is part of an effort of the Them Days Charity dedicated to collect and protect the stories of Labrador. *The Navigator* is a monthly publication devoted to the fishing industry off the east coast of Canada since 1997, featuring topics like fisheries management and regulations. *The Vital Signs Report* is an annual report co-produced since 2014 by the Harris Centre, Memorial University, and the Community Foundations of Canada. *Newfoundland and Labrador Heritage* is a virtual platform based at Memorial University that compiles materials about the province's history, culture, and geography. The Heritage Website was launched in 1997, and provides a variety of materials, including text, videos and photos.

Individual Material – Pilot Study with TV Broadcasts

We piloted our database protocol with the two TV broadcast sources – the *Land & Sea*, and *Decks Awash.* To pilot, we conducted a rapid appraisal of these sources and value statements in 28 episodes as an illustration of how to assess human values related to fishing, fish, and the ocean. Of those, 15 episodes were from Land & Sea, and 13 from Decks Awash. Table 4 summarizes the analyses of the 15 episodes from Land & Sea. These episodes were recorded between 1975 and 1992. As observed, value types were very similar across this time period.

Table 4. Summary of individual material analyses from Land & Sea.

	Source	Description	Temporal Scope	Geographical Scope	Codes used	General Notes
Fogo Island Fishing	Land & Sea	Conversation with some residents and members of the Fogo Island Shipbuilders Cooperative. The Cooperative was building longlines and managing the salt fish plant. There was a new high school and paved roads. The town was coming back from the brink.	1975	Fogo Island	Community values - sense of place; Instrumental - monetary; Relational - livelihood; Environmental - mastery.	"The salt cod industry has been ignored by politicians, oppressed by big business man, neglected by technology". Pressure from the offshore fishing. Fishing collapsing. Starting to build bigger ships to fish in other grounds and other species. Adapt to new methods of fishing. Turbot and flounder replaced cod with the long liner fishing boats. People were willing to stay and make a living there. "Preserving an old way of life, keeping the old and tradition way of life of our ports intact." Fishing viewed as a way of life. Strong sense of place and attachment. Feeling of pride and cooperation in Fogo among community members.
Fogo Island Cod Trap	Land & Sea	Cod and turbot fishery off the Funk Island Bank. This 1979 episode visits the Brown family's generations old cod trap off Joe Batt's Arm and the Best family's Japanese cod trap.	1979	Fogo Island	Community values - skills, sense of place; Instrumental - monetary; Relational - livelihood; Environmental - mastery.	Moving from cod to turbot - more profitable. Change in fishery development moving closer to shore. Using the Japanese trap for cod. Fogo moving to freezing facilities that can help and improve financial possibilities for fishers. First Japanese trap came in 1968 – "better than NL trap as it can keep the fish longer". Fishing skills passing from one generation to another. Fish is a source of income. Adapting to new species that are more profitable.
Squid Jigging Grounds	Land & Sea	The thriving squid fishery of the 1970s in Plate Cove East and other places in this archival episode of Land & Sea.	1970s	North East Coast / Bonavista Bay	Relational - livelihood. Instrumental - monetary. Environmental - mastery	After many years the squid returned, and "it is a convenient fishery". Most of squid goes to Japan, then Europe (mainly Spain). Start of quotas for squid. Fishers couldn't sell. A soviet vessel is allowed to buy the surplus of squid from the fishermen. Squid worth more than lobster. Cod is in decline. Fishers don't know what happened with the squid market. Younger are worried. "Fishers had no voice!"
Bay de Verde Cod Fishery	Land & Sea	The community of Bay de Verde was founded in 1662. This episode explores the trap skiff and rodneys used in the cod fishery.	1981	Bay de Verde	Community - affection, skill, power, respect, enlightenment. Environment - mastery. Instrumental - monetary. Relational - recreational, livelihood.	Story about cod trap fishery. Fishers are optimistic with fish. Draggers are taking over the cod trap. Cod trap fishery has been bad in the past four years. Problem with selling the cod. "We have people who can only fish in the summer". Fish valued to insure livelihoods; adaptation to satisfy the market.
When Cod was King	Land & Sea	The rural fishing community of Petite	1983	Burin Peninsula	Community - affection, sense of place,	Fishing to survive. Trawler fishing. Pollock fish seems to be growing fast. Most were small boats. Little desire to

