CGIAR RESEARCH PROGRAM ON Fish
Led by WorldFish

Photo credit: Md. Masudur Rahaman/WorldFish

Gendered aquaculture value chain analysis and development:
An analytical framework

Led by WorldFish

Funded by Bill & Melinda Gates foundation

In partnership with KIT Royal Tropical Institute

Gendered aquaculture value chain analysis and development: An analytical framework

Authors

Froukje Kruijssen, Katrine Danielsen, Julie Newton and Yngve Braaten.

Citation

This publication should be cited as: Kruijssen F, Danielsen K, Newton J and Braaten Y. 2021. Gendered aquaculture value chain analysis and development: An analytical framework. Penang, Malaysia: CGIAR Research Program on Fish Agri-Food Systems. Manual: FISH-2021-27.

About WorldFish

WorldFish is a nonprofit research and innovation institution that creates, advances and translates scientific research on aquatic food systems into scalable solutions with transformational impact on human well-being and the environment. Our research data, evidence and insights shape better practices, policies and investment decisions for sustainable development in low- and middle-income countries.

We have a global presence across 20 countries in Asia, Africa and the Pacific with 460 staff of 30 nationalities deployed where the greatest sustainable development challenges can be addressed through holistic aquatic food systems solutions.

Our research and innovation work spans climate change, food security and nutrition, sustainable fisheries and aquaculture, the blue economy and ocean governance, One Health, genetics and AgriTech, and it integrates evidence and perspectives on gender, youth and social inclusion. Our approach empowers people for change over the long term: research excellence and engagement with national and international partners are at the heart of our efforts to set new agendas, build capacities and support better decision-making on the critical issues of our times.

WorldFish is part of One CGIAR, the world's largest agricultural innovation network.

About KIT Royal Tropical Institute

KIT Royal Tropical Institute is an independent center of expertise and education for sustainable development. We assist governments, nongovernmental organizations and private corporations around the world to build inclusive and sustainable societies, inform best practices and measure their impact. Guided by the UN Sustainable Development Goals, our work focuses on health, gender, economic development and intercultural cooperation.

Acknowledgments

Funding support for this work was provided by the Feed the Future Bangladesh Aquaculture and Nutrition Activity [720388181O00002] (funded by the United States Agency for International Development) and the Aquaculture: Increasing Income, Diversifying Diets and Empowering Women in Bangladesh and Nigeria project [INV009865] (funded by the Bill & Melinda Gates Foundation). This work was also undertaken as part of the CGIAR Research Program on Fish Agri-Food Systems (FISH) led by WorldFish. The program is supported by contributors to the CGIAR Trust Fund. Additional support for this work came from KIT Royal Tropical Institute's knowledge investment fund.

The authors would like to thank Lauren Pincus and Rahma Adam for their valuable comments on an earlier version of this document.

Contact

WorldFish Communications and Marketing Department, Jalan Batu Maung, Batu Maung, 11960 Bayan Lepas, Penang, Malaysia.
Email: fish@cgiar.org

Photo credits

Front cover, Md. Masudur Rahaman/WorldFish; page 3, Sylyvann Borei/WorldFish; page 6, Samiran Datta/WorldFish; page 18, Mona El Azzazy/WorldFish.

Table of contents

1. Executive summary

In the past three decades, the aquaculture sector has seen steady growth. This has brought benefits such as increased availability of fish for consumption, the generation of income and employment and a contribution to economic growth through international trade. Yet it is questionable to what degree this growth has been inclusive, particularly of women, youths, minorities, small-scale actors and other disadvantaged groups. As in other value chains, it is clear that differentiated approaches are needed to ensure that aquaculture value chain development achieves equitable results for different groups. This requires development practitioners and researchers to have a thorough understanding of the different opportunities, barriers and challenges that diverse groups of people face in the value chain. Gendered value chain analysis is a tool that supports the process of understanding the different realities that people face, not only in accessing the required technical knowledge, skills, inputs and resources required for the value chain, but also in the power relations that exist and how underlying formal and informal rules and norms influence all of this.

Recognition of the importance of gender analysis has been increasing. In practice, however, gendered value chain analysis often does not go beyond examining the gender division of labor, and the practical barriers women face, without understanding and addressing the underlying structures that influence this. This analytical framework for gendered value chain analysis attempts to address this by describing key analytical concepts and dimensions, introducing a range of gender outcomes and explaining how all of this can be brought together to provide a solid basis for designing interventions that support equitable upgrading of value chains. It is the intention that with this framework, comprehensive value chain analyses can be designed that generate a general understanding of the functioning of the value chain and fully integrate a gender analysis into all aspects of the enquiry. While the document has been developed with aquaculture value chains in mind, it is equally applicable for other (agri-food) value chains.

Four key concepts of gender analysis are introduced: (1) gender division of labor, (2) access to resources and distribution of benefits, (3) decision-making and control over activities, resources, income and food, and (4) formal and informal structures, including social and gender norms. These concepts can be applied to obtain a description of gendered value chain composition, create an understanding of gendered value chain performance and gendered value chain governance, and develop options for gendered value chain upgrading.

To guide the development of gendered value chain interventions, it is useful to include specific gender outcomes that these interventions aim for. We propose the Reach-Benefit-Empower-Transform (RBET) framework to provide clarity about what and which level of outcomes are being targeted. The first three outcomes relate to changes for individuals, and the fourth to changes in society (systems or structures).

