

LAPPEENRANTA-LAHTI UNIVERSITY OF TECHNOLOGY LUT
School of Business
Master's Degree Programme in Strategy, Innovation and Sustainability

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**THE CHARACTERISTICS OF SUSTAINABILITY-ORIENTED VALUE CO-
CREATION IN THE FINNISH COMMERCIAL INLAND FISHERY**

Master's Thesis

Examiners: Professor Laura Albareda
Associate professor Anni tuppura

ABSTRACT

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The characteristics of sustainability-oriented value co-creation in the Finnish commercial inland fishery

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Addressing the small percentage of commercially utilizable cyprinid populations together with rising awareness and demand for sustainable domestic fish products among Finnish consumers, this thesis examines the characteristics of sustainability-oriented stakeholder value co-creation process within a multi-stakeholder network utilizing a case study research design. The context of the thesis study is a non-profit fishery development project, located in the Eastern Finland. The study examines the characteristics, drivers, and barriers of the studied project stakeholders, affecting the outcomes of sustainable value co-creation process. The case project outcomes show how aspects of business sustainability are transformed into a concrete business case, illustrating how sustainable value is co-created and shared by multiple stakeholders with different capabilities and even conflicting objectives. The collection of qualitative data was organized by conducting semi-structured interviews of four studied project stakeholders and utilizing secondary sources of data, such as author's notes. The findings of the study show that the key drivers of fishery stakeholders to participate in the sustainable value co-creation are development of automated processing of cyprinids, improving value chain efficiency and development of circular business models. From a managerial perspective, the results of the study show that the voluntary value co-creation emerges through the non-profit project funding, common issues at stake, networking synergies and collaborative resource integration practices.

TIIVISTELMÄ

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Kauppatieteet

Esko Helansuo

Kestävän arvon yhteisluonnin ominaispiirteet Suomen kaupallisessa sisävesikalastuksessa

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Pro gradu -tutkielma käsittelee kestävä kehityksen ja arvonluonnin teorioita ja soveltaa niitä Suomen kaupallisen sisävesikalastuksen alalle. Tutkimuskysymyksenä on selvittää arvonmuodostuksen ja yhteisluonnin ominaispiirteitä näkökulman ollessa liiketaloudellinen.

Tutkimus on tapaustutkimus, jossa tutkimuskysymystä tarkastellaan paikallisen tutkimus-, kehitys- ja innovaatio -hankkeen viitekehityksessä Itä-Suomessa. Hankkeen tavoitteena oli särkikalojen taloudellisen hyödyntämisen kehittäminen kiertotalouden keinoin. Tutkimus toteutettiin laadullisin tutkimusmenetelmin hanketoimijoiden haastattelujen sekä kirjallisuuden avulla.

Tuloksina esitetään kestävä kehityksen periaatteiden mukaisen arvon yhteisluonnin malli sisävesikalastuksessa. Arvonluontiin vaikuttavia tekijöitä ovat sidosryhmien ominaisuudet ja resurssit sekä kannustimet ja esteet arvon yhteisluontiin liittyen. Hankkeeseen osallistuneiden sidosryhmien kannalta tärkeimpiä kannustimia yhteiseen arvonluontiin osallistumiseen ovat särkikalojen koneellisen käsittelyn kehittäminen, toimitusketjun tehostaminen sekä kiertotalouteen pohjautuvan liiketoimintamallin kehittäminen sekä verkostoituminen muiden kalatalouden toimijoiden kanssa. Käytännön ohjeina todetaan, että kehityshankkeisiin suunnattu tutkimusrahoitus edesauttaa vapaaehtoisuuteen perustuvaa osallistumista kestävä arvon yhteisluontiin.

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The thesis is based on a sustainability-oriented fishery development project, managed in 2018 and 2019 by a local university of applied sciences, located in the region of the Eastern Finland. The aim of this non-profit fishery development project was to apply the principles of sustainability and circularity into the domestic fish industry by improving the value chain of cyprinids and other undervalued inland fish species, thus resulting in increasing volumes and variety of new sustainable domestic fish products for consumers.

As a master's degree student in strategy, innovation and sustainability program, this thesis challenged me to apply my theoretical knowledge in practice, greatly deepening my understanding of the strategic stakeholder management and value co-creation related issues, especially in the field of the Finnish commercial inland fishery. In conclusion, I want to express my sincerest gratitude especially to my supervisors Laura Albareda and Anni Tuppuru, and all people who have been supporting or involved in this fascinating mission towards a sustainable Finnish commercial fishery.

Yours sincerely,

8.12.2021

Esko Helansuo

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1 INTRODUCTION

Cyprinids constitute a noteworthy natural resource potential for sustainable value co-creation in the context of the Finnish commercial inland fishery business (The Finnish Natural Resource Institute, 2021). However, at the same time the percentage of commercially utilizable-sized cyprinids among the total catch potential of cyprinids is small (Suomi, 2018). According to the study, this is also one of the major barriers to focus on fishing roach and bream among professional fishermen of the inland fisheries. Moreover, by fishing cyprinids and other undervalued fish species, it is possible to reduce eutrophication and manage fish stocks along with co-creating sustainable value by means of a circular economy (The Finnish Innovation Fund Sitra, 2021). In addition, consumer awareness and demand for sustainable domestic fish products has increased steadily. Hence there are a number of economic, ecologic and ethical drivers for multiple inland fishery stakeholders to improve the sustainable supply of cyprinids and other side streams for use in the Finnish fish industry.

Addressing the need for developing the value chain of cyprinids in compliance with the practices of sustainability and circular economy, this thesis characterizes the phenomenon of sustainable value co-creation by examining stakeholder characteristics, drivers and barriers to sustainable value co-creation within the Finnish inland fishery business environment using a case study research design. The context of the study, the case project, was managed by a local university of applied sciences in 2018 and 2019. The purpose of the project was to improve the supply chain of domestic inland cyprinids and to find solutions to the central issues of exploiting them in industrial food production by following the principles of circular economy. Project actions included developing logistics operations and automated handling and processing of cyprinids and fish fractions, for instance refining fins as ecological products for pets, resulting in a sustainable, circularity-based business model.

The purpose of the study is to find out how sustainable stakeholder value is co-created in the context of the case study project within the Finnish inland fishery business environment. In this accordance, the study revolves around sustainability, stakeholder and value co-creation theories, frameworks and concepts and utilizes them in creating the theoretical framework for the study.

The linked structure of the study characterizes sustainability-oriented value co-creation phenomenon within the domestic commercial inland fishery.

Managerially, this study provides new insights for project managers in the fishing industry, planning to improve the exploitation of cyprinids and related side streams in cooperation with fishers, fish processors, logistics service providers and fish trade businesses. Furthermore, the thesis provides both theoretical and practical insights and solutions for future co-creation of sustainable value for the benefit of inland fisheries and local economies. Academically this thesis provides outcomes for further studying of sustainability-oriented value co-creation.

The qualitative study and its results are based on the fieldwork case study of the inland fishery development -targeted project, executed by the local university of applied sciences. The stakeholders who participated in the case project, represented different actors, typical to the inland fishery ecosystem. Thus, the stakeholders involved in the study are not similar, as to get the extensive picture of the stakeholder value co-creation phenomenon, it is necessary to choose the most diverse examples of stakeholders to be examined in the thesis. Thus, this is an intentional research design choice with an aim to provide more informative and extensive results.

Data for the research was collected by opportunistic, work-oriented means, whereas primary data was obtained through conducting stakeholder interviews and secondary data was gathered from sources of open access and project or stakeholder related notes, websites, and documents.

1.1 Definitions of key terms

Referring to the introduction of the study, this thesis examines and characterizes the phenomenon of sustainability-oriented stakeholder value co-creation in the context of the Finnish commercial inland fishery related ecosystem. The title of the thesis includes the concepts of inland fishery, stakeholder, value co-creation and sustainability. As there is specific vocabulary used in the Finnish commercial inland fishery, this chapter explains the meanings of the industry specific terms and concepts in the context of this thesis.

Fishing industry

The fishing industry refers to industrial activities related to either fish harvesting, processing, storing, transportation, promoting and fish product sales.

Commercial fishing is determined as delivering fish and products related, intended for use in industry as raw material as food for consumption.

Fishery is referring to all the activities that lead to fish harvesting from the aquaculture. It may refer to the sum, range and or a combination of either some or all activities, people and technology involved and used for catching fish from nature or raising by industrial means. *Inland fishery* refers to any activity related to harvesting fish from inland waters.

Fish processing is related to the comprehensive set of processes that occur between the time of catching or harvesting and delivery of the final product to consumer. Besides fish, the term covers any organisms that are commercially harvested either in wild or industrial water system. (Food and Agriculture Organization of the United Nations, 2021)

Stakeholder

According to one of the early developers of the stakeholder theory, Freeman (1984), stakeholder refers to any entity or individual who can influence or is influenced by the organization's objectives.

Sustainability refers to the capacity of Earth's resources that human civilization can utilize in a way that enables them to co-exist (James et al. 2015; Kuhlman et al. 2010). According to Brundtland's (1987) definition, sustainability is about "meeting the needs of the present generation without compromising the ability of future generations to meet their needs". In academia sustainability is described as interdependence of environment, economy and society.

Circular economy refers to a system of economic means with an aim to diminish waste towards the continuity in use of resources. Circular economy is built on reuse, sharing, repair,

refurbishment, remanufacturing and recycling of resources to create systems of closed loops, aiming to minimize side streams, waste, emissions, and pollution while optimizing the use of resources inputs. (Geissdoerfer et al., 2017)

Value co-creation is creation of value by multiple stakeholders, as an activity among a variety of stakeholders within networks by cooperating and exchanging resources across and through networks (Vargo & Lusch, 2008).

1.2 Research problems, goals, and questions

The general purpose of the study is to find out answers to the research problem of why and how inland fishery stakeholders with varying resources and possibly conflicting objectives come together to co-create sustainable value utilizing their resources and capabilities. In addition, the purpose is to get a comprehensive picture of the Finnish inland fishery business related value co-creation process embedded with characteristics of individual fishery stakeholders and their drivers and barriers, affecting their motivation to engage in the value co-creation process. Study focuses on the sample set of four essential case project stakeholders: a local fishery supporting and funding organization, commercial professional fisherman, fish processing cooperative and a local university of applied sciences, accountable for the case project's management and acting as a resource integrator between multiple stakeholders. The thesis also aims to generate new academic and managerial implications for project managers, entrepreneurs, and researchers regarding development of the Finnish commercial inland fishing industry towards truly sustainable and circularity-based business models.

In an attempt to receive a comprehensive understanding and picture of the sustainability-oriented value co-creation phenomenon, three research questions (RQ) were formulated, examining why and how different, even competing stakeholders come voluntarily together to co-create sustainable value.

The ultimate research question (RQ) this thesis attempts to answer is:

RQ1: How is sustainable value co-created in the Finnish commercial inland fishery?

Thus, the ultimate purpose of the study is to characterize how sustainable value is co-created in the Finnish inland fishery environment by multiple stakeholders.

To achieve this objective more precisely, I produce the following sub-question (SQ): SQ1.

SQ1: What characterizes sustainability-oriented stakeholder value co-creation within the Finnish commercial inland fishery?

The other objective, related to the ultimate purpose of this study, is to find the factors that either support or hinder the process of sustainable value co-creation. In this accordance, following research questions are produced:

RQ2: What are the main drivers of the individual stakeholders that drive their participation in the sustainability-oriented value co-creation process?

RQ3: What are the main barriers that the case project stakeholders face, related to the sustainability-oriented value-co-creation process?

The first research question and its sub question aim to draw a picture of the common characteristics of the Finnish inland fishery related sustainable value co-creation phenomenon.

The second research question is to find out the macro and personal level drivers of case stakeholders that motivate them to participate in the sustainable value co-creation process.

The third research question aims to identify the personal challenges and fishery industry level barriers that stakeholders face while co-creating sustainable value with other stakeholders in the fishery business environment.

To answer the research questions, empirical data is utilized and analyzed concerning the case project and the Finnish inland fishery related case stakeholders and their operational environment.

1.3 Research framework and context

Figure 1 illustrates the thesis related research framework. The theories related to sustainability, stakeholders and value co-creation are presented in detail in the theoretical chapter. The main aspects and implications of the inland fishery business environment along with sustainability and circular economy, fishermen and fish processors are discussed in this chapter, based on the relevant available literature. The value creation concept involves issues related to strategy and business models embedded with sustainability and its relation to the value creation context of the study. The stakeholder section discusses aspects related to stakeholder identification, salience, business ethics and strategic management.