		Forte on Newfoundland's Burin Peninsula when the cod fishery was booming.			enlightenment. Instrumental - monetary. Relational - subsistence.	change to bigger boats (longlines). License for lobster and cod. Hard for younger fishers – "there is no license for them". Adapting to different fishing gear to fish more and other species. Subsistence fishing. Strong community ties.
A Visit to Francous	Land & Sea	The community of Francois on NL's south coast, and their reliance on handmade wooden boats.	1984	Francous	Community - wellbeing, wealth, sense of place, affections, skill. Environmental - mastery. Instrumental monetary. Relational - subsistence, livelihood.	Fishing with longline. All seasons fishing. Change from dories to longliners; change to modern boats. "Trolley is a better method, can fish all year around". Selling the fish has been a problem for the community. Economic challenges influenced the adoption of new technologies to increase fishing productivity. '"Fishing is survival".
Conception Bay Capelin for Japan	Land & Sea	The seiners and cod trap fishers of Conception Bay harvesting capelin for Japan.	1988	Conception Bay	Instrumental - monetary. Relational - livelihood, subsistence. Environmental - mastery.	Use of technology. Capelin fishery is an industry. "Cod has been failing, so the capelin is saving the fishery". "Fishing is no longer a family enterprise. It is big business now!"
Eel Fishing Near Glovertown	Land & Sea	The Eel fishery on the Terra Nova River. The Newfoundland Eel was considered very high quality in the European market.	1980s	Bonavista Bay	The Eel fishery on the Terra Nova River. The Newfoundland Eel was considered very high quality in the European market.	Fishing for eel on Terra Nova river to complement the income; exported to Europe. More money on eel than on cod or macron.
One Armed Fisherman	Land & Sea	The story of Herb Pittman, a longliner operator out of Englee	1980s		Instrumental - monetary. Relational - livelihood. Environmental - Altruistic.	Sea is seen as financial prosperity, wealth and wellbeing. Recognition that people are catching small fish that should be preserved longer. "If we could get a crab license it would be the main fishing." Sometimes crab is get bycatch but there is no market for crab. Should be more control on the gillnets.
St. Brendans Stand its Grounds	Land & Sea	The community of St. Brendan when resettlement swept Bonavista Bay in the 1950s.	1980s	Bonavista Bay	Community - sense of place, affection. Relational - livelihood, subsistence. Environmental - mastery	Sense of place. An old fisherman would say to his son: "if you can, get out of this business". Some people refused to leave the area with the resettlement. Lobster fishing. Salmon fishing has been poor. Fishers blame on new regulations which push back the open of the season in 3 weeks - "we lost the good weeks to fish". Used to be very good as compared to now (1980s). Fishers would go to Labrador early in June; but cod and salmon declined there, and the price decreased. "We had to give up". Inshore cod trap fishery is. "Selling fresh is new for the local fishery. Collecting boats come to get the fish. Leftover will be salted".
Change Island	Land & Sea	The fresh fish plant on Change Islands and the	1980s	Change Islands	Relational - livelihood. Instrumental - monetary.	Fishing for livelihood. Cross generation. People left and came back. Important for inshore fishing. Salt fish.

		role it played in the comeback of the fishery on the islands.			environmental - mastery. Community - sense of place.	"Time to stop tradition and make some money". "The bank should be closed." Trap fishing is coming back. Fresh fishing plants have trouble selling all the fish that is caught. Previous year there were no fish in the ocean.
Cod Trapping on Lords Cove	Land & Sea	Paul Harrington goes out fishing with Peter Hennebury in Fortune Bay in his trap skiff the "Lady Di".	1980s	Burin Peninsula	Community - sense of place, wellbeing. Instrumental - monetary. Relational - livelihood. Environmental – mastery.	Fishing new species to attend financial needs. Family fishing. Fishing for money. Industry. Sense of place and wellbeing. Trapping for cod in the summer. "Plants were only taking small fish, so a lot were dumped." "Russian boat came and was buying everything." Previous year the fish was smaller. Because of the decline in squid fishing started fishing macron.
Conception Bay North fishermen on the Labrador	Land & Sea	A look back on the many links between CBN communities and coastal Labrador communities.	1980s	Conception Bay North	Environmental - mastery. Relational - livelihood. Instrumental - monetary. Community - sense of place.	Fish exported from Labrador. In Labrador the cod is practically gone. Native people of Labrador and northern people of Newfoundland need the fish and fishing. Fish as secondary industry. Fishers are independent in the market. "
The Pollock Fishery	Land & Sea	Cec Rideout and his crew participating in the Red Fish, Pollock fisheries and the winter cod fishery off the south coast of Newfoundland.	1990	Port au Basque	Environmental - mastery, egoistic. Instrumental - monetary. Relational - livelihood.	Fishing is business. Changing to dragging to adapt to the new fishery. Changing the boat. Increase of fish pressure and quotas. "When you have 20 boats fishing at the same time, fish will finish pretty quick". "It seems to have more fish, but we can't fish because of the quotas". "Pollock as an alternative, sending to NS; it is a fish we could fish night and day. In a global scale there are more pollock than cod. Adapting to new technologies to pay the bills". Big boats operating.
Townie Fishermen, the Hillier Family	Land & Sea	The story of one fishing family facing the shutdown of the northern cod fishery in 1992.	1992	St John's	Environmental - mastery, biospheric, altruistic. Instrumental - monetary. Relational - livelihood. Community - affection, enlightenment, wellbeing.	Fishing as way of life. Heritage. Fishing is not going well. Overfishing. "Government should stop increasing the boats". "We overfish! We abuse! Not enough cod for everybody. Something has to be done". Mismanagement. 'I don't want compensation, I'd be fishing instead'. "No sense for the moratoria."