A challenge with analytical frameworks is often that they do not describe how they can be applied in practice. Meaning, it is difficult for practitioners to understand how to apply analytical concepts all the way through data collection and analysis, as well as formulation of results, to planning action based on those results. This document therefore also provides some practical guidance on the stages of planning and design, data collection and analysis, formulation of project interventions, and monitoring and evaluation of the interventions.

2. Introduction

At present, the global aquaculture sector contributes almost half of all fish produced globally, as a result of a steady increase in production over the past three decades (FAO 2020). This growth has brought benefits such as a steady increase in (apparent) global average per capita fish consumption because of increased availability of fish (FAO 2020) and direct access to fish for those involved in production, which both contribute to food and nutrition security in several ways (Béné et al. 2016). Furthermore, the sector has increasingly provided employment and incomes for those involved in aquaculture production, processing and marketing, and has contributed to economic growth and countries' trade balances through exports (Béné et al. 2016). However, the income, food and other benefits that the aquaculture sector provides are not evenly distributed across different groups, including women, youths, minorities, small-scale actors and other disadvantaged groups (Ndanga et al. 2013). For example, the quality of jobs in the aquaculture value chain differs between women and men, with women disproportionately represented in lower-level jobs, on temporary contracts and in less-profitable nodes of aquaculture value chains than men (Kruijssen et al. 2018). In addition, women's roles in aquaculture are often underrecognized or "hidden," which is a result of them not being the final decision-makers or formal owners of ponds and land (Kruijssen et al. 2018).

In the development of aquaculture (and other) value chains, it is increasingly being recognized that differentiated approaches are needed to ensure that value chains bring equitable results across different groups, particularly for women. Yet this often does not go beyond ensuring that women are included in training. This conflates gender integration with only targeting women or, at best, recognizing that men and women have different roles and different levels of decision-making power. Often value chain analyses fail to recognize the importance of formal and informal institutions in shaping outcomes for women and other disadvantaged groups in value chains. This leads to limited understanding of the gender-based differences in engagement and benefits from aquaculture as well as the full extent of constraints and opportunities to making aquaculture more responsive to the needs of women and men. In turn, this means that interventions based on such analyses fail to recognize and engage with these structures and therefore do not lead to women's empowerment and gender-transformative change. At worse, project interventions formulated based on such studies risk perpetuating or even exacerbating existing inequalities.

This framework provides the conceptual underpinnings for gendered aquaculture value chain studies and informs the design of gender-equitable and gender-inclusive project interventions. It integrates the "standard" elements of value chain analysis, such as a functional and economic analysis of the chain, with a social and gender analysis into one comprehensive framework. It provides key concepts and analytical building blocks for gendered value chain analysis, and also direction for the design of a detailed gendered value chain study protocol. While many of our examples focus on women, it is important to recognize that different facets of social identity interact with gender to create inequalities, including age or life stage, class, ethnicity, caste, ability, religion, marital status, sexual orientation, geography, migration and legal status, and more (McDougall et al. 2021).

To support the implementation of gendered aquaculture value chain studies based on this analytical framework, a suite of quantitative and qualitative tools have been developed. These include surveys for fish farmers and traders, focus group discussion tools for value chain mapping, and exploring the different gender dimensions explained in this framework. All are available upon request.

This framework can be used to design studies to identify constraints and opportunities to the functioning of value chains in general. More specifically, it can analyze factors and processes that influence inequalities in engagement and benefits of small-scale actors, including women and youths, as well as women's empowerment within particular policy, institutional and infrastructural contexts. It is targeted toward practitioners and researchers in aquaculture value chains who aim to include a gender lens in value chain

analysis and development. While the framework is framed around aquaculture value chains, it can also be useful for practitioners and researchers in other (agricultural) products, and for gender researchers and practitioners who wish to engage in gender research in value chains and in the context of understanding food systems.

The framework was originally commissioned in the context of the CGIAR Research Program (CRP) on Fish Agri-Food Systems (FISH). Specifically, it was meant for application in two projects: (1) the Feed the Future Bangladesh Aquaculture and Nutrition Activity, funded by the United States Agency for International Development (USAID) and (2) the Aquaculture: Increasing Income, Diversifying Diets and Empowering Women in Bangladesh and Nigeria project, funded by the Bill & Melinda Gates Foundation (BMGF). The framework was intended to support FISH and its partners to more effectively integrate gender equality and social inclusion into its value chain research. Based on an earlier version of this framework, a value chain analysis was published (Kruijssen et al. 2021) and that study also led to revisions of the original analytical framework. The analytical framework builds on several other value chain frameworks, including the European Commission's Value Chain Analysis for Development program (VCA4D) and the value chain analysis tools and framework developed for the CRP on Livestock and Fish (Baltenweck et al. 2019) as well as the general literature on global value chains, such as Gibbon et al. (2008), Ponte and Ewert (2009) and Ponte and Sturgeon (2014). It also builds on the gender strategy of FISH (2017), selected donor frameworks, such as USAID's Gender Equality Continuum (IGWG 2017), the BMGF's conceptual model of women's empowerment (van Eerdewijk et al. 2017) and WorldFish's guidance note on gender and intersectionality in food systems research for development (McDougall et al. 2021).