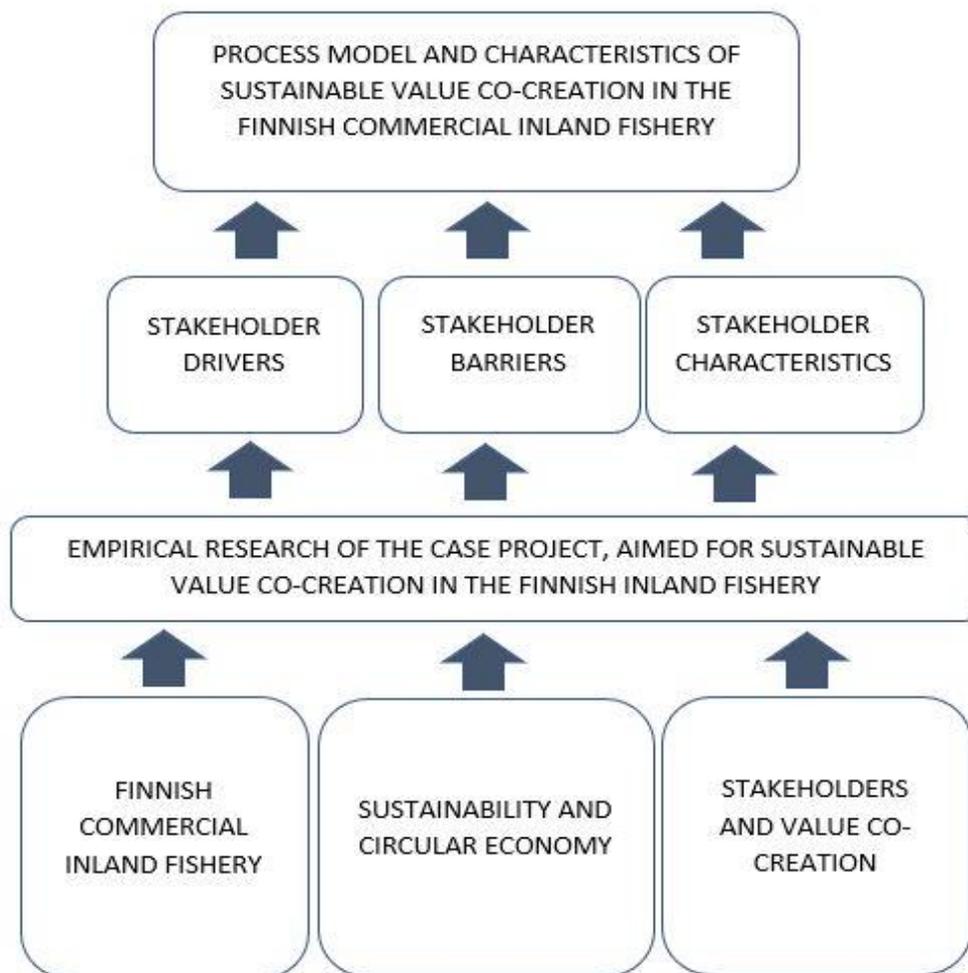


Figure 1. Research framework of the thesis.

The fundamentals and determinants of the empirical part of the study are built on the theories and literature. This empirical part consists of sample set of four case project related fishery stakeholders. Their traits combined with the case project characteristics of the value creation process provide information to answer the first research question, or more precisely the sub question (SQ1) about common characteristics of the sustainable stakeholder value co-creation in the Finnish inland fishery business environment. The empirical section of the thesis also provides information on the drivers and barriers of stakeholders related to value co-creation in the inland fishery both on personal and macro levels. Figure 2 illustrates the process, through which the inland fishery stakeholders co-create value.

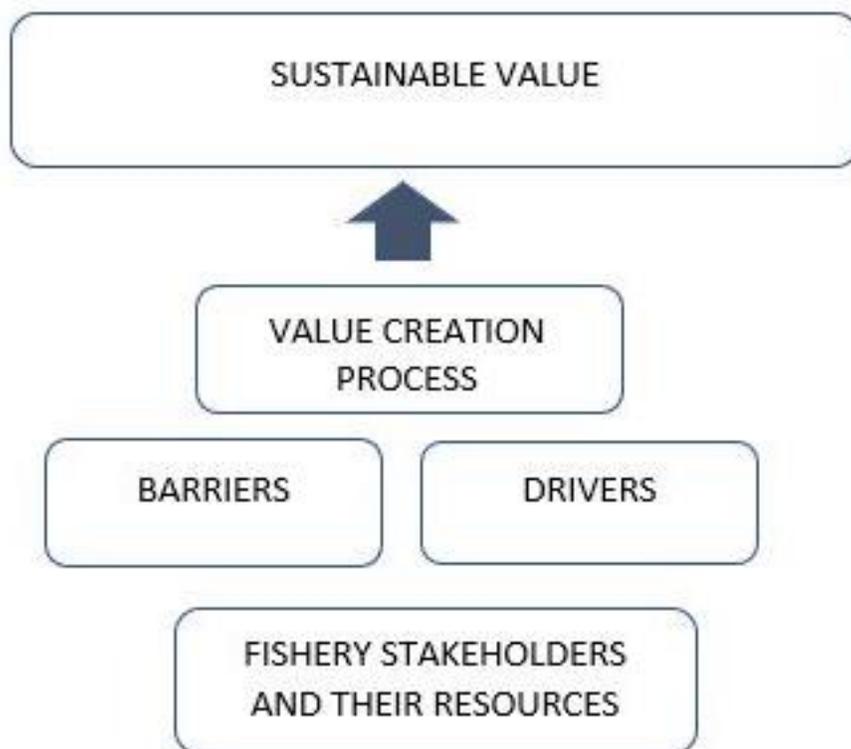


Figure 2. Illustration of the research setting of value co-creation process within the business environment of the Finnish commercial inland fishery.

The research setting is that there are certain macro and micro level characteristics, drivers and barriers in the business environment of the Finnish inland fishery, forming the basis for sustainable value creation. The stakeholders studied in the thesis include professional fisherman, fish processing cooperative, local funding and fishery development organization and local university of applied sciences, being responsible for the case project's management. Characteristics, drivers and barriers on macro and personal level either support or hinder participation of the stakeholders in the sustainable value co-creation process and the outcomes of the process itself.

1.4 Characteristics of the Finnish commercial inland fishery industry

The Finnish fishing industry consists of commercial fishermen and firms, related to commercial fishing, fish farming, processing, and trading of fish. In 2019, the cumulative value of production, of the value chain was approximately €900 million. In this regard, the aim of the Ministry of Agriculture and Forestry and the European Maritime and Fisheries Fund Operational Program for Finland 2014–2020 is to exceed a billion euros by 2020 (Ministry of Agriculture and Forestry of Finland, 2021). As for the tendency, according to the statistics of the Finnish Natural Resource Institute, the number of registered, active commercial fishermen, who actually land fish for the markets, has been decreasing during the last decade. This is mainly caused by harmful catch losses due to the growing seal population in coastal and offshore regions of Finland. On the contrary, the number of registered, active inland fishermen has been growing from 259 fishermen in 2016 to 333 active fishermen in 2019. (The Finnish Natural Resource Institute, 2021)

Finland fishery industry statistics in 2019	Inland fisheries	Marine fisheries
Total catch amount (kg)	6 400 000	135 000 000
Total catch value (€)	17 500 000	37 000 000
Number of commercial, active fishermen	333	1500

Table 1. Finland's commercial fishery industry volumes in 2019. (The Finnish Natural Resource Institute, 2021).

Stakeholders and structure of the Finnish commercial inland fishery business environment

Local inland fishery stakeholders and value chain of fish refer to the following stakeholder groups or entities: commercial fishermen with the ownership of fishing rights, transportation and logistics companies, fish processor firms and cooperatives, retail customers, restaurants, hotels, and consumers.

Local level supportive actors of local fishery industry consider stakeholders such as local action groups (LAG) for supporting and funding the development of fisheries, centers for economic development, transport, and the environment (ELY-keskus), The Federation of Finnish Fisheries Associations *and* universities and universities of applied sciences.

National level supportive entities consider entities such as The Natural Resources Institute of Finland (Luonnonvarakeskus), Finnish Environment Institute (SYKE), and Pro Kala Ry.

Governmental and EU level; commercial fishing policy, funding, and legislation: Ministry of Agriculture and Forestry of Finland, EU Maritime Fund, EU and national legislation for fisheries.

1.5 The structure of the thesis

There are two parts, theoretical and empirical, of which the thesis consists of. The focus of the theoretical part is to review and discuss literature on the aspects, related to the research context. Empirical part instead, focuses on examining and analyzing the case project and four of its essential stakeholders thoroughly.

The first chapter of the thesis introduces the research context together with relevant information on the study. Going further, the study is organized in five chapters to follow. The second chapter focuses on theories and literature related to the research topic, discussing concepts, frameworks and theories in detail related to sustainability, sustainable business models, stakeholders, and

sustainable value creation. The third chapter displays the research framework and how the empirical part is structured. The fourth, empirical chapter, presents the case study project and its essential stakeholders, in framing of the research questions. The fifth chapter is for discussing the findings of the study in the theoretical framing, besides with providing theoretical contributions along with managerial implications as results of the study.

The sixth chapter briefly summarizes the thesis, concluding the research process of the study with the outcomes. In addition, the validity, reliability, and limitations of the study besides with further research suggestions are included in the chapter.

2 SUSTAINABLE STAKEHOLDER VALUE CO-CREATION: LITERATURE REVIEW

Due to the biased distribution of commercially utilizable inland cyprinids population towards dominating share of small fish (Suomi, 2018), there is a need and business case for development and implementation of sustainable business models and practices in the Finnish inland fishery business, aiming to reduce the amount of small cyprinids from inland waters, which balances the distribution of fish populations in terms of their size and age groups. In addition, sustainable business models embedded with sustainable fishing practices also reduce eutrophication by removing nutrients from inland water systems (The Finnish Innovation Fund Sitra, 2021). This is a good example of a paradigm shift towards sustainability in the form of a concrete business case, where sustainability strategy is transformed into actual business activities, affecting fishery businesses comprehensively through their strategy, organization, and operations as a whole.

Accordingly, aiming of building a theoretical framework for this study, the writer utilizes relevant literature and theories within the framing of sustainability-oriented stakeholder value co-creation displayed further in this chapter. As the research objective of this study is to characterize the process of co-creating sustainable value by multiple inland fishery stakeholders, it is evident that aspects of sustainability, sustainable business and sustainable business models, value creation and stakeholders are central to the discussion. The focus of the framework is on the qualitative issues, focusing on the characteristics, drivers and barriers related to the studied case project and its stakeholders.

Firstly, the phenomenon of sustainability and the concept of sustainable business are introduced as they could be considered as an overarching framework in the study, enabling the author to combine other theoretical domains of the theoretical research framework in a proper way. Secondly, stakeholder theory is discussed and reviewed within the concepts of sustainability and value creation. Lastly, the value creation and sustainable business models are introduced based on Teece's (2018) business model of organizational architecture, addressing resources and activities in boosting dynamic capabilities of an organization. The business model of Teece will be adapted as a tool to illustrate the process of co-creating sustainable value by the stakeholders of the case study project.

2.1. Sustainability and sustainable business

As per the ingress, all the research objective related theories, concepts and frameworks are included in the overarching framework of sustainability; thus, sustainability could be considered as the underlying domain of this study. In research, sustainability has been linked in management research discipline with strategic management and closely related stakeholder approach (Freeman & Evan, 1990). Moreover, stakeholder theory is linked with concepts of shared value creation by multiple stakeholders and sustainable business models (Bocken et al., 2014). Furthermore, as per definition of Geissdoerfer et al. (2018), utilizing sustainable business model, it is possible to use multi-stakeholder management means for generating monetary and non-monetary value for multiple stakeholders besides having a long-term view on sustainability goals.

In this accordance, all of these sustainability-linked theoretical concepts were clearly present and identified by the researcher within the case study process; considering defining the fishery development project's management stakeholder as the focal organization, which identified and engaged stakeholders and integrated stakeholder resources in order to enable stakeholders to co-create sustainable value in line with the determined project objectives, such as co-designing, co-creating and co-implementing of a circularity based business model for utilizing cyprinids and enhancing supply chain and fish handling, grading and processing technologies and processes towards sustainable practices.

Considering sustainability's fundamental role in the research framework; Porter argued (1996), that businesses may be forced to make strategic changes due to structural changes in industry or business environment, resulting from depletion of natural resources. As mentioned earlier in this chapter, this argument is true and evident also in the case of the domestic inland fishery industry; considering depletion of commercially valuable roach and bream in the inland lakes due to eutrophication and overfishing of certain sized fish only, thus leading fishery businesses to make strategic changes in order to find solutions to this issue at stake. Hence, this is a relevant framing for the concrete sustainability business case, related to the case study.