Table Adapted from CBC Archival online, and from authors review of the episodes.

Despite the time frame of these sources being in accordance of our criteria, we faced some challenges. For example, when considering the full list of materials (n=203), the individual sources were not always relevant to the objectives of this study, albeit the high rate of episodes excluded from the analyses. In addition, the nature of content seemed to change over time. For example, interviews in Decks Awash became more edited and controlled, perhaps reflecting a modernization of broadcasting practices. In the Land & Sea, it was possible to identify a shift in the focus of the program. While the episodes from the sixties to the late nineties would cover topics almost exclusively related to the sea, more recent episodes included general themes with no relation to marine issues (e.g., gardening, horses, cooking). Yet, when issues on fish and fisheries were addressed in those more recent episodes, interviewees would often refer to it as something of the past, or as a "memory of the old days". Another important observation refers to the fact that in most recent episodes (from 2000s on), environmental issues related to marine pollution and the decrease of fish stocks became more evident.

Interestingly, the narrative related to Atlantic cod stock issues is observed among coastal communities many years before the moratorium. In an episode about the fishing industry in Fogo Island from 1975, for instance, a fisherman shares his perceptions about the salty cod industry, saying that "the industry has been ignored by politicians, oppressed by big business man, and neglected by technology". The decline of Atlantic cod is known by people in this pre-moratorium decade. A boatowner and captain working off the coast of Labrador in the early 1980s even suggests that "we should be conserving the Northern bank from December to February… it is a period of spawning and that is a period we should leave alone. […] the fish would reproduce [during this period] and come back. [nobody] would have to worry about the coastal people of Labrador". In this episode, the fisher points out that "in Labrador the cod is practically gone".

The observed change on the focus of the Land & Sea could be a sign that fishing is not the main subject in the province anymore. While in the past, fishing was an activity that would pass on from one generation to the other, the reality nowadays is different. For instance, less people are involved in the fisheries and the young are transitioning to other jobs and occupations. The number of commercial fishing license holders, for example, has been declining since 2005 -- from 4960 licenses in 2005 to 3787 in 2015 (VitalSigns, 2017).

Our findings revealed an awareness of overfishing among some interviewees. One fisher in the early 1980s, for example, stated that "we are catching the fish that are too small, and this is not right". Other said, in 1992, that "we overfish! We abuse! [and there is] Not enough cod for everybody. Something has

to be done". Despite this recognition, however, people continued to fish and adapt their fishing practices whether through changing fishing gear or the target species. Although a sense of connection with the sea and the coastal way of life was observed in these preliminary sources based on the dependence on the sea as a source of food and income, our findings also showed that for the sake of maintaining their livelihoods, people would continue fishing regardless of the decline in fish stocks. It is worth noting, however, that those findings are preliminary and further analyses including other sources are still necessary.

At the values level, our analysis shows references to 16 types of values to varying extents (Fig. 3). Across both sources used as case study, the majority of values were related to environmental values with a total of 72 nodes across 28 episodes. Of those, the most expressed value was the monetary value of fish to people (i.e., instrumental and livelihood values). Fish as sources of income and enhanced livelihoods was often linked with the environmental value, 'mastery'. This meant that harvesters switched to new technologies to harvest different species and to improve processing reflecting a desire to master changing ecological and economic conditions – "[we have] to adapt to new technologies to pay the bills", said a fisher in 1990 about transition from cod to pollock fishing. In 1975, people in Fogo, aware of the collapse of fish, had adapted to new methods of fishing, with turbot and flounder replacing cod with the long liner fishing boats. Four years later, more fishermen in Fogo were moving from cod to turbot as turbot was more profitable. In five episodes of Decks Awash from the mid-1970s, interviewees remarked that when fish were scarce, harvesters needed to improve technology and promote higher grade catches to get "first fish and first prices".