This document consists of the following elements: Section 3 describes the key dimensions of gendered value chain analysis, defines a number of key value chain and gender concepts, and proposes four dimensions of gender analysis. Section 4 presents the analytical framework, which applies these concepts to four key components of value chain analysis: composition, performance, governance and upgrading. Section 5 introduces the notion of gender outcomes and introduces the RBET framework of gender outcomes. These outcomes can be used to plan, monitor and evaluate gendered value chain interventions. Finally, Section 6 provides some guidance on how to use this analytical framework by suggesting a number of steps for planning and designing gendered value chain analysis, data collection and analysis, formulating project interventions for value chain upgrading, and monitoring and evaluation.

A woman feeds her catfish in Stung Treng, Cambodia.

3. Key concepts and dimensions for gendered value chain analysis

First, it is important to create a joint understanding of a number of value chain and gender concepts and the way they are used in this analytical framework. This section provides our interpretation of these concepts, and the four dimensions of gender analysis that we consider of key importance. In Section 4, we show how they can be joined together to form the basis of a gendered value chain study.

3.1. Key concepts

Key concepts around value chains include the terms used to indicate people in different roles in the value chain, specifically value chain actors, employees, and input and service providers, as well as the environment of formal and informal structures in which the value chain operates (Box 1).

Box 1. Key value chain concepts

Value chain: The full range of activities required to bring a product or service from conception, through production, transformation and marketing to delivery to final consumers and final disposal after use (Kapinsky and Morris 2000). It encompasses the flow of products, knowledge and information, finance, payments and social capital needed to organize different activities. In the context of aquaculture, this concerns activities needed to produce, process, trade and consume different fish and/or fish products.

A value chain encompasses several elements and functions:

- **Value chain actors**: All individuals (self-employed and entrepreneurs), units (e.g. households), firms and organizations (e.g. cooperatives) that are directly involved in value chain activities. In aquaculture value chains, they typically include farmers, traders (wholesalers and intermediaries of fish), processors and retailers, consumers. Sometimes, seed suppliers (hatcheries, nurseries and seed traders) are also included as value chain actors.

- **Value chain supporters:** These are individuals and organizations that surround the chain actors, providing them with the inputs and services needed to operate the value chain. They encompass feed producers and dealers, fertilizer and medicine dealers, and (in some cases) ice suppliers, among others. Sometimes, hatcheries and nurseries are included as input providers. They also include financial institutions, which provide credit, and transporters, which provide transportation, as well as business service providers, auctionnaires and certification service providers.

- **Value chain employees:** These are workers who hold the type of job defined as paid employment (casual or permanent). Employees are employed by value chain actors as well as input and service providers along the value chain. Unlike value chain actors, employees are not owners of the value chain product.

- **Value chain enabling environment:** This is the context in which the value chain operates. It comprises the formal and informal structures, including rules, regulations and policies, and the organizations that implement or enforce them, as well as informal social and gender norms (Section 3.2).

Key concepts around gender entail understanding gender as a social relation, intersectionality and women's empowerment (Box 2). As indicated, when analyzing gender relations, it is important to understand that this is not only about women. It involves looking at how gender as a social relation of power affects different women and men. At the same time, these unequal gender relations have historically disadvantaged women. To achieve gender equality, many value chain interventions then focus on exploring opportunities for interventions aimed at women's empowerment.

Box 2. Key gender concepts

Gender as a social relation: Social relations are structural relationships that create and reproduce systemic differences in the positions of different groups of people (Kabeer 1994; Kabeer and Subrahmanian 1996). Social relations of gender are understood as specific forms of power relations between men and women in a given society (Kabeer 1994; March et al. 1999) that affect men, women and alternative genders. Gender relations are dynamic, subject to change and context-specific. The disadvantages that women face are a result of unequal gender relations. Gender relations operate at the household, at the community level, in value chains and markets, and in legal and policy environments (Kabeer 1994; March 1999; Danielsen and Wong 2013; van Eerdewijk et al. 2017).

Intersectionality: Gender relations do not operate in isolation. Instead, they interact with other spects of social identity, such as age, marital status, class, caste, ethnicity, race and religion. Inequalities experienced in a value chain are seldom the result of a single social marker or factor, but rather the outcome of intersections of different social markers and power relations (Hankivsky 2014). This means that applying a gender and intersectional lens entails looking at how other facets of identity come together and interact with gender to produce disadvantage and marginalization, as well as positions of advantage and privilege. A gendered value chain analysis should refrain from approaching gender as "binary," in which women and men represent indivisible homogeneous social categories (FISH 2017). However, using an intersectional gender approach requires a balance of social and gender aspects. It should be synergistic, rather than at the expense of recognizing gender as one of the primary axes of social relations of power (Farhall and Rickards 2021; McDougall et al. 2021).

Women's empowerment: This is understood as a process of ongoing change through which women expand their aspirations, strengthen their voice, exercise their choice and have greater influence and control over their lives and futures. Women's empowerment is both an outcome and a dynamic process underpinned by the transformation of the different dimensions of gender relations (McDougall et al. 2021).

3.2. Key dimensions of gender analysis

To understand how gender affects an individual's ability to benefit and navigate value chains, a gendered value chain analysis needs to consider four key dimensions of gender relations: gender division of labor, access to resources and benefits, decision-making and control, and formal and informal structures. For more information on these four dimensions refer to McDougall et al. (2021).