In regard to the development of sustainability as a phenomenon; sustainability and sustainable business have been emerging steadily since the 1970's. "The limits to Growth" report by Meadows et al. (1972), can be considered as the first milestone, challenging the traditional business paradigm, where the ultimate aims of a business were shareholders and owners' profit and growth that were prioritized even at the expense of society and nature. The purpose of the report was to challenge the status quo of considering natural resources as endless, accompanied with continuous growth, by replacing it with a no-growth model of doing business. Furthermore, one of the most well-known definitions of sustainable development was developed in 1987 in the Brundtland's report as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987, chap. 2.4. para. 1). The ultimate aspects behind the concepts of sustainability and sustainable development can be defined as the limited resources of the Earth combined with the need for balancing between the capacity of the Earth's to respond to the needs of civilization (Chang, et al., 2017). Considering the scarcity of natural resources, awareness of nature conservation and requirements for business ethics, it is clear that sustainable development is currently on the radar of politics globally, however political objectives can be achieved only by businesses, as they are the major actor in achieving concrete outcomes in sustainability. Regarding the aspect of sustainable business ethics, there have been several theoretical concepts in this respect: "corporate citizen" (Wood & Logsdon, 2001) and "corporate social responsibility" (Sheehy, 2015) involved in forming of fundamentals of argumentation for sustainability in business. In this accordance, stakeholder theory links research disciplines of business ethics and strategic management by integrating ethical aspects of corporate sustainability and CSR with stakeholder approach to strategic management (Freeman et al., 2010). Furthermore,

the next evolutionary phase of business sustainability, developed by Elkington (1998), the triple bottom line concept. Elkington argues that sustainable business results from three interrelated aspects as economic, social, and environmental sustainability. Economic sustainability is generating profitable business in the long term, thus enabling continuity of business. Social sustainability refers to an organization's activities, intended to promote equality, fairness, and democracy among people within the operating environment of the organization, ensuring possibilities for a fair life for current and future generations. Environmental sustainability as the third element refers to responsible use and consumption of natural resources with minimizing emissions and waste, resulted from operations of businesses and industries (Magon et al., 2018).

In the context of sustainability related evolution, the fishery development project carrying a sustainability-oriented mission, reflects the contemporary sustainability awareness of consumers and contributes to the sustainability agenda of the UN's 2030 Agenda for Sustainable Development (UN, 2021) by orchestrating and integrating the resources of stakeholders and strengthening the relationship between sustainability and the businesses. In this regard, the case project's main objective was to create a basis for a truly sustainable, circularity-based business model for maximizing value of cyprinids by means of circularity with related sustainable solutions for the Finnish inland fishery industry (The Finnish Innovation Fund Sitra, 2021).

2.2 Stakeholder theory

According to the paper of Laplum et al. (2008), R. E. Freeman is widely cited and considered as the founder of the stakeholder theory, as multiple articles and books published on stakeholder theory generally consider Freeman as the developer of stakeholder theory. In this respect, Freeman's *Strategic Management: A Stakeholder Approach* is widely cited in academia as the foundation of stakeholder theory, providing managers and researchers with new vocabulary for stakeholders in academia and management. In this book, the widely known definition of stakeholders was presented by Freeman as "any group or individual who can affect or is affected by the achievement of the organization's objectives" (Freeman 1984, 46). Moreover, according to the descriptive stakeholder theory of Phillips (2003), the purpose of stakeholder theory is to define the related stakeholders of a firm or an organization and assess the conditions for treating

stakeholders in accordance with their influence, relative to the objective. The core aspects of the stakeholder theory are included in these two definitions of stakeholders and stakeholder theory. Furthermore, referring to Geissdoerfer et al. (2018), stakeholders are an essential aspect of sustainable business models and value creation process. Thus, stakeholder theory fits well in the theoretical framework of the study. In order to provide a more extensive understanding of the research topic, the theory of stakeholders will be discussed further in the first subchapter.

The stakeholder theory emerges from research disciplines of organizational management and business ethics that consider a number of constituencies being affected by a business or organization entity. In contrast with the traditional strategic management approach, prioritizing only the business owners and shareholders (Porter, 1996), stakeholder theory instead includes a variety of other parties, such as employees, suppliers, municipal actors and local society and even competitors in the process of value creation (Freeman, 1984). Moreover, stakeholder theory emphasizes morals and values in management of an organization, tying it with business sustainability. The stakeholder theory integrates a resource-based view (RBV) and a market-based view, embedded with a socio-political level. The normative theory of stakeholders aims to identify the stakeholders of an organization, while the descriptive theory of stakeholders examines the conditions under which managers treat these parties as stakeholders. According to the paper of Lin (2018), due to its complexity and connectivity with other theories and frameworks, the stakeholder approach has hundreds of definitions in the academic literature.

The ultimate idea of the stakeholder theory was to create a framework that was responsive to the needs of managers who were experiencing growing amounts of changes in their business environments in 1980's. The aim of stakeholder management was to develop methods to manage the numerous groups and relationships by strategic means. In 1980's managers were increasingly forced to understand the needs of not only shareholders, but for instance employees, customers, suppliers, lenders, and society, in order to develop objectives that would satisfy a variety of such stakeholders. This was considered central for sustaining business in the long term; thus management should continuously develop its relationships with all essential stakeholders with an aim to build sustainable business strategies. Based on this business problem, professor R. E.

Freeman started developing the stakeholder theory approach to strategic management. Hence, while the stakeholder approach had roots in academia, its fundamentals lay in the operational needs of managers and studies of management practitioners at the Wharton School, University of Pennsylvania (Freeman, 2001). Moreover, Goodpaster (1991) introduced a paradox that relates to the stakeholder approach. The paradox is that managers appear to have a contractual duty to manage the organization in the interests of the stockholders whilst they seem to have a moral duty to consider other stakeholders' interests.

Stakeholder theory is basically about dealing with the following three interrelated business problems: Firstly, the problem of value creation and trade; How value is generated and shared among stakeholders? Secondly, the problem related to the ethics of capitalism; What is the relatedness of business and ethics? The third issue is management related; How managers could create value more efficiently while ensuring and sustaining business ethics. Furthermore, Freeman argued that the main functions of the stakeholder theory is to identify and model the stakeholder groups and to describe and recommend means for managing stakeholder relationships by their needs and expectations regarding focal organization's offerings or issues at stake. (Freeman et al. 2010)

Regarding development of the stakeholder theory, in their study, Donaldson and Preston (1995) divided stakeholder theories into descriptive, instrumental, and normative categories: Firstly, the descriptive stakeholder theory describes the characteristics and behaviors of organizations; how they are managed, how the management considers interests of their stakeholders and the essence of the organization itself. Secondly, the instrumental stakeholder theory utilizes empirical data to define the connections between the management of stakeholders and the organization goals. Thirdly, the normative stakeholder theory focuses on defining the moral or philosophical fundamentals for the operations of the organization.

Stakeholder approach to organizational theory is based on the contrast between the traditional corporate governance view that management is primarily responsible to secure the interests of shareholders and the *stakeholder approach*, in which managers should take into account the interests of all essential stakeholders. Williamson (1984) applied a transaction cost framework to

explain that shareholders deserved prioritized status in relation other stakeholders due to “asset specificity.” He claimed that a shareholder’s stake correlated with organization’s success of the, having no residual value in case of the firm failing, unlike, for instance, the labor of employees. In contrast, Freeman and Evan (1990) have claimed that Williamson’s traditional view can instead be applied to all stakeholders’ relationships as a number of other stakeholders might have critical, firm specific stakes whilst shareholders have a more liquid stake in form of the stock market for exiting from the organization’s influence compared to other stakeholder categories. Hence, stake specificity does not lead to a prioritized position for stockholders compared to others.

Stakeholder management approach

Harrison and St. John (1994) consider the stakeholder management approach as a combination of aspects from other strategic management related theories and concepts, having interrelatedness with for instance resource-based view, institutional view and the cognitive theory. It is essential to their approach to distinguish between analysis and management of stakeholders. Stakeholder management is based on communication, negotiation, contracting and relationship management and motivating stakeholders to engage in the organization's goals. In the context of stakeholder management, Porter’s five-force model (1979) is a relevant tool for defining and assessing the relationships with organization’s external stakeholder groups including suppliers and rivals.

The mentioned means of stakeholder management are linked with the strategic management which defines the ultimate purposes of the organization. Stakeholder management is also tied with business ethics due to high costs of unethical behavior combined with jeopardizing the state of trust, inevitable for sustainable and profitable cooperation with stakeholders.

The discussed above stakeholder management means were evident also in the case study as utilized by a focal project manager organization, i.e., university of applied sciences; for example, firstly project manager negotiated with potential stakeholders with an aim to engage them in the project’s value co-creation activities. Secondly, contracting was evident referring to signing non-disclosure contracts by the project manager with stakeholders involved in co-development of technical devices with technology suppliers. Thirdly, as an example of relationship management and

motivating of stakeholders was the organization of innovation workshops and events by project managers of university of applied sciences as a focal organization.

Organization- and issue-focused approaches to stakeholder management

According to Roloff (2008) the purpose of organization-focused stakeholder management approach is to create pragmatic legitimacy by balancing between the expectations and self-interest of the essential stakeholders and the organization's benefits. In regard to the supplementary, issue-focused approach to stakeholder management, it is demonstrated that issue-focused stakeholder management is dominating in a multi-stakeholder environment due to its ability to emphasize complex issues and obstacles with stakeholders by means of cooperation. As deliberation could be considered as fundamental aspect of an issue-focused stakeholder management, it enables organizations to cope with various and even contradictory demands of stakeholders, also enhancing the legitimacy of organization's activities.

In conclusion, it might be argued that there are two variations of stakeholder management that companies practice: either they address their own benefits as an organization, which is considered as an organization-focused stakeholder management, or they focus on a wider issue affecting their relationships with a variety of stakeholders, which is named as issue-focused stakeholder management.

Stakeholder identification

Stakeholder identification is one of the most fundamental purposes of the stakeholder theory. In this respect, the essential focus is in distinguishing between legitimate stakeholders and other actors in the business environment. In this respect, Phillips (2003) identifies two categories for stakeholders: normatively legitimate and derivatively legitimate stakeholders. Organization holds a moral obligation to normative stakeholders while derivatively legitimate stakeholders are less salient by their influence on the organization or its normative stakeholders. Furthermore, Max Clarkson (1995) proposed a term of primary stakeholders that the organization is dependent for survival and secondary stakeholders, considering remaining stakeholder groups to an organization.

Stakeholder salience framework

After identifying the essential stakeholders of the organization, conditions will be assessed how managers treat defined stakeholders, known as the stakeholder salience theory. Early stakeholder researchers such as Dill (1975) and Freeman & Reed (1983) examined capability of stakeholders to affect the organization by their stakes and power. Mitchell et al. (1997) developed a stakeholder salience framework by identifying stakeholders by parameters of urgency, power and legitimacy resulting in the amount of efforts that managers ought to share with different stakeholder entities. Power as a factor refers to the scale a stakeholder has capability in urging its will in a mutual relationship whereas legitimacy to structures of behavior that are socially accepted and expected. Urgency is related to criticality or sensitivity in sense of time of the stakeholder's claims. As a result of combining the salience attributes in a binary manner, eight types of stakeholders are defined together with their inferentiality in relation to the organization. Furthermore, as Harrison and St. John argue, it is a complex task to prioritize stakeholders by assessing the influence of their stakes based on one's economic or political power and legitimacy. The organization's values and the strategy might prioritize certain stakeholder relationships while discouraging others.

This was the case also considering the case study, as the project's ultimate objective of sustainability was a motivating and engaging driver for majority of the project stakeholders while certain stakeholders neglected to participate in the sustainability related project activities due to their contradictory values and opinions on the sustainability.

2.2.1 Stakeholder approach to ethics, values, and sustainability

The search for normative arguments takes the stakeholder theory towards philosophical foundations and ethics. Hence the normative research stream examines whether there is an ultimate moral requirement to apply certain kinds of stakeholder management and integrate it into foundations of philosophy. A normative stakeholder approach in line with the Kantian principles was developed by Evan and Freeman (1988). Kantian approach argues that managers are required to respect stakeholders' wellbeing more than considering them as objects of the corporate's seeking for profit and growth. Phillips (1997) embedded stakeholder approach into the principle of fairness, meaning that individual entities tend to enter into cooperative agreements voluntarily

whilst creating an obligation to act fairly. In addition, Wicks et al. (1994) along with Burton and Dunn, (1996, 2005) have developed a stakeholder approach within the ethics of care. As opposed to the conservative approach, focusing on an individual rights-driven businesses, an approach pointing up ethics of care prefers the priority of relationship network enabling the businesses. It formulates strategy looking at the context of the surrounding relationships instead of considering the organization as a lone actor.

The ethics of care approach is evident in the case study, as the case project's objectives were set based on the identification of stakeholders' mutually agreed objectives and relationships during the first project workshop and following meetings.

Freeman et al. (2004) argue that stakeholder theory is based on the idea that values are the central aspect of business. In line with this assumption, there are two core questions that stakeholder theory focuses on. The first core question is, what is the purpose of the organization? This leads management to communicate the nature and type of value they intend to generate. The second fundamental question of the stakeholder theory is, what responsibilities does management of a focal organization have to stakeholders? Hence it is reasonable for managers to communicate the value they promise to create and focus on the factors that drive and strengthen stakeholders' relationships.