Figure 3. Value types identified from a rapid scan of Decks Awash from 1966 to 1977 and Land & Sea episodes from 1975 to 1992. Values were aggregated into community and environmental values. The number of coding references refers to the number of times that the value was identified across the sources.

The least identified environmental values were 'recreational', 'biospheric' and 'egoistic'. These three values were identified only once across the individual sources. 'Altruistic' values appeared three times. Altruistic values reflect individual concern for the welfare of people before considering the welfare of the environment. This value was observed an episode of Land & Sea from 1992 called "Townie Fishermen, the Hillier Family". This particular episode documents the life of a fisher family in St john's and how they were coping with the cod moratorium. This family was willing to continue their fishing practices since fishing was "a way of life". They were aware of overfishing off the coast of Newfoundland, that there were not enough cod for everybody, but thought the moratorium was unnecessary. Instead of receiving compensation from the government, they would rather be fishing.

Despite they awareness of overexploitation of fish and that "something [had] to be done to prevent the collapse of cod", the family was concerned with the welfare of the fishers and the impact of restrictions on a traditional activity.

While there was an orientation toward economic-related instrumental and relational values, there were many references to non-economic community values, such as sense of place, affection, well-being, and the pursuit of education and skill. This suggests that while mastering the harvest of fish was instrumental for enhancing livelihoods, the overall desired outcomes (i.e., effects of catch rates) and means to achieve those outcomes (e.g., through collective action or government programming) were broader than merely wealth accumulation and the leveraging of financial material assets.

From this preliminary analysis of sources published between 1966 to 1990, our findings did not show a clear shift in values towards fish, fishing or the ocean over time. It was observed, however, changes on the focus of these tv programs, which could indicate an overall shift of public attention to matters that are not necessarily related to the sea. Further analyses of more recent sources are necessary to conduct longitudinal analyses. The community value 'power' seems to be important among the sample, as well as sense of place. The 'power' value is reflected in 'mastery' value towards the ocean. Sense of place was a strong component of people's narratives. Interviewees would express sense of place, for example, when saying that they would not leave the community even with the decline of job opportunities, or when those who left returned. Others would just say that their "roots are in the fisheries", thus indicating a sense of connection to the local environment in which they live. Although fishing was seen as part of the tradition and way of life, one fisherman made clear that if possible, his sons would "get out of this [fishery] business".

Similar to our preliminary finds, (Song, Chuenpagdee, & Jentoft, 2013), identified the economic and utilitarian values as one of the most cited in the fisheries governance literature. In a review of value types within this theme, the authors identified 24 thematic values, ecosystem conservation being the most prominent, followed by wealth, knowledge and secure livelihood. Based on that, we say that our preliminary findings seem to corroborate with related studies.

Although values are typically stable cognitive elements of people's psychological characteristics, values can change. We suspect that people's values in relation to fish, fishing and the ocean in Newfoundland and Labrador might have changed over the course of this period in response to internal or external factors. For instance, factors such as the changing environmental conditions, evolutions/developments in policy, economy, social life, and individual awareness and development can influence the

prioritization of values held by individuals and communities -- that is, one becoming more important than another (Norton and Steinemann 2001). Such changes are ubiquitous, as for example, with peaks and valleys in fish stocks, fisheries and management changes, alterations to family and community structures, and emergent emphases on new industries (i.e., oil and gas, agriculture). Identifying if changes in value may have occurred in the past 50 years goes beyond the scope of this report, as our goal at this stage was to start building the value database and make preliminary analyses of values across individual sources. Future analyses should be made to evaluate whether values have changed over the past 50 years. If changes in values can be identified, then researchers may be able to track the potential external factors that caused those changes with the hope to anticipate future shifts in values.

Further investigation is still necessary. The next step of this study is to collect, screen, and organize more diverse sources. With the addition of more diverse sources, at the database level, we anticipate more inevitable barriers related to comparisons across dissimilar sources. This will reveal opportunities to develop insights on how to use and build such database, and hence, conduct transdisciplinary research of secondary sources. At the values level, the combination of values sets seemed to provide interesting patterns and reveal an opportunity, with more sources, to critique and revise a rough values framework that spans different elements of coastal and marine systems. The integration of Opinions sections from periodicals, for instance, can enhance our understanding of people's perceptions towards marine issues in Newfoundland and Labrador. By integrating more sources, we contribute to a "a more systematic and holistic understanding of values" (Song et al., 2013: 173).

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