3.2.1. Gender division of labor

The gender division of labor regards women's and men's different productive and reproductive tasks, roles and positions throughout the value chain

Source: Original figure, drawn on and adapted from Mukhopadhyay et al. 2013, Eerdewijk and Danielsen 2015; Rao 2015; Mukhopadhay 2017; McDougall et al. 2021.

Figure 1. Four dimensions for gender analysis.

and beyond, including paid and unpaid work. It is particularly important to identify the often underrecognized (or "hidden") roles of women in aquaculture value chains, such as feeding, weeding, cleaning, harvesting and sorting fish at the production level (Kruijssen et al. 2017.)

3.2.2. Access to resources and distribution of benefits

Access refers to the opportunity to use a resource or asset. Women and men across different intersectional stratifications (such as age or life stage, wealth, disability status and ethnicity) have varying levels of access to productive resources, including knowledge, technologies, ponds, tanks, seeds, inputs, fishing areas, fishing gear and credit.

Benefits refer to the results of accessing and using the respective resources. These benefits can include higher income, reduced workload and improved health, nutrition, well-being and social status. Three types of resources are recognized: human (e.g. labor, health, skills), tangible (e.g. capital assets, productive assets, credit, natural resources and inputs) and intangible resources (e.g. social capital, political influence, family support, feelings of confidence and efficacy). Note that accessing these resources and benefits does not mean a person can control how they are used. As such, we distinguish access from control (Section 3.2.3).

3.2.3. Decision-making and control

This dimension concerns the analysis of the relative power of different women and men to make decisions and act on them. This dimension extends the analysis of access to resources and benefits to controlling how they are used and distributed. This includes who has the ability to choose how and when to use a resource as an input into the value chain or allocate it to other uses (Kruijssen et al. 2017). Moreover, it entails an analysis of how power shapes the social relationships between value chain actors, and how these relations of power shape opportunities and constraints of farmers and other value chain actors to meaningfully participate in, and benefit from, aquaculture value chains. This takes shape in who can decide to use resources and benefits, and who has voice, influence and bargaining power within the value chain.

3.2.4. Structures: Informal, semiformal and formal

Informal structures, including gender and social norms, are the informal social rules and assumptions about what men and women should do, how they should behave and with what resources, and the status of individuals and their relative value in society. Gender norms are likely to affect the roles, constraints and opportunities of women and men as well as perceived needs in aquaculture value chains. They refer to the beliefs and expectations to which gender identity conforms (how women and men should act) in a specific setting at different life-cycle stages (Eerdewijk et al. 2017). Gender norms frame the context within which women and men participate in and benefit from aquaculture value chains (Kruijssen et al. 2017). For instance, religious norms and beliefs may restrict women from going to markets. Importantly, gender norms can differ depending on geographical location, certain social groups in society or specific aquaculture production systems. For example, there could be different norms related to women's and men's work in homestead aquaculture systems compared with commercial aquaculture.

Semiformal and formal structures are rules and regulations, policies and institutions, such as property rights. They have the potential to transform gender relations, but often they reinforce negative gender and social norms and stereotypes and risk perpetuating inequalities and inequities.

Bina Majhi, hatchery owner, Bangladesh.

4. The analytical framework: Components of gendered value chain analysis

Standard value chain analysis is usually concerned with value chain composition, performance and governance. The ultimate goal of such analyses is usually to identify opportunities for value chain upgrading—ways of improving the capabilities, technologies and institutions in a value chain so that value chain actors are able to improve the way they operate and perform. This section explains these four elements of value chain analysis in more detail. It focuses on how gender analysis can be integrated into them by applying the gender concepts and dimensions of Section 3.

4.1. Gendered value chain composition

Generally, an analysis of the value chain composition describes the value chain product(s) and its value, the different functions in the chain and the roles different actors play in the chain (including all elements of Box 1). This usually includes a detailed value chain map and a description of the production system(s), actors, inputs and services, products and main markets, and how this varies on a seasonal basis. Gender analysis adds a deeper understanding of the gender and intersectional division of labor within and across value chain nodes. This includes variations across other aspects of social identity, as well as an analysis of how formal and informal structures, particularly social and gender norms, influence this. The analysis should provide details also on the number (or shares) of men and women in different nodes and roles. The analysis should be granular, in the sense that it distinguishes who is in these roles for high and low value products within the chain. It should also examine the division of (visible and invisible) roles and responsibilities (e.g. supporting tasks such as stocking of ponds, fertilization and feeding at the production level, or sorting and packaging at the trader level) as well as the division of positions (e.g. manual labor and management positions at the processing plant). The description of the gendered value chain composition usually forms the basis for the other components of the analysis (Sections 4.2–4.4).

4.2. Gendered value chain performance

Value chain performance is about the outcomes of value chain participation for those who are involved (or excluded). Commonly, this is about economic performance. Specifically, it is about how the value chain performs in terms of economic indicators, such as the volumes being traded, the prices being paid, the returns in the value chain as expressed by margins, profits, wages and financial viability, and the value added and employment it creates. A gender analysis ensures that such data is collected, analyzed and presented in a sex-disaggregated way, revealing, for example, gendered differences in profits, prices, volumes, wages and employment. In addition, it adds an understanding of social performance, which concerns performance on social indicators, or the terms of engagement of different men and women actors in the chain. For example, it looks at the distribution of benefits and power, and the degree of risk associated with fulfilling a particular function in the chain. For value chain employees, this relates to the quality of employment as reflected in the types of jobs, whether formal or informal, permanent or casual, and manual labor or managerial positions. It also relates to wages, working conditions, risks and social benefits, and concerns how this varies between different men and women.