Stakeholder approach to CSR and sustainability

Referring to the paper of Sheehy (2015), Corporate Social Responsibility (CSR) refers to a private, international means of self-regulation of an organization. Moreover, according to Freeman et al. (2010), the CSR framework emerges from the business ethics, which is related to stakeholder theory, as discussed earlier in this chapter. In this accordance, as discussed earlier, sustainability and the triple bottom line are closely related to the stakeholder approach. Other closely related frameworks are corporate citizenship, corporate social performance and corporate social responsiveness and corporate governance. All these frameworks share the similar aim to include non-financial aspects in the strategy of an organization.

As discussed earlier in this chapter, sustainability is a comprehensive and connective framework that covers the whole business environment of an organization, such as stakeholders, environment, and society. In this regard, it is crucial to address the importance of a strategy on organizational level because success of the organization depends partially on having bond between the organization's and its management's and stakeholders' values besides the societal issues, dictating the capability of the organization to devise its strategy successfully (Freeman, 1984). Thus, values are playing an essential role of in strategic management has set the normative roots for stakeholder theory and its linkage with sustainability.

2.2.2 stakeholder approach to value creation and co-creation

Stakeholder approach to value creation considers the main research question of the study through the lens of the stakeholder theory: How is sustainable value co-created by stakeholders in the Finnish inland fishery? In this regard, according to Pera et al (2016), identifying motives of stakeholders is crucial for the focal organization to create relevant resource integration means, thus creating a basis for the process of multi-stakeholder value co-creation. Furthermore, determining the connectedness between motives and resources of stakeholders is important in order to strengthen the creative potential of stakeholders with conflicting objectives. In this respect, stakeholders, participating in such a value co-creation process, may be seen as resource-integrators that voluntarily co-create the value (Merz et al., 2009).

This kind of value co-creation process model was also utilized in the study, as the drivers and capabilities of studied stakeholders were examined with a purpose to improve the value creation process in management of the further fishery development projects. In addition, stakeholders combined their resources, mostly their know-how, which resulted in the satisfactory and concrete project outcomes, such as new grading and handling technology and new sustainable business model for processing cyprinids.

Multi-stakeholder approach to value creation

Freeman et al. (2004) propose that economic value is created by stakeholders who voluntarily cooperate to improve every stakeholder's circumstance. Considering the above mentioned voluntary-oriented nature of the value co-creation, it is important for managers to concentrate on motivating and developing relationships with stakeholders, thus creating groups in which stakeholders are willing to put their best efforts in delivering the expected value by an organization or a project. In this regard, profit is considered as an expected result, however, not as a driver in the process of value creation. Being ultimately person and multi-stakeholder driven, stakeholder theory is ultimately to co-create value by stakeholders (Freeman et al., 2007). Stakeholder theory provides an appropriate parallel approach for studying not only how is value co-created within multi-stakeholder relationships (Freeman et al., 2020). It also examines how co-created by stakeholders' value is distributed (Bridoux & Vishwanathan, 2020), and how value creation is affected by distribution of value. In practice, according to Edvardsson et al. (2011), a multi-stakeholder-based value co-creation ecosystem aims at considering the organization's assets and competencies, with individual stakeholders' capabilities, embedded with the relationship management efforts with key stakeholders (Edvardsson et al., 2011).

There is growing attention in the value co-creation related research that co-created value is a result of the cooperative efforts of multiple stakeholders instead of only two actors (Vargo & Lusch, 2004, 2008). Gyrd-Jones and Kornum (2013), consider this approach as a stakeholder ecosystem. Furthermore, according to Wieland et al. (2012), the form of an ecosystem is constantly affected by all the actions or inputs, thus differentiating an ecosystem from a network. Furthermore, Merz et al. (2009) argue that all stakeholders can be considered as resource-integrators of an ecosystem, creating value for collectively.

Reflecting to the case project and its stakeholders, the comprehensive ecosystem approach of Edvardsson et al was evident and utilized also in the case study project, as all of these elements were constantly considered in order to enable the efficient co-creation process of value as a result of the project.

In line with the research objective and referring to Hillebrand et al. (2015), managing value co-creation is briefly about understanding why and how various stakeholders come together to create

value. Moreover, Vargo and Lusch (2011) and Frow et al. (2014) propose, that stakeholders are forced to exchange resources due to the fact that a lone stakeholder has not the required assets to run their businesses successfully in separation, thus, is forced to engage in value creation with other stakeholders, even with ones having conflicting objectives and values with others. This is evident also in the study, as none of the project stakeholders would have had the required resources to transform their businesses towards sustainability without the resource integration synergies that were achieved through the cooperative value co-creation activities of the project.

2.2.3 Sustainable value creation and sustainable business models

According to Geissdoerfer et al. (2018), a sustainable business model enables incorporating proactive and multi-stakeholder management aspects while creating monetary and non-monetary value for a variety of stakeholders and holding a long-term perspective on sustainable goals. This is evident in the case study project, as well; considering the project as the focal organization, integrating stakeholder resources to enable stakeholders to co-create sustainable value in the context of the project goals, i.e., circular business model for utilizing cyprinids. Considering further the case project's value creation model, there are several relevant business model concepts discussed in the literature. For instance, innovation-minded business model canvas of Osterwalder and Pigneur (2010), Zott and Amit's (2010) activity-based perspective and Teece's business model proposition (2010; 2018), in which organizations convert resources and capabilities to economic value. To characterize the case project's value co-creation process, Teece's organizational architecture model will be followed as it fits well with the project activities, focused on integrating stakeholders' resources and capabilities to sustainable fishery products as sustainable value.

As per Teece's (2018: 41) definition, "the business model describes the design or architecture of the value creation, delivery, and capture mechanisms that a firm employ" with an aim to create value. In his business model, the focus is on balance between value creation, value delivery and value capture. However, in the case of the non-profit case project, the focus is on value creation only, so the business model is adapted to follow the project's resources and activities as the core components of the process model of sustainable value co-creation in the Finnish inland fishery environment. In order to conceptualize the adapted business model, components will be

categorized according to the schema of Schön (2012), by the cost model category, covering core assets and capabilities along with core activities as follows: project's core assets equal the resources of project stakeholders whereas core activities cover all the activities of stakeholders, such as activities related to stakeholder management and cooperative activities among stakeholders. As a result of combining the core assets and activities, the model of sustainable value co-creation is formed in the framing of the case study related project, providing an answer to the main research question of the thesis; How sustainable value is co-created by stakeholders in the Finnish inland fishery?

3 RESEARCH FRAMEWORK AND METHODOLOGY

To answer a question or address a problem. These are the main purposes of any research. In this respect, it is necessary to obtain and analyze relevant data which is related to the research context. according to Saunders et al. (2009), data collection can be done by utilizing various methods or strategies. The purpose of this chapter is to describe how the research framework was built using relevant research methodology and design.

3.1 Methodology of research

With an aim to illustrate the research design related choices that the author made; a research design framework developed by Saunders et al. (2009) is used to find answers to the research problem.

Research philosophy

The furthest layer of the research framework describes the author's view on the world, affecting on what he considers as an acceptable knowledge from his point of view (Saunders et al. 2009).

The writer chose interpretivism as the research philosophy approach as it aims to understand the research subject's point of view of the world. In this accordance, the writer's purpose is to gather a rich insight into the subject of the study, rather than creating strict generalizations. Furthermore,

it is relevant to use interpretivist approach as it considers businesses as a set of complex and unique entities, environments, occasions, and individuals, coincidentally occurring in the same activities and situations. (Saunders et al. 2009, Saunders & Tosey, 2012)

Research approach

Induction is chosen approach to be followed by the researcher in case of this study, because induction is about trying to figure out the comprehensive nature of the research problem by finding out what is happening. Characteristic of induction is that it usually addresses good understanding in subject of the study besides with utilizing qualitative data and more flexible structure of a study, enabling revisiting the focus of the study during the research process. There are usually less concerns in inductive studies with generalizing the results (Saunders et al. 2009).

In the case of the thesis study, inductive approach was a relevant choice for the thesis writer due to the complexity of the research environment, including observation of the fishery businesses and field research with fishery stakeholders in terms of meetings, discussions, and semi-structured interviews.

Methodical choice

Multi-method qualitative was chosen as the data collection method because the research context required utilizing various methods of data, as if utilizing only one type or source of data would not have allowed writer to receive a comprehensive picture of the comprehensive and complex fishery industry environment.

Research strategies

Case study was the chosen research strategy for the study, as according to Robson (2002), case study is an empirical mean to examine a certain phenomenon in real-time context, utilizing multiplicity of sources of evidence. Moreover, the context is central aspect in the case studies, however the boundaries are more flexible (Yin 2009).

Time horizon

As the sustainable stakeholder value co-creation is a rather long process, and the purpose of the study is to characterize the phenomenon comprehensively at every stage of the process, including the ongoing stage, the time horizon choice is therefore longitudinal.

3.2 Research procedures and techniques

The research procedures and techniques are to describe the actions that have been taken for analyzing and collecting the thesis related data. The purpose of this subchapter is to discuss the choices made regarding sampling, collection, and analysis of the research data.

3.2.1 Sample

Sampling is a choice of cases that most probably extend either replicate the theory. In this respect, the intention is to avoid random choosing of cases, but instead cases that support the emerging theory (Eisenhardt 1989).

In the study, the sample intended for data collection analysis covers the case project stakeholders, each of them representing a different and an essential group, related to the Finnish inland fishery value co-creation process. As all the stakeholders from the sample group were participating in the case project, the number of suitable stakeholders for sampling was very small and limited, including the case project management organization as one of the suitable stakeholders for sampling purposes.

The initial phase of sample screening of the study was pursued by contacting the case project's stakeholder-participants, who were the most suitable for the main purpose of the study. The result of the initial screening was 14 such stakeholders.

The second screening round was targeted on these 14 stakeholders. The following step of the screening was to ensure that there was enough information available from the stakeholders, for

instance organization websites, catalogues, meeting notes or newspaper articles. The purpose of the aforementioned was ensuring the possibility for the triangulation and the sufficient experience of the chosen stakeholders from the fishery value co-creation processes.

Out of the 14 possible stakeholder representatives, eight occurred relevant and suitable for the study's purposes. These stakeholders filled the prerequisites for the study as they were experienced enough in operating in fishery businesses, either in fishing, fish processing, funding or operative and strategic development of the domestic inland fishery. In addition, the availability of the secondary data was ensured regarding the stakeholders.

The writer contacted the eight stakeholders for asking their willingness to participate in an interview as an entrepreneur or manager of the fishery related, essential stakeholder group.

The final sample for this thesis study was four fishery value co-creation related stakeholders-participants of the case project, involving local university of applied sciences, being responsible for the case project management, one local fishery development and EU funding organization, one local fishing and fish processing cooperative and one professional commercial fisherman.

3.2.2 Collection of data

The primary data collection method of this study was a semi-structured interview conducted for the sample stakeholders as interviewees. Semi-structured interview forms (Appendix 1) were utilized with open-end questions with an aim to promote discussion during the interview. The interview form was divided into a number of certain themes, including supplementary thematic questions of supportive nature, whether interview regarding the theme lacks data.

The format for the interview consists of topic related themes and questions in list, however, with an option to interview dependent variation, taking into account the different characteristics and roles of the respondents in the fishery business and the flow of the discussion (Saunders et al. 2009).

The primary data on the studied project stakeholders consists of the mentioned above four interviews. Regarding the research interviews, the key research questions were operationalized and adapted singularly, depending on the nature of the interviewee. The questions emphasized themes such as “In which way did stakeholders contribute to the project objectives? What value did they consider generating? Which expectations and benefits were they achieving from participating in the fishery development project? What were their main personal challenges and industry level barriers? What kinds of resources were shared? What kinds of supportive resources did the fishery development project offer them? Which other stakeholders were they co-creating during the project activities? What kind of relations and interactions occurred between stakeholders?”

The interview forms included the necessary themes and issues and the interviews were conducted with the stakeholders who had broad experience in the value co-creation process of the Finnish inland fishery. The interviews were conducted in the premises of the stakeholders in Finnish language. The interview related data was collected by taking notes by computer during the interviews and transcribing them to the final written form for analyzing.

Gathering of the secondary data, related to sustainability-oriented fishery value co-creation, was conducted by utilizing sources such as websites, brochures and notes from seminars, workshops, and meetings.

As the nature of the study was qualitative, combined with only four different kinds of stakeholders analyzed during the process, it is not possible to make broad industry nor nationwide conclusions to be applied to all Finnish fishery stakeholder value co-creation related cases. However, taking into account that the screening in the case study context resulted in only 12 companies that were engaged in this unique sustainability-oriented, fishery stakeholder-targeted project, the sample of four differing stakeholders can relatively clearly illustrate a variety of traits, drivers and barriers, which could be true in the case of some sustainability-oriented stakeholder value co-creation cases in the Finnish inland fishery.

In this respect, it can be claimed that the findings of the study are to some point relevant and similar compared to other domestic fishery industry related sustainability-oriented value co-creation

projects and stakeholders, for instance on the seaside, as the fishery business environments are quite similar on coasts.

The characteristics of all four stakeholders that are discussed in the sub-chapters 4.1 through 4.3 are shown in Appendix 2. The characteristics related analysis addressed the central aspects in stakeholder, value creation and sustainability theories. The parameters include traits of the case stakeholders such as their resources and capabilities, addressed within the fishery business environment. The sustainability related parameters include opinion and awareness, expectations and needs regarding sustainability. Finally, the value co-creation factors describe the role, expectations and needs regarding value co-creation, and what is literally at stake; the set of operative means and resources, allocated to participation in the project's value co-creation process.

Regarding the interviews, it is also relevant to underline that the interviews present only personal views of respondents. Thus, results shall not be treated as an analysis of the industry level of the Finnish inland fisheries, but rather a personal case sensitive description of how stakeholders perceive their operating environment and how they perceive the benefits of creating sustainable value together. Table 2 represents the primary and secondary data sources of the studied project stakeholder as follows.

Primary sources of data	Data type
STAKEHOLDER A	In-person interview with the research manager of the local university of applied sciences
STAKEHOLDER B	In-person interview with the manager of the local fishery supporting and funding organization
STAKEHOLDER C	In-person interview with the operations manager of the local fish processing cooperative
STAKEHOLDER D	In-person interview with the local professional fisherman
Secondary sources of data	Data type

STAKEHOLDER A	Stakeholder organization's website 2021 Case project reports 2018-2019 Meeting memorandums 2018-2019
STAKEHOLDER B	Stakeholder organization's website 2021 Case project reports 2018-2019 Meeting memorandums 2018-2019
STAKEHOLDER C	Stakeholder organization's website 2021 Case project reports 2018-2019 Meeting memorandums 2018-2019
STAKEHOLDER D	Stakeholder related meeting notes 2019 Case project reports 2018-2019 Meeting memorandums 2018-2019

Table 2. Sources of the primary and secondary data

3.2.3 Analysis of data

Certain topics were analyzed for each of the studied stakeholders of the case study. In accordance with the suggestions of the stakeholder and value creation theories, the stakeholder characteristics along with sustainability related aspects were given emphasis in the research. A data codification methodology, developed by Corley & Gioia (2004), was utilized in this study as it seemed reasonable to process the gathered data simultaneously at two levels, i.e., at the informant-centric, 1st-order level, referring to terms and codes from stakeholder interviews and other data sources, and at the researcher-centric 2nd-order level, referring to the theoretical, abstract level of the research topic related themes, giving theoretical answer to the ultimate question “What’s going on here?” (Gioia et al. 2013, Corley & Gioia 2004). Accordingly, the chosen stakeholders were examined by presenting the 1st-order level questions to each stakeholder. As the 1st-order level traits of each stakeholder were embedded with their personal motivational factors and barriers faced, cross-case conclusions were done in by combining the informant-centric 1st-order level data, which was answering the sub question; “What characterizes stakeholder value co-creation in the

Finnish inland fishery?”, with the 2nd order level data in order to address the abstract, researcher-centric level research question; “How sustainable value is co-created by fishery stakeholders in the Finnish inland fishery?” Table 3 illustrates the process.

1 st -order level data	2 nd -order level data	Result
Collecting of the data; traits, drivers and barriers of stakeholders studied	Triangulating the collected data	The characteristics of the value co-creation as a phenomenon

Table 3. Illustration of the codification method, utilized in the study. Adapted from (Gioia et al. 2013, Corley & Gioia 2004).

3.3 Justification of applied empirical research methods

In the study, certain inland fishery value creation related stakeholders were analyzed by means of the methodologies from case studies. Moreover, qualitative research methods are usually utilized while conducting case studies. A qualitative methodology approach is suitable for this research, because the observation and interpretation of the research problem is more relevant approach than quantifying as the number of stakeholders available was rather small in the research context. In addition, the sustainable stakeholder value co-creation is rather complex phenomenon, besides with the very strictly limited context of the study, thus supporting the choice of qualitative approach in making the study.

Moreover, the thesis writer was the project manager of the case study project, thus it supported the choice of case study methodology as the writer participated in the project’s activities and strategic planning from the beginning of the project. This enabled ethnography based real-time observation of the project related fishery business environment and utilizing field research methods in collecting data through discussions and meetings with project stakeholders on a regular basis. In sum, the position of the thesis writer as the project manager created a strong basis for an inductive research approach, based on observation of the complex and multidimensional phenomenon of the Finnish inland fishery environment.

The phenomenon of the sustainability-oriented stakeholder value co-creation in the Finnish inland fisheries is a fairly new and understudied topic. Thus, the inductive studying methodology is a relevant choice as it is based on observing, thus building the theory out of the observations of the complex phenomenon. In addition, the flexible structure of the research was relevant, because it was not clear in the beginning, which stakeholders would participate in the research during the research process.

4 EMPIRICAL RESULTS

This chapter shows the results of the empirical part of the study by displaying the obtained data from the case project and its four sample stakeholders regarding their characteristics, drivers and barriers related to sustainability-oriented value co-creation. Based on the outcomes of the theoretical findings, the sustainable inland fishery value co-creation phenomenon should consider the theories related to sustainability, stakeholders, and value co-creation.

Second subchapter discusses the drivers of stakeholders for sustainable value co-creation. There are basically two types of drivers: stakeholder's own, micro level drivers and on the other hand macro level drivers. The findings of the second empiric subchapter are based on the primary interview data.

The third subchapter considers the third research question by highlighting the barriers the stakeholders faced regarding the value creation process.

Due to the requirements of the stakeholders for anonymity, the writer shall not provide detailed information regarding the primary or the secondary data sources and their availability. The passages related to the stakeholders consider the interview data, the secondary data sources, and the results of the writer's analysis.

4.1 Characteristics of the sustainability-oriented value co-creation process in the Finnish commercial inland fishery

In the first subchapter 4.1, the traits and characteristics of the case study and the sample stakeholders are discussed collectively. The aspects covered in the first subchapter are the basic information displaying project description, stakeholder characteristics and project specific traits related to stakeholder, sustainability, and value co-creation theories, in order to answer the first research question, or more precisely, the sub question (SQ1): What characterizes sustainability-oriented stakeholder value co-creation within the Finnish commercial inland fishery?

Case project characteristics

The current megatrend of sustainability, among other issues, is also related to the scarcity of natural resources (The Finnish Innovation Fund Sitra, 2021). In this respect, there is an actual business case for improving the Finnish industrial food production and fish industry towards sustainability. As described in the introduction chapter, the case study is based on examining the fishery development project, led by a university of applied sciences, and located in the South-Eastern Finland. The initiative for the project came from a Finnish innovation funding organization. The budget of the project was 290 thousand euro and the majority of funding of the project was paid by the innovation fund. The timeline of the project execution was two years, starting in the beginning of 2018 and ending in the end of 2019. The project was linked to the National Road Map to a Circular Economy pilot program, established by the innovation funding organization in 2016, developing the domestic fish industry towards a circular economy. The aim of the road map related pilot projects was to improve the recycling of land originated nutrients from the Finnish water systems by fishing of primarily cyprinids.

The ultimate purpose of the studied case project was to improve availability of roach and bream by improving the efficiency of fishery logistics and by developing solutions that enable profitable transportation and collection of small and large catches of fish. As part of the project's ultimate purposes, circularity-based business models were examined and piloted for enhancing the sustainability throughout the value chain. Besides, a digital application for tracing the end-to-end

supply chain of inland fishery logistics was one of the project's goals. By developing such an application, it would be possible to increase transparency of the sustainability through the fishery supply chain and enhance communication between all the essential stakeholders of the inland fish value chain, from lake to markets and restaurants.

“In the context of the global megatrend of sustainability, emerging from the ethics and scarcity of natural resources, the ultimate purpose of this project was to find solutions for the sustainable future of industrial food production in the context of the domestic fish industry.” - Project manager of the case project

Stakeholder characteristics

There were 15-20 active stakeholders who participated regularly in the project related activities during the project, depending on their needs and expectations from the project. Referring to the stakeholder theories of identification and salience (Freeman 1984; Mitchell et al. 1997) that were discussed in the theoretical chapter, university of applied sciences could be defined as a focal organization and resource integrator in the context of the case study project. Furthermore, according to its legislative roles, besides providing higher education, it operates in the field of strategic planning and operative management of sustainability-oriented project development within the value co-creation process. The role of the university of applied sciences in the project is based on its nationwide legislative purposes; as determined in the legislation of Finland, the mission of universities of applied sciences is to provide local businesses and industries with higher education for professional expert jobs that meet requirements of regional working life and its development, also carrying out applied research, development and innovation (RDI) activities, thus promoting and developing regional industries and businesses together with regenerating the industrial structure of the region. Thus, one of its legislative missions - carrying out RDI activities - is pursued in the case project (Finlex, 2021).

Stakeholder B participated in the project in a supporting role of an advisor and funding organization, attending the steering board of the case project. Stakeholder B was very highly competent in providing funding and fishery businesses related consultancy and support for all the

fishery stakeholders in the Eastern Finland region. It also had good relationships and networks covering the whole fishery sector from fishermen to researchers, government, policy, and EU level. As a local support organization, stakeholder B had limited resources in time and finances, however, it was a very important stakeholder for the project for the reason of its inferentiality and expertise within the regional and national fishery business environment. Stakeholder B could be considered as the bridge between local and national levels, also connecting the practitioners and researchers.

Stakeholder C, a fish processing cooperative, was a central stakeholder for the case project, as it was motivated to establish a sustainability and circular economy-driven business already during the project in the Eastern Finland region. Hence participation of stakeholder C could be considered as the most crucial factor when thinking of the sustainability-oriented goal of the project as part of the circular economy road map. Characteristic to stakeholder C was its comprehensive experience and knowledge in fishery businesses, together with an entrepreneurial drive towards utilizing cyprinids in a profitable way. Another characteristic was the strong locality and history as a traditional fish processor in the local region. In addition, stakeholder C had secured an investment from a private investor, who had higher education in economics and a strong background in entrepreneurship and managing organizations. These traits enabled the transition from the traditional fish processor towards sustainability and scalability. In sum stakeholder C had strengths in business management and strategic planning of business towards sustainability.

Stakeholder D represents characteristics of professional commercial fisherman in the case study. He was capable of both fishing and processing fish in his premises on a small scale, selling the fish mostly on the nearest marketplace directly to customers. His high professional skills and substance occurred both on the lake and during the cooperative activities with other stakeholders, bringing the latest industry knowledge and information regarding the current needs for improvements in the field. The fishery knowledge was the result of decades of professional activity. Hence stakeholder D could be considered as the core stakeholder of the fishery project network due to his know-how and also the importance of his ability to supply fish further to processors as well. In fact, the importance of the professional commercial fishermen was crucial as without them the supply of fish would not have been possible for further processing by fish processors. The importance of one fisherman as a lone actor is not critical, however, due to the

small number of inland fisherman, located in the fragmented geographically area of the Eastern Finland, it becomes critical if any of them retires or leaves fishery business for any other reason. In this regard, as stakeholder B stated during the interview, “the role of the professional fishermen is the most important factor when considering scalability and the future development and growth of the inland fishery industry”.

Examples of project outcomes and their relatedness to value co-creation, stakeholder, and sustainability theories

According to Porter (1996), “When the industry or marketplace sees structural changes (such as those arising from natural resource depletion), companies may see the need to change their strategy to adapt to new market dynamics”. The argument of Porter applies to the domestic inland fishery industry through depletion of commercially valuable by parameter of size roach and bream in the inland lakes. As project stakeholder-fisherman said in the interview, “the average size of the fish in the local roach and bream populations has diminished due to overfished age groups by fishermen for commercial purposes”. This comment includes one of the fundamental macro level drivers of the case project’s stakeholders to participate in the project and value co-creation as a whole, i.e. to co-create concrete sustainable solutions for fishing, grading and processing of roach and cyprinids, resulting in enhanced balance in the local populations by parameters of size, age and quantity. On the other hand, the lack of commercially suitable fish was one of the major barriers both on a personal and macro level, hindering the growth and development of inland fishery businesses towards cost-efficiency and sustainability.

Considering the project outcomes at the operational level, there were certain activities that could illustrate the project’s value co-creation process. As an example of the application of resource integration and stakeholder management theories in the context of the case study project, the project manager organized a workshop in order to invite all the potential fishery stakeholders together to discuss and decide on the project related common strategy and action points. As a result

of the workshop, a core group of engaged stakeholders formed with the common understanding on the project's mission, needs and expectations, based on stakeholders' expertise and experience of the inland fishery business environment.