4.3. Gendered value chain governance

Value chain governance involves the processes of decision-making and power relations among different actors in a value chain. This takes place at various levels of the chain and is based on different conceptual understandings of "value chain governance":

- At the level of the "whole chain," value chain governance has often been analyzed with a focus on "lead firms" that are "driving" the process of organizing activities in the value chain (Ponte and Sturgeon 2014). Gender concerns have featured in "whole

chain" governance analysis in relation to the content and implementation of labor codes, and the relationship with the formality or informality of employment and tasks, roles and responsibilities of men and women within this (Dolan et al. 2003; Tallontire et al. 2005). An intersectional perspective would deepen this to explore differences across different types of women and men.

- At the level of specific *value-chain nodes*, value chain governance analyses have often focused on the "coordination" of activities (economic relations) between value chain actors performing different functions (Gibbon et al. 2008). A gender analysis adds an understanding of social relations of power to this analysis (Reinecke 2018). This includes focusing on power relationships between different actors, such as in relation to market information asymmetries and dependency relationships based on credit. This requires diving into "who" these actors are based on their gender and other facets of their social identity and understanding who has influence and decision-making power over these activities.

- At the *intrahousehold and community levels*, value chain governance is understood to be about the influence of individuals who are important in the lives of value chain actors (outside the chain) and how power is divided between them, such as how a community leader's influence or opinion affects what roles women can fulfill (Kruijssen et al. 2017). This relates to the informal structures of norms and attitudes.

All three levels of governance are influenced by formal (e.g. policies, legal frameworks) and informal structures and institutions (e.g. social and gender norms play an important role). On the one hand, these may support the performance of the chain by, for example, promoting a transparent, stable macroeconomic policy, or they may hinder it by imposing restrictions on allowing competition to flourish (Laven and Pyburn 2012). In addition, advocacy movements might influence the context in, for example, environmental or social issues, or social structures like traditional social hierarchies, such as patriarchy.

4.4. Gendered value chain upgrading

Value chain development usually includes value chain upgrading. This refers to improving the capabilities, technologies and institutions in a value chain generally or for specific actors so that they are able to improve the way they operate and perform. Generally, value chain upgrading is understood as *economic* upgrading, meaning increasing the economic benefits that value chain actors derive from their value chain activities. It is often about "moving up" in the chain by adding functions or making products of higher value. But for value chain actors in developing countries, it may also be about doing things more efficiently or producing more of a lower value product (Ponte and Ewert 2009). A gender analysis, adds the concept of *social* upgrading, with the goal to enhance the social performance of the chain. For value chain actors, this is about a more equitable distribution of benefits and/or power, or about reducing the risks from participation, while for value chain employees it concerns the quality of jobs and the terms of employment, such as wages being paid, contractual terms, etc. (Kruijssen et al. 2017). It could also be about creating conditions for a value chain to perform better in terms of providing collective benefits for a community, rather than for individuals. One example is Fairtrade certification, where communities jointly invest in education or health care. It could also be about developing the capacity of workers to voice their concerns and have influence, or for buyers to exert pressure through governance mechanisms on working conditions in place, for example through the use of standards for certification.

The two types of upgrading are related but do not necessarily move in the same direction. Economic upgrading, specifically, does not guarantee social upgrading, because producing a more valuable or profitable product does not necessarily result in improved equity or improved working conditions for value chain workers (Ross 2011; Barrientos et al. 2011; KIT et al. 2012). Furthermore, upgrading may not have the same results for everyone, as there may be winners and losers when an actor or firm upgrades. It is therefore important to be aware of potential trade-offs in upgrading trajectories. Social upgrading usually requires challenging structural barriers to social and gender equality. These are context-specific power relations and discriminatory institutional norms that inhibit the

equitable enjoyment of opportunities, resources and rewards from value chain development.

Two broad categories of upgrading strategies can be recognized. (See Bolwig et al. (2010) for a general discussion and, for example, Ponte et al. (2014), Kruijssen et al. (2021), Kaminski et al. (2018 and 2020) and Lim (2016) for applications in aquaculture.) Section 6 will expand on options to support these two types of value chain upgrading:

1. Improving product, process, volume and/or variety in the same value chain node or function: This is about doing things better or more efficiently by improving practices and/or technologies or by working together in better ways, such as horizontal or vertical coordination. This can be about producing better quality products or by reducing costs, or a combination of both.
2. Changing and/or adding functions either up or downstream in the chain, or in input and service provision: This can be functional upgrading by adding on higher or lower value roles in other parts of the chain, but it can also be a complete transition to another function.

Table 1 summarizes the components of standard value chain analysis and what is added with the integration of a gender analysis. It shows how applying a gender analysis lens entails deepening the analysis to not only look at differences between how women and men participate, benefit and maneuver the value chain, but also consider other facets of social identity (age, wealth, caste, etc.). Figure 2 depicts all elements of the analysis, including the elements of Sections 3 and 4. It shows the different steps needed to conduct a gendered value chain analysis.

	Functional and economic ("*standard*") analysis perspectives and elements	**Gender analysis perspectives and elements***
Value chain composition	• Value chain functions, actors and roles • High or low value of - product (e.g. cheap dried fish, high value live fish) - target markets (e.g. rural, peri-urban and urban markets) - actor task and role (e.g. managerial, manual labor) • Influence of formal structures on value chain composition: policy environment, rules, laws and regulation, taxations, standards, etc. • Constraints and opportunities related to the above	• Gender-disaggregated analysis of different value chain actors in identified functions and roles (based on typologies of actors and other aspects of social identity, specifically age, cast, religion, socioeconomic status, etc. • Gender division of labor (roles, tasks and positions) between different actors and between low- and high-value products, roles or target markets • Informal structures, especially social and gender norms that influence value chain composition and types of work by different actors • Constraints and opportunities related to the above
Value chain performance	• Volumes and prices of products • Financial returns/margins/profit and employment/wages • Competitiveness, efficiency and value addition • Required capacity, and material resources such as financial capital, infrastructure, assets, technology, labor, information/extension • Influence of formal structures on value chain performance • Constraints and opportunities related to the above	• Differences in access to and decision-making about required social and economic resources by different actors • Distribution of benefits (economic and social) between different actors • Trade-offs (e.g. workload, drudgery, poor working conditions) of current value chain composition and exploring who is most impacted by the trade-offs • Informal structures, especially social and gender norms that influence access and control over resources and benefits • Constraints and opportunities related to the above
Value chain governance	• Whole chain: presence of "lead firms" that are "driving" the process of organizing activities in the value chain • Node: *"Coordination"* of activities between value chain actors performing different functions, including vertical and horizontal coordination (e.g. cooperatives) • Influence of formal structures on value chain governance • Constraints and opportunities related to the above	• Distribution of decision-making and bargaining power in the whole value chain, at the community and intrahousehold levels for different women and men • Seats and/or percentages of women and men in leadership and authoritative positions in each node of the value chain • Informal structures, especially social and gender norms that influence power at different levels of the chain • Constraints and opportunities related to the above

	Functional and economic ("*standard*") analysis perspectives and elements	Gender analysis perspectives and elements*
Value chain upgrading	• Economic value chain upgrading activities already being implemented by (some) value chain actors (technical, logistical and managerial solutions) • Identification of economic and social resources needed for economic value chain upgrading • Opportunities to address all above identified constraints to improve economic performance of the chain • Other opportunities to move to higher value added activities, using more sophisticated or more efficient technologies and processes, and increasing knowledge and skills, with the ultimate goal to increase the benefits derived from value chain participation	• Social value chain upgrading activities (enhancing equity in the chain and improving quality of employment and well-being of workers) already being implemented by (some) value chain actors; entails emphasis on specific profiles of disadvantaged individuals (e.g. women, youths and across other intersectional aspects) • Identification of economic and social resources needed for social value chain upgrading for the identified target group • Opportunities to address all above identified constraints to improve social performance of the chain • Other opportunities to enhance equity in the chain, often prioritizing work toward women's empowerment, improving employment • (Potential) trade-offs of social and economic upgrading strategies (e.g. workload)

**All elements are affected by the interplay between different factors and dimensions of gender relations, even if not explicitly mentioned.*

Table 1. The elements of functional, economic and gendered value chain analysis.