Furthermore, the following case example, related to the project's objectives, describes in detail, how the sustainable value was co-created within the case study project by its multiple stakeholders and by parameters of the value co-creation and stakeholder theories. The example describes how value was co-created in the case of the project's aim to improve handling and transportation of inland fish from fishermen to fish processors. The phases and roles of value co-creators in this case were as follows: In the first phase, Project manager, as in the case of all value co-creation related activities in the case project context, acted as a resource integrator and coordinator between other stakeholders. Firstly, he identified and assessed project stakeholders by their characteristics, addressing their resources and capabilities as defined in the stakeholder theory. After the stakeholder identification phase, project manager of stakeholder A contacted suitable stakeholders with relevant characteristics in terms of their experience, expertise and needs regarding the issue at stake. In this case, stakeholder D was assessed as the primary stakeholder for co-creating value due to its role and substance as a professional fisherman. Stakeholder D was then teamed with stakeholder C, a local fish processor, due to their similar and complementing needs and knowledge to co-create better handling and transportation practices. After forming the suitable team for co-creation, stakeholders held several meetings where they discussed and diagnosed the barriers and problems that needed to be solved. After defining the issues, stakeholders C and D co-negotiated on the potential solutions for the problem and continued further with co-designing of the solutions. The next phase was to co-produce the co-designed solutions; focal organization, having the required budget for project related investments, proceeded with sourcing of the suitable equipment for building the designed fish container and on-site handling solution for professional fisherman to be built in his premises. Meanwhile, the project manager contacted suitable transportation companies for implementation of the designed transportation matrix by the fish processing cooperative and professional fisherman, aiming to enhance the cost-efficiency of the transportation of fish from fisherman to premises of fish processor. Finally, the new fish container and handling device were built and implemented by fisherman, and after fish was handled by fisherman, it was delivered in the container by the transportation company to fish processor for further processing

by means of circular economy, i.e., minimizing waste from production by drying or processing side streams for use as pet food.

In conclusion, in the example of the project results, the value co-creation process by multiple project stakeholders resulted in the improved handling and transportation of fish and more cost-efficient transportation from lake and fishermen further to fish processors and retailers and further used by means of circular economy, minimizing waste from production. Referring to the parameters of value co-creation process, defined by Aarikka-Stenroos and Jaakkola (2012), the sustainable value was co-created through collaborative interactive activities, where stakeholders first negotiated about the issues at stake, proposing their potential solutions to the problems, and then contributed their own resources in terms of investments, experience and know-how in project management, fishery technology and operations, thus adopting the roles of co-diagnosers, co-designers, co-producers, and co-implementers. Moreover, by using terms of value co-creation, the co-creation of value occurred through the interactive cooperative activities in terms of handling and transportation of the inland fish from lake by the fisherman to the fish processor and further to retail and restaurants, thus resulting in a truly sustainable, circularity-based business model.

As for other project outcomes, the case project's second general purpose was improving automated processing of the inland fish, resulting in enhanced availability and cost structure, improved profitability and lowered price of the end products. In this case, another group consisting of case project stakeholders, examined how cyprinids, primarily roach and bream, could be graded and gutted automatically by co-designing and implementing new technologies. The results of testing gutting equipment for variable species of inland fish were promising and created a phase for the further development.

The third major purpose of the project was developing a sustainable business model following the principles of a circular economy, thus concretely improving the availability of cyprinids and the utilization of fish fractions as feed for pets. In this case, the stakeholder group was formed around stakeholder C, investors, local communal authorities, and a group of local fishermen. The role of project manager as a resource integrator was addressed especially in this case, as it was necessary to utilize management capabilities of project manager, bringing together the investors, local

fishermen and authorities to start discussing and negotiating on the terms and logic of the initiated new business model based on a circular economy. As stakeholder C said in an interview; “Without project manager’s efforts, it wouldn't have been possible to end up with a new local fishery business based on cyprinids and circular economy”.

Fourth purpose and outcome of the project; a digital application was developed and tested by commercial fishermen, enabling them to share a digital catch report with the fishery authorities, customers, and transportation companies. Together with the digital application, a RFID sensor-based tracing system of fish batches was developed to be utilized in transportation and in wholesale and consumer logistics and marketing. This kind of digital sharing of catch data among stakeholders in the fishery business environment opens new opportunities for further digitization of the supply chain. In addition, the pilot experiments that were done during the project confirmed that storing the consolidated batches of bream and roach alive in keepnets enabled the transportation of larger fish batches, reducing logistics costs. Also, developed during the project new sorting methods for the first stage of the fish handling process enabled the picking of fish of the desired size from the catch, leaving the other sized fish to grow.

In conclusion, there are several common characteristics that illustrate the value co-creation process in the Finnish inland fishery context. The first common characteristic among all the studied project stakeholders was that all of them were located and operating in the same region in the Eastern Finland. Thus, they operated locally within the region of the Southern Savo. This is mostly due to the lack of financial resources to broaden the operational area further. Also, the lack of resources of case stakeholders was a common factor for all the stakeholders, forcing them to participate in the value co-creation to combine resources and thus receive synergies.

Second issue related to all the stakeholders of the case project was their strong and wide professional substance in the fishery businesses, ranging from fishing and fish processing to expertise in the fishery development projects, funding and fishery policies. The expertise could be considered probably as the most crucial characteristic and an intangible resource among the stakeholders, as it enables the competitive edge in value co-creation against rivals, operating as lone actors in the fishery environment.

Third common characteristic related to the case project's value co-creation was the good capabilities and skills of all the project stakeholders to cooperate in the workshops and meetings. This enabled efficient co-designing of the project purposes and related action plans, resulting also in the successful outcomes of the case project.

The fourth common factor describing the value co-creation phenomenon was the interdependence of the stakeholders. All the stakeholders were highly dependent on each other as actors within the same business environment. This issue could be considered as a strong macro level factor between stakeholders, emphasizing their need to participate in the value co-creation even though they had conflicting interests or objectives with other stakeholders of the project. Table 4 shows the outcomes of the project in relation to the resource integration and stakeholder management activities.

Resource integration, stakeholder identification and stakeholder management related project activities	Project outcomes, related to resource integration and stakeholder management activities
Workshops, seminars, and meetings	Shared, common issues at stake, common mission and goals, teaming in groups with a specific development objective
Building of teams of stakeholders, focusing on certain project objectives	Fish container for transportation, automated gutting technology for bream, a circular business model for utilizing cyprinids, a digital application for sharing catch data with authorities and stakeholders

Table 4. Case project's resource integration activities and outcomes

4.2 Drivers for sustainability-oriented value co-creation

The drivers discussed in subchapter 4.2 refer to individual factors of motivation and macro-level drivers, affecting the willingness to participate in the value co-creation process. The chapter aims to answer the second research question: “What are the main motivational factors that drive stakeholders’ participation in the sustainability-oriented value co-creation?”

As the stakeholder and value co-creation theories proposed, there are certain issues that have an effect on the stakeholder’s motivation to voluntarily participate in the value co-creation even with competing stakeholders. This relates to the term of coopetition, as well. The first important, micro-level reason in participation is receiving something from the co-creation that is missing from the organization's own resources or capabilities, making it impossible for a single stakeholder to achieve the needed output without others, in terms of synergies. In addition, issues such as stakeholders' individual needs and expectations are discussed and presented case by case. The second, value vice aspect of the discussion, related to the motivational factors of stakeholders to co-create value is sustainability with an emphasis on the mindset and values affecting willingness to participate in the co-creation. The third aspect of motivation is related to the macro-level factors that push stakeholders to the direction of voluntary value co-creation.

Increasing EU funding for sustainability-oriented projects in the field of the fishing industry was found as a common motive among studied stakeholders as it allows them to participate in the strategic planning and management of fishing development projects also in the future, securing the continuation of the ongoing development process towards sustainability. As the research manager of the university of applied sciences said in the interview, “For us, it is of great importance to follow and be aware of the funding sources and related policies and decisions regarding allocation of the funding in the field of the Finnish fishery industry”.

Digitization of the supply chain of the fishery industry was considered as an essential macro level driver among all the studied stakeholders. In this regard, considering the professional personnel of the university of applied sciences in the field of information technology, there will be increasing

potential opportunities for planning and managing digitization-aimed fishery development project funding in the future.

Strengthening of the job creation of the local fishery business in the Eastern Finland was an essential macro level driver, shared with the local fishery funding and development organization and the university of applied sciences. Another motivational factor for both of them was enabling continuation of further value co-creation processes by networking in the strategic planning of future projects and attending workshops and meetings with an aim to strengthen connections between essential stakeholder groups, thus creating synergies for more effective economic outcomes, both on local and nationwide levels.

Fish processing cooperative was primarily willing to co-develop and implement a sustainable business model and facilities for production of new fish products by means of a circular economy. Thus, the main motivational micro level factor for them was to participate in the case project's value co-creation process in order to develop a sustainable business model and technologically advanced, automated production facilities for processing a wide assortment of products from cyprinids by means of a circular economy. In the words of the operational manager of the fish processing cooperative, "This would improve our competitive edge for responding to the rising consumer demand for local ecological fish products".

As for macro-level factors, the increasing number of local fishermen was mentioned as a macro-level driver, as it was considered important in terms of the supply and availability of the fish as a raw material to produce fish products.

As a result of the case project, a sustainability and circular economy-based business model with new fish grading, gutting technology and facilities were successfully developed and implemented by the fish processing cooperative in cooperation with the other project stakeholders. As per the interview of the operational manager, "With the support of the project, we achieved our aims better than we anticipated. Without support of the project, we wouldn't have capabilities in terms of networks and expertise and funding for establishing our sustainable businesses".

A professional commercial fisherman, mentioned in the interview that “digitization and growing demand for sustainable domestic fish are the most essential drivers for me looking forward to the future”. Project vice, fisherman was primarily motivated by the project's aim to develop a digital application for reporting catches by mobile phone. In addition, development of the collection and transportation process for small and large catches of fish was a notable motivating factor for the stakeholder. In addition, generating more revenue from cyprinids and side streams was an essential micro level motivating driver to participate in the value co-creation activities of the case project. On an industry-level, motivating driver for the fisherman-stakeholder was the steadily growing awareness and demand for sustainable domestic fish among consumers. In this respect, he added; “We engaged in the case project also because it provided us with good visibility in local and national media, representing our local, sustainable fish products and profession”.

In sum, referring to the studied stakeholders, the megatrend of sustainability together with the rising consumer demand for sustainability were pointed out as the major common drivers among the stakeholders on a macro level whereas cooperation and networking related synergy benefits were identified as common motivational factors on micro level; the case project enhanced the networking of fishery stakeholders through several seminars, meetings, workshops, and other events. This provides an excellent basis for further development of the supply chain and new business models and simplifying the fishery value chain related operations in general.

4.3 Barriers regarding sustainable value co-creation

In respect to challenges related to sustainability-oriented value co-creation of the case study project, there were both system-level and micro-level barriers that hinder stakeholders’ daily business and willingness or ability to participate in the sustainability-oriented value co-creation process of the case project. Following challenges and barriers were defined within the case projects interviews and observation based on the secondary data sources:

“One of the main barriers in the inland fishery environment of the Eastern Finland is the fragmented location of lakes and road infrastructure, making it too costly for a fisherman to transport the smaller batches of fish for further processing.” - Professional fisherman, project stakeholder

According to the university of applied sciences, “difficulties in recruiting and engaging stakeholders in fishery development projects” was mentioned as one of the central micro level barriers regarding their role and mission in planning management of development projects in the region of the Eastern Finland. Moreover, in regard to macro level barriers, “Planning of the new development projects is difficult due to the rigid funding policies and during transition to new funding periods, hindering continuation of the development of sustainability-oriented strategy related processes as in the form of new projects.”

Manager of the local fishery support and funding organization mentioned in the interview that difficulties in sustaining the continuation of the profession of fishermen was the most important barrier on the micro level, hindering the further development and even existence of the fishery business in the region of the Eastern Finland. In this regard, ensuring the adequate amount of fishing rights for commercial fishermen was mentioned as the ultimate requirement for ensuring the future growth of the inland fishery industry.

Besides, rigidity and uncertainty of EU fishery development and funding policies were also mentioned by him as the notable obstacles in their operations on a macro level. Regarding funding, high investments, required in developing new products, was mentioned as a macro level barrier. Moreover, the required investments for starting fishermen were considered as a common macro level barrier, too. In addition, small fish size and mixed catch volumes were mentioned also among studied stakeholders as major common barriers in fishery value co-creation, together with lacking technologies in fishing and fish processing and unprofitable transportation of fish.

Furthermore, the time intensive and manual work centric handling and processing of cyprinids and other mixed and side catches, were found as a common factor hindering value co-creation of all stakeholders. In this respect, grading and transportation related issues of small and mixed lake fish catches in the early part of the supply chain were also considered as one of the major common

barriers in the value co-creation process on industry level. Besides, seasonality of fishing, for instance in case of cyprinids, was found as hindering the growth of business due to lack of resources to allocate efforts during the high peak of the season, when processors would buy fish from fishermen vice versa.

In conclusion, the study of the four stakeholders displayed that there were major common barriers and challenges for sustainability-oriented value co-creation such as the fragmented road infrastructure and availability issues of cyprinids and other inland fish besides with small or mixed size of fish with varying catch volumes and seasons.

Micro-level barriers	Macro-level barriers
Inefficient handling and transportation of fish	Small size of cyprinids due to overfishing
High first investments for starting fishermen	Rigid funding policies
Seasonality in fishing of cyprinids, leading to imbalance in supply and demand	Lack of fishing rights for commercial fishermen
Engagement of stakeholders in development projects	Fragmented geography in the Eastern Finland

Table 5. The common barriers, related to value co-creation in the Finnish inland fishery.