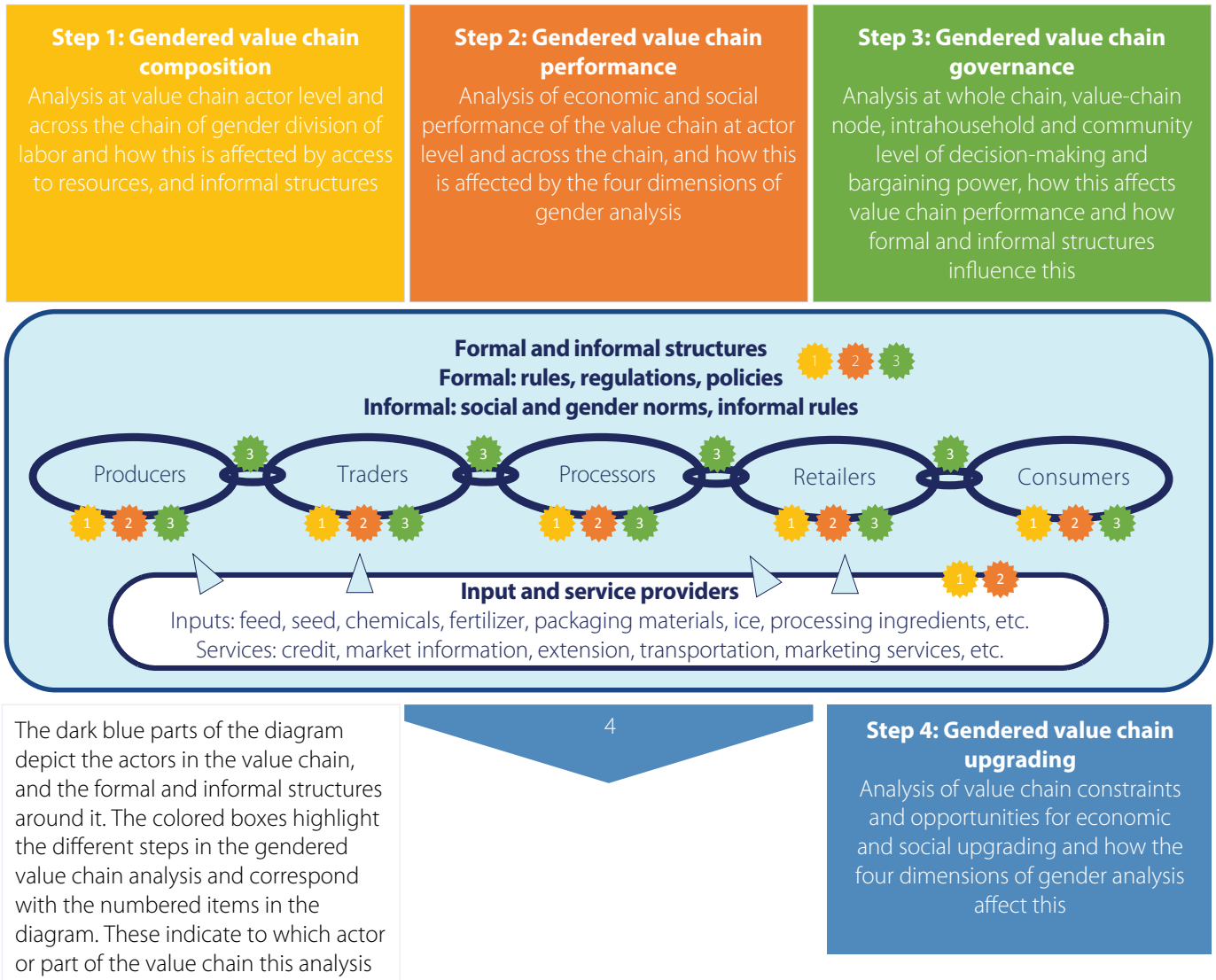


Figure 2. Steps and entry points to apply a gendered value chain analysis.

5. Gender outcomes of value chain upgrading

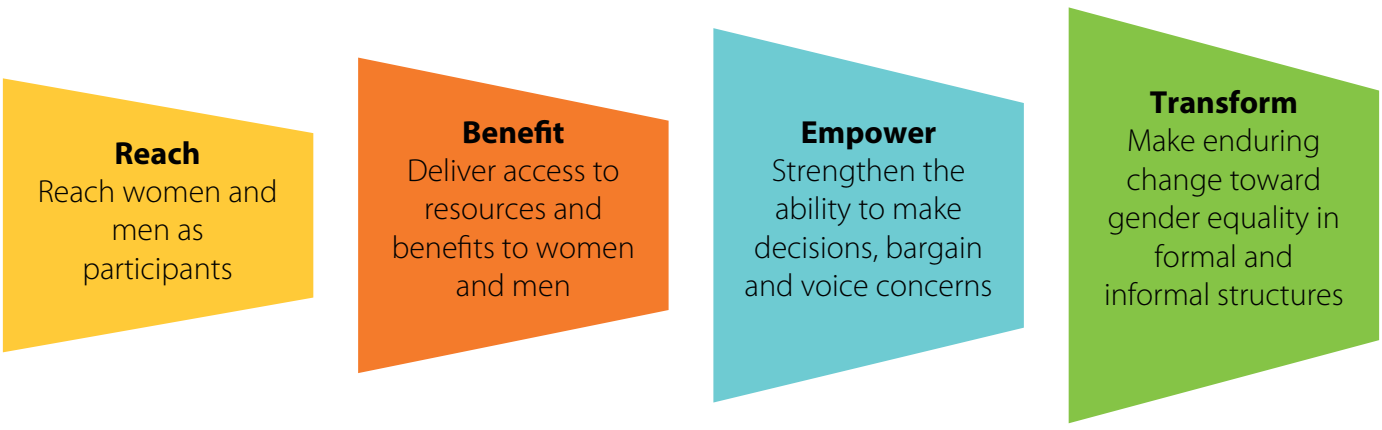
Value chain upgrading is often pursued with the ambition of reducing poverty and improving food and nutrition security and/or developing inclusive food systems. When a gendered value chain analysis is applied, it is often with the ambition of addressing gender equality, with a focus on tackling inequalities that have disproportionally impacted women negatively. As such, the emphasis is on informing the design of interventions aimed explicitly at benefitting different women. As explained in Section 3.1, however, gender analysis includes attention to power relations that affect *both* women and men. Moreover, an understanding of intersectionality notes that other facets of your social identity (i.e. age, ethnicity, class, education, belief systems, race, among others) interact *with* gender to also affect how you can benefit or not from value chain upgrading. As a result, a gender value chain analysis can *also* be used to inform the design of interventions aimed explicitly at benefitting other groups, such as youths or ethnic minorities.

The RBET framework[1] is useful to provide clarity about what level of outcomes are being targeted and for whom. Specifically, the framework is used to assess whether and how specific agricultural development interventions empower women (Quisumbing et al. 2019. A gender outcome thus refers to the specific gender results aimed for and can be experienced as a positive contribution to more equal gender power relations. Four types of outcomes are distinguished. The first three are related to changes for individuals, and the fourth to changes in society (systems or structures). Generally, each subsequent outcome will require more time to be achieved than the previous one:

- **Reach**: This is about involvement in project activities and in what capacity, value chain function or supporting role, such as producer, trader, retailer, processor, employee, input and service provider. For example, training and extension reaches smallholder women and men farmers, while nutrition education and cooking demonstrations involve women in their roles as mothers and food preparers. Counseling sessions at the household level involving both women and men reinforce that it is a joint household responsibility for better nutrition.