5 DISCUSSION

The objective of the thesis was to find factors that influence and characterize the process of sustainability-oriented stakeholder value co-creation. The phenomenon was examined in the context of the Finnish commercial inland fishery business environment, referring to the case project and its stakeholders. The purpose of the theoretical part was framing the complex and interdependent aspects related to sustainability, stakeholders, and value co-creation with a purpose to form determinants for the empirical part future research.

The empirical part of the thesis focused on the fishery development project being a case study context, including four stakeholders studied in high detail. The examined research problems considered the characteristics of the stakeholders and sustainability-oriented inland fishery related value co-creation process, examining why and how stakeholders engaged in the case project; the drivers of the case stakeholders to participate in such sustainability-aimed case project, the capabilities, and resources they had and were offered, and the barriers they faced during the value co-creation process.

The purpose of this chapter is to discuss the findings of the empirical phase in the framing of the previous theories and literature related to sustainability, stakeholders, and value co-creation. This also displays the benefits of the thesis for managers with an intention to manage or participate in similar kinds of projects in the future. The last sub-chapter discusses the theoretical contributions of the study.

5.1 Findings of the study and the sustainability, stakeholder, and value co-creation theories

Value co-creation is about understanding why and how different stakeholders come together to create value (Hillebrand et al. 2015) whereas one of the ultimate missions of the stakeholder theory is the identification and modeling of the stakeholder groups, as claimed by Freeman et al. (2010). The case project and its stakeholders, examined in the study, show a variety of examples, and characterize how and why co-creation of sustainable value by multiple stakeholders takes place in the context of the Finnish inland fishery. The thesis described in detail how integration of different stakeholder resources with influence of drivers and barriers results in co-creation of sustainable value in the case of the fishery development project. In addition, as mentioned in the empirical part, cooperative and managerial activities related to theories of stakeholder identification, strategic management, stakeholder management, sustainability and value creation could be considered as the second strategic component besides the organizational assets that resulted in outcomes of the case project, as defined by Teece (2018) and Schön. (2012)

Moreover, assessed by the parameters of value co-creation (Pera et al. 2014), project management organization could be considered as a resource integrator, utilizing stakeholder management

means, thus enabling the process of sustainability-targeted value co-creation by multiple stakeholders within the case project. In this regard, when reviewing the traits of the studied case stakeholders, it is clear that all of the stakeholders have comprehensive experience and expertise in the field of the fishery industry, which is crucial in enabling the value co-creation process in terms of the value creation resources as argued by Pera et al. (2016) and Teece (2018), in parallel with the resource integration theory. In this regard, several resource integration tools were used by a focal project management organization in terms of the project workshops, seminars, and meetings. Furthermore, the drivers and barriers of stakeholders were examined and defined as complementary components, influencing the process of value co-creation. When looking at the motivational factors that affect the co-creation of value, based on the studied stakeholders, it is evident that lack of individual resources such as time, money, and knowledge, combined with growing awareness and demand for sustainable fish products were the major common motivating factors among all the studied stakeholders to voluntarily participate in the value co-creation.

Moreover, according to one of the early developers of the stakeholder theory, Freeman (2010), argued that finding the linkages between business and ethics is one of the ultimate purposes of the stakeholder approach, linking it to the normative theories. Referring to many discussions with studied stakeholders about sustainability and overfishing of commercially valuable cyprinids populations, they did not consider sustainability only as an ethical value, but a concrete matter and a business case which required immediate actions from all the inland fishery stakeholders. Thus, participation in the case project's value co-creation was considered as an important duty for the studied stakeholders. In sum, the fundamental and concrete role of sustainability in the case study project is relevant evidence of the connective nature of the stakeholder theory between business and ethics. In contrast, considering concrete business sustainability practices, the ultimate issue or paradox in sustainable businesses is that the drivers of business rarely match directly with those to solve societal or environmental problems. This issue was confirmed in the study of Wright and Nyberg (2017). As discussed above, this was not the case in the study, as according to the results of project stakeholder interviews, because of the project, the gap between the business drivers and environmental issues was narrowed as the new sustainable business model for commercial utilization of cyprinids was implemented, and technology for grading and handling the cyprinids was also implemented, enabling profitable fishing and processing. In this respect it is necessary to

address the crucial role of the non-profit case project, providing and integrating project resources to achieve the purpose of solving the profitability issues in commercializing the cyprinids by environmentally sustainable means. The actual need for creating a business case based on sustainability requires complete implementation and integration of sustainability, thus the case study project presents a very good example of how the aspects of sustainable business model were turned into a concrete sustainable business case in the Eastern Finland inland fishery environment.

Characteristics of co-creation of sustainable value in the Finnish inland fishery

Based on the findings of the empirical research phase of the thesis, three connecting and central categories of characteristics in sustainability-oriented stakeholder value co-creation process were identified in the studied case project: (1) the motives that lead to stakeholder value co-creation, (2) the capabilities of individual stakeholders as value co-creators and (3) resources that the case project management-organization integrated and shared with stakeholders to enable and enhance the value co-creation activities by means of stakeholder management and engagement (Greenwood, 2007), such as collective workshops, meetings and seminars, organized by project manager for stakeholders.

Furthermore, several common motivational factors among case stakeholders explain why and how they engaged in the inland fishery project ecosystem related value co-creation process as follows: (1) the awareness of actual need to develop and implement concrete sustainable business models, practices and technology in order to achieve balance between the exploitation and reserving the imbalanced cyprinids populations, located in the Finnish inland water systems, (2) increasing consumer awareness and demand for sustainable fish products, (3) increasing funding support for development of sustainable fishery businesses, (4) growing number of local commercial fishermen within the Finnish inland fisheries and 5) enhancement of reputation, experimentation and networking benefits were found as essential common drivers among case study stakeholders.

In contrast, common macro level barriers hindering the co-creation of sustainable value among stakeholders were defined as follows: 1) small fish size and mixed catch volumes, 2) lack of technologies in fishing and food processing, 3) unprofitable transportation from the lake to the

processors, 4) seasonality of fishing cyprinids; imbalanced demand and supply of fish, 5) ensuring the adequate amount of fishing rights for commercial fishermen, 6) high investments required for developing new products 7) cope with technical deficiencies, 8) first investment is high for new fishermen.

Process model of co-creation of sustainable value by multiple stakeholders in the Finnish inland fishery business environment

As discussed in the theoretical part of the thesis, a business model based on Teece's (2018) organizational architecture is a relevant concept considering the study context as it focuses on the assets and cooperative activities of stakeholders and project management in supporting utilization of dynamic capabilities of an organization. In framing of the Teece's organizational architecture business model; based on the empirical findings and in light of the theoretical framework of the thesis, it might be argued that the results and outcomes of the inland fishery case project were co-created by the unique and iterative set of multiple stakeholders' resources, drivers and barriers, managed and integrated by the project manager-stakeholder in the role of a focal organization, referring to paper Pera et al. (2016) on factors of multi-stakeholder value co-creation. In this accordance, the process model of co-creation of sustainable value within the Finnish inland fishery is illustrated in figure 3, adapted from Teece's (2018) organizational architecture business model.

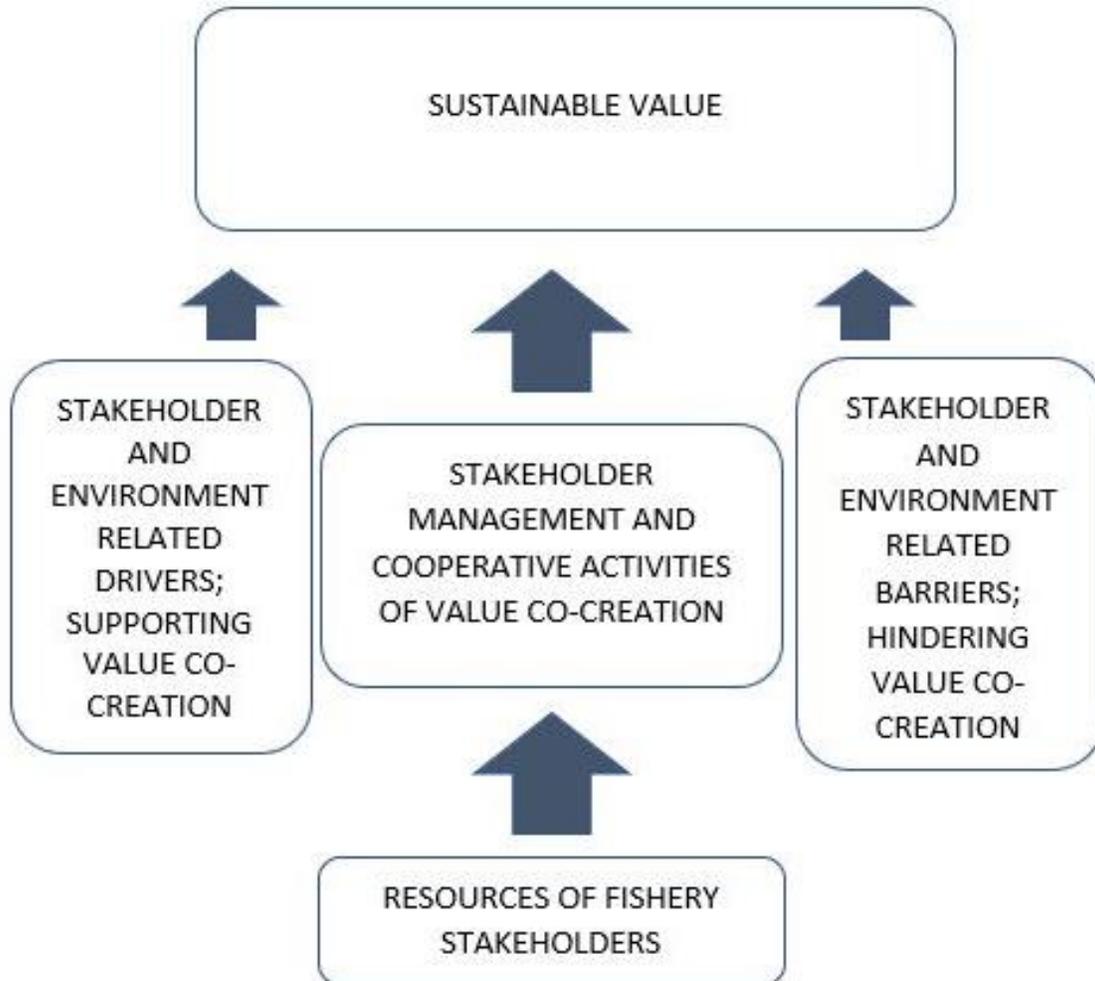


Figure 3. Process illustration of co-creation of sustainable value in the Finnish inland fishery business environment by multiple stakeholders. Adapted from Teece (2018).

5.2 Overcoming the challenges and barriers

Despite the challenges and barriers that all the stakeholders have faced within the value co-creation process, all of the interviewed stakeholders were satisfied with the final results and outcomes of the case project and its value co-creation process, as new operational and technical solutions were adopted and implemented in practice, as described in the empirical chapter. If we compare the

barriers with the regular value co-creation related challenges, it might be argued that there is no radical difference between them.

Emerging from the case study analysis, the most common barriers that stakeholders faced were identified as a lack of personal resources to develop and implement new, more automated, and efficient technologies in fishing and fish processing. In this regard, I would advise to form cooperative groups or alliances of stakeholders, preferably combined with support of non-profit project resources to combine the tangible and intangible resources with an aim to dilute the risks and get synergy benefits.

In addition, regarding the other major barrier found in the study, the fragmented road and lake infrastructure. In this regard, I would advise inland fishery stakeholders to hire a consulting company to calculate the optimal routes and locations for building logistic hubs where fish would be consolidated and distributed further. The third suggestion would be to execute marketing research in order to figure out the customer and consumer needs for developing and commercializing new sustainable fish products, including pet food as a potential highly profitable and truly sustainable, i.e., circularity-based product.

5.3 Theoretical contribution and managerial implications

The study contributes to the literature on stakeholder theory, value co-creation and sustainability. This thesis showed in detail how value is co-created by multiple inland fishery stakeholders, and what are their drivers and barriers within this process. In the domain of stakeholder value co-creation, the issues examined in the study are part of motivation and barrier studies for fishery business owners and governmental entities. To date, there are no value co-creation related studies that focus on the stakeholder's motivation and characteristics affecting the value co-creation. In this accordance, the thesis brings some value to academia.

Based on the outcomes of the study, it could be argued that the implications of the study are more valuable for practitioners than for the researchers. In this regard, the thesis holds value for instance for fishery managers, professional fishermen and project managers, who are willing to develop

their businesses towards cooperative and sustainable direction in the field of the domestic fishery businesses. From the perspective of a project manager at the local university of applied sciences, thus acting as an integrator of the case project resources and value co-creation process, certain outcomes can be defined based on the project work experiences; during the first project meetings and workshops, stakeholders discussed and agreed with the common action plan of the project to share the common values and objectives from the beginning. This could be considered as an important managerial contribution for enabling the efficient co-creation of sustainable value by multiple actors simultaneously.