- **Benefit**: This concerns increased opportunities or abilities to use a resource and derive benefits from that resource. It can be about increased access to good quality inputs, services and finance, or to markets, as well as income, food and improved working conditions.

- **Empower**: This is about increased ability to act independently, make decisions, bargain, voice concerns, and have confidence in doing so and feel recognized by others. This can, for example, be seen in improved bargaining positions and improved worker voice.



Source: adapted from Kleiber et al. 2019; draws on Theis and Meinzen-Dick 2016, Johnson et al. 2017, Danielsen et al. 2018 and 2019; see also McDougall et al. 2021.

Figure 3. Gender outcomes.

- **Transform**: This refers to changes in the formal and informal structures, such as a shift in constraining norms, systems or policies. This goes beyond the individual into the context, wider society and the existing rules and regulations, and the informal norms and attitudes, such as improved property rights to own land for aquaculture and changed norms about women acting in the marketplace.

These outcomes can be further specified into subcategories of gender outcomes. These can inspire the design of monitoring, evaluation and learning frameworks, particularly to help specify which indicators to track (Table 2).

A review of 15 aquaculture projects that took place in Bangladesh between 1989 and 2016 showed that aquaculture development projects have gradually been moving along this continuum in the gender targets they set, moving from completely gender blind to empowerment targets (Kruijssen et al. 2016). The oldest projects that started to recognize gender, introduced quotas for women's participation in project activities (reach). More recent projects started recognizing women's roles in aquaculture and adopting family approaches to training, which enrolled both husband and wife together in farmer field schools (benefit). The latest projects addressed social and gender norms through awareness training and community theater and by giving explicit attention to gender-based constraints, access and control over resources, decision-making power and gender norms (empower). Project implementers also started recognizing the need for gender-balanced project teams and gender awareness raising among them (Kruijssen et al. 2016).

1. Reach	2. Benefit	3. Empower	4. Transform
1.1 Participation in value chain development activities by • value chain actors: aquaculture farmers, processors, traders, retailers (self-employed/ entrepreneurs) • value chain employees (in different positions and nodes) • value chain input and service providers • consumers	**ACCESSING RESOURCES:** **2.1 Increased access to knowledge and skills** • production practices, technical knowledge, fish health • product quality and processing practices • financial literacy and business skills • knowledge on nutrition and health **2.2 Increased group membership or social networks** **2.3 Increased access to productive resources** • production inputs (seed, feed, chemicals, fertilizer) • processing and marketing inputs (packaging, ice, ingredients) • credit **2.4 Increased adoption and use of new technology** • aquaculture technologies and equipment • improved fish and fish-based products • marketing innovations **REALIZING BENEFITS:** **2.5 More efficient/higher production of lower value products** **2.6 Higher value-added products** **2.7 Reduced drudgery** **2.8 Increased consumption of nutritious food** **2.9 Increased income/profit/wages** **2.10 Improved working conditions/decent employment**	**3.1 Increased bargaining power and decision-making control over resources and benefits** • intrahousehold and community • in value chain nodes • in the whole chain **3.2 Increased choice of options for economic and social value chain upgrading** **3.3 Increased voice and leadership** **3.4 Increased agency and collective action** **3.5 Enhanced status** • as knowledge holder • as (aquaculture) farmer • as entrepreneur • of care work **3.6 Increased confidence and self-efficacy**	**4.1 Supportive policies and legislation that reinforce equal recognition and rewards to all value chain actors** **4.2 Changes in social and gender norms and behavior** leading to the following: • more equitable gender division of labor at household level • more equitable representation in value chain functions/market roles • decreased restrictions on women's mobility (household, community, market) • greater freedoms for women **4.3 Increased male support for women's rights** • equal pay (market prices + wages) • property rights • rights of women workers

Source: adapted from Danielsen et al. 2018; see also McDougall et al. 2021.

Table 2. Subcategories for RBET gender outcomes of value chain upgrading.

6. Using the analytical framework

This section describes how to put this analytical framework into practice by providing a number of steps in the research and design process (Figure 4). This can be applied to a specific value chain project or a subcomponent of a larger project. For an example of how this was applied in practice, see Kruijssen et al. (2021). This section focuses only on value chain analysis, formulating of interventions, and monitoring and evaluation. For more in-depth guidance on gender integration in other parts of research for development projects, consult the FISH guidance note on gender and intersectionality in research for development (McDougall et al. 2021).

6.1. Planning and design

Ensure you have a team in place that is able to plan and conduct the gendered value chain analysis, interpret the data and design interventions, with all required capacities, including technical, value chain and gender and social inclusion. With this team, as well as value chain stakeholders, first start by establishing what gender outcomes the value chain interventions are targeting and for whom. Do they target the whole chain, specific parts of the chain or specific subgroups of actors, for example only homestead pond producers and not commercial producers? Applying a gender lens entails being specific about what will be done to address the gender inequities. These can be either gender accommodating or gender transformative. The former recognize but work around the gender barriers and inequalities. The latter foster critical examination of gender dynamics and underlying barriers and intentionally strengthen, co-create or jointly shift informal and formal structures (norms, systems, policies) to enable equality. Interventions should never be gender-blind, nor should the project result in being gender exploitative by reinforcing or using unequal gender dynamics to achieve project goals. (See also McDougall et al. 2021.) It is important to emphasize here that only gender-transformative approaches are able to overcome the underlying causes of gender