The fishery policies in Finland continue supporting the potential business case of developing new sustainable fishery businesses. Combined with the underlying consumer awareness and demand for sustainable fish products, competitive expertise of fishery stakeholders and a substantial natural resource potential of cyprinids and other inland fish, the Finnish inland fishery business environment appears very attractive to both private investments and governmental support. Thus, the Finnish fishery authorities should ensure the continuation of the ongoing positive development by providing continuous long-term funding support for sustainability development projects for small and medium-sized fishery businesses and universities of applied sciences.

6 CONCLUSIONS

Multi-stakeholder value co-creation is a contemporary and an emerging issue, studied extensively in the literature. Because of the complex and comprehensive nature of the stakeholder and value co-creation theories, it is difficult to develop a simple model covering the whole phenomenon. However, the current global need for implementing sustainable business practices and developing new products and services are the driving forces for this phenomenon, enforcing basically every commercial entity to participate in creating sustainable business models, products and services, independent from their location, size or field of business, thus including also all of the Finnish inland fishery related stakeholders, as the examples from the case study show.

The Finnish inland fishery stakeholders that were studied in this case study can be described as pioneers in the sustainability and circular economy as they are among the first ones to implement the novel sustainable practices and technology in commercial fishing and fish processing businesses in Finland. In this respect, they probably face more obstacles during co-creation of sustainable value, as the infrastructure is yet to be developed enough to better support the means of sustainability and circular economy as the critical aspects considering the Finnish fish industry's future development and growth.

This study examined the early adapters and figured out the major factors of motivation together with challenges that these stakeholders face in their endeavors within the Finnish commercial inland fishery environment. The stakeholders were challenged by the inefficient value chain, fragmented infrastructure, and lack of resources for developing sustainable fishing and fish processing technology and products. On the other hand, the growing demand for sustainable domestic fish products was found as one of the essential common drivers among the studied stakeholders, in parallel with increasing funding support for the development of sustainable fishery businesses.

Referring to the study context of the Finnish inland fishery business environment, it is evident from the empirical and theoretical results that sustainability related business issues such as imbalance of fragmented and local cyprinids populations were among both the major barriers and drivers among stakeholders to participate in the co-creation of sustainable value. In this respect, the role of non-profit project funding is notable as it enables creation of sustainable-originated economic value on a voluntary, cooperative, and democratic basis. Outcomes of the project are a concrete example of implementation of the sustainability strategy and transferring it to the concrete business case. In parallel with the economic outcomes, ecological and societal sustainability related value was co-created by the project stakeholders. As an example, they improved the state of the local society by generating new vacancies in local fishery businesses thus improving employment on a local level. On the other hand, they participated in improving the ecological state of the inland water systems by reducing eutrophication. And last, but not least important; started the long-term, continuous process of balancing the cyprinids populations in the future, after the project ended.

From the case project manager's point of view, the continuity should be considered as one of the most essential outcomes of the project, as it accompanies the sustainability in "meeting the needs of the present generation without compromising the ability of future generations to meet their needs" as stated in the Brundtland report (1987).

Based on the results of the study, my assessment is that sustainability-oriented value co-creation has strong fundamentals and potential in the context of the Finnish inland fishery. Thus, it seems reasonable to continue strategic planning and further studying of the sustainability-related multi-stakeholder value co-creation processes, addressing stakeholder management and resource integration practices with an aim to generate the phase for more efficient and sustainable value co-creation in the future. The already nicely started development process would enable steady growth of a more sustainable and profitable domestic fish industry, thus generating wellbeing and wealth both on local and national levels, embedded with a remarkable growth potential in international trade.

6.1 Scope and limitations

The focus of the study was on the sustainable stakeholder value co-creation phenomenon in the context of the case project in the Finnish inland fishery. Whilst the most important aspects of this study could be transferred to, and have relevance for, other sustainability-oriented value co-creation processes, a chosen case study research context limits the generalizability of its findings. The choice to narrow the context of the study to inland fisheries was due to the project resources and funding agreements that limited the operational budget and locale. Choosing the case project as the object of the research was a conscious decision from the author, as it linked the study with the writer's work and professional substance as a project manager.

Furthermore, the limited number of fishery project stakeholders set strict boundaries for the thesis, as the writer was not able to choose freely among a wide variety of stakeholders. On the other hand, the small scale of the case project allowed the author to observe and collect the required information and data more precisely and efficiently, leading to a deeper understanding of the research phenomenon.

The thesis examined only the perceptions of characteristics, drivers and barriers of the stakeholders that are participating in the case project. Thus, the purpose of the study was not to verify whether the studied factors related to value co-creation are true on a larger scale. The perceived outcomes of the stakeholder characteristics might affect the value co-creation of only the studied stakeholders.

In conclusion, the thesis is based only on qualitative data of the studied four case stakeholders. A quantitative survey to all the project stakeholders representing the whole potential sample, would have been a more effective choice to receive more comprehensive results, balancing the potential bias in case of the small sample group.

6.2 Validity and reliability of the study

Due to the chosen case study approach with limited sample choice of the study posed certain possibilities for biases and errors. Firstly, the number of studied stakeholders might be too small for illustrating the phenomenon and creating an extensive view of the research topic. Moreover, the small number of potential stakeholders limited the options to choose, thus it was not possible for the researcher to freely choose the case stakeholders he wanted to include in the sample.

Another potential issue, related to the data collection is a possible mistrust or other factors, such as random interruptions, harming the communication between the interviewer and respondent. For instance, business-driven stakeholders might have turned reserved while discussing personal traits and capabilities regarding development of fish processing technology and business models, resulting in too superficial interview data for more extensive analysis.

Moreover, the extension of the study to other fishery environments or countries is compromised since only the case project related Finnish inland fishery stakeholders are included in the study. Thus, there are probably several other sustainable value co-creation-oriented actors in Finland and Europe, aiming to improve their sustainability in other fishery business environments and ecosystems.

In conclusion, the personal views of the writer might have also affected the results of this study. The author worked as a project manager in the case study project. This might have had an impact on the author, leading to biased results.

6.3 Future research

The phenomenon of sustainability-oriented stakeholder value co-creation in the Finnish inland fishery environment is a relatively narrow and specific topic. Having identified the key characteristics, drivers and barriers related to sustainable stakeholder value co-creation in the Finnish inland fishery context, it would be relevant to replicate this study in a different setting, however equally characterized by a comparable level of complexity and diversity of stakeholders, for instance in the field of the maritime fisheries or in other EU countries. Moreover, based on the findings of this study, it would be also beneficial to thoroughly study the interactions between stakeholders during the sustainable value co-creation process, by using a quantitative social network analysis approach that would be relevant in examining how the complex set of multi-stakeholder relationships operates in terms of connectivity, interactions, and salience.

In addition, an ideal continuation of the present study would involve a longitudinal study, examining implementation and scaling of sustainable and circular business models in the fishery businesses. Moreover, studying and developing indicators and practices for measuring and reporting social and environmental impacts in the context of sustainability reporting and integrated reporting in the Finnish fish industry. Finally, studying the long-term learning processes and effects of sustainable stakeholder value co-creation processes that result from this case project's experiences would be a potential continuation of the present study.

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Appendix 1. Stakeholder characteristics

Characteristics	Stakeholders (class/type, amount of personnel, role, core resources and competences)	Sustainability (drivers, barriers)	Value co-creation (role, fishery experience in years, fishery related resources and competencies, drivers, barriers)
Stakeholder A	<p>Class/type: University of applied sciences (RDI department) Amount of personnel: 200-300 Role: planning and management of sustainability-oriented development (RDI) projects in the Eastern Finland Core resources and competences: Big headcount, highly skilled and experienced personnel with higher education, capable to plan and manage RDI projects in sustainability and fishery business Drivers: Megatrend of sustainability, digitization of the fishery business Barriers: rigid funding policies hindering continuation of strategic long-term development processes</p>	<p>Drivers: Increasing project funding for sustainability related development Barriers: Recruiting competent personnel for sustainability development projects</p>	<p>Role: Project management, resource integration, stakeholder management, stakeholder engagement Fishery knowledge and skills: personnel with higher fishery education or professional background in fishery related businesses Drivers: Development of competitive local economy, improving networking Barriers: Rigid and fragmented funding hindering the continuous strategic project development process, engaging stakeholders in projects</p>
Stakeholder B	<p>Class/type: Fishery and rural economy development organization Amount of personnel: 5 Role: planning of fishery development projects, supporting and activating fishery stakeholders, networking on local and national levels</p>	<p>Drivers: Increasing funding for sustainability related fishery development Barriers: sustainability actions tend to lead to lower profitability in fishing and fish processing businesses</p>	<p>Role: Networking, stakeholder engagement Fishery knowledge and skills: Deep understanding of the inland fishery environment and its stakeholders, wide networks on local and national levels, knowledge and experience in fishery</p>

Appendix 1. Stakeholder characteristics

	<p>Core resources and competences: Governing EU funding resources to be allocated for development of local fishery businesses and local economy, deep understanding of the inland fishery environment and stakeholders, wide networks on local and national levels Drivers: Strong growth potential in inland fishery business due to growing demand for sustainable local fish products Barriers: Fragmented geography hindering efficient and profitable utilization of inland fish, such as cyprinids</p>		<p>development related funding Drivers: Increasing number of commercial fishermen, increasing funding for development of competitive local fisheries in the Eastern Finland Barriers: Effective allocation of funding in terms of outcomes (creation of new businesses), rigid funding policies hindering continuation of fishery development processes, difficulties in engaging stakeholders in continuous long-term development projects and processes</p>
<p>Stakeholder D</p>	<p>Class/type: Commercial professional fisherman Amount of personnel: 1 Role: Supplier of fish to different customer groups (direct sales to consumers and firms) Core resources and competences: fishing equipment and technology and premises for handling fish, long experience (20+ years) in commercial professional inland fishing Drivers: Steadily growing demand for local fish Barriers: Lacking technology for</p>	<p>Drivers: Growing customer awareness and demand for sustainable local fish, such as cyprinids Barriers: Conflicts between sustainability and efficiency and profitability in fishing (techniques and equipment related)</p>	<p>Drivers: Networking synergies in co-development of collection of small and large fish catches, increased competitive edge and more income from direct sales of sustainable local fish to local consumers and firms (cyprinids; mostly bream and roach) Barriers: Conflicting interests with rivaling stakeholders; competitors, lack of time for participation in project actions, such as workshops and meetings</p>

Appendix 1. Stakeholder characteristics

	utilizing side catches, especially bream and roach		
Stakeholder C	<p>Class/type: Fish processing cooperative</p> <p>Role: Production of sustainable, healthy, local fish products and pet food</p> <p>Amount of personnel: 10-20</p> <p>Core resources and competences: highly experienced members in fishing and fish processing, business knowledge, local networks, professional fishers as members of cooperative; ensuring supply of fish</p> <p>Drivers: Creating sustainable business model based fish production facilities, scaling production capacity</p> <p>Barriers: Seasonality in supply of cyprinids; availability issues, inefficient supply chain, manual processing of fish; low profitability, big investments required in automated fish processing technology</p>	<p>Drivers: Development of a circularity-based sustainable business model, growing consumer demand for sustainable domestic fish products, growing consumer demand for domestic fish products, strong brand image in sustainable, local/domestic fish products</p> <p>Barriers: Conflicts between sustainability and efficiency in fish processing (manual work intensive)</p>	<p>Drivers: Co-creation of a circularity-based business model, piloting of an automated grading and gutting technology for cyprinids and other small fish, networking synergies, wider product assortment; lower dependence on pikeperch and vendace; stability of business and higher income</p> <p>Barriers: Conflicting interests with rivaling stakeholders, lack of time for participation in project actions, such as workshops and meetings</p>

Appendix 2. Semi-structured interview form

Stakeholder related:

Juridical type of your business? (Person, company, organization?)

Domain/branch of your company/organization in the Finnish inland fishery industry/business environment?

Products and/or services of your company or organization?

Core resources and competences?

Number of personnel?

What are your drivers related to operating as a single stakeholder in the fishery business environment?

What kind of barriers have you faced while operating as a single stakeholder in the fishery business environment?

Sustainability and circular economy related:

What are the main drivers for participating in the sustainability-oriented case project?

What are the main barriers regarding sustainability and circular economy in practice in your opinion?

How do you assess the factor of sustainability-related commercial potential in fishing/fish processing of underutilized fish as part of your participation in the case project?

What is the role of funding in your sustainability and circular economy-oriented operations (and part of the strategy)?

Value co-creation related:

What are the main drivers for you to participate in the sustainable value co-creation related process with other stakeholders in the Finnish inland fisheries network?

Appendix 2. Semi-structured interview form

Which factors do you consider as your fishery related competencies and resources in value co-creation?

What were the means of activities and interaction regarding value co-creation?

What barriers did you face within the value co-creation process with other stakeholders?

What kind of business opportunities and potential do you see in value co-creation, related to cyprinids and other underutilized fish in the future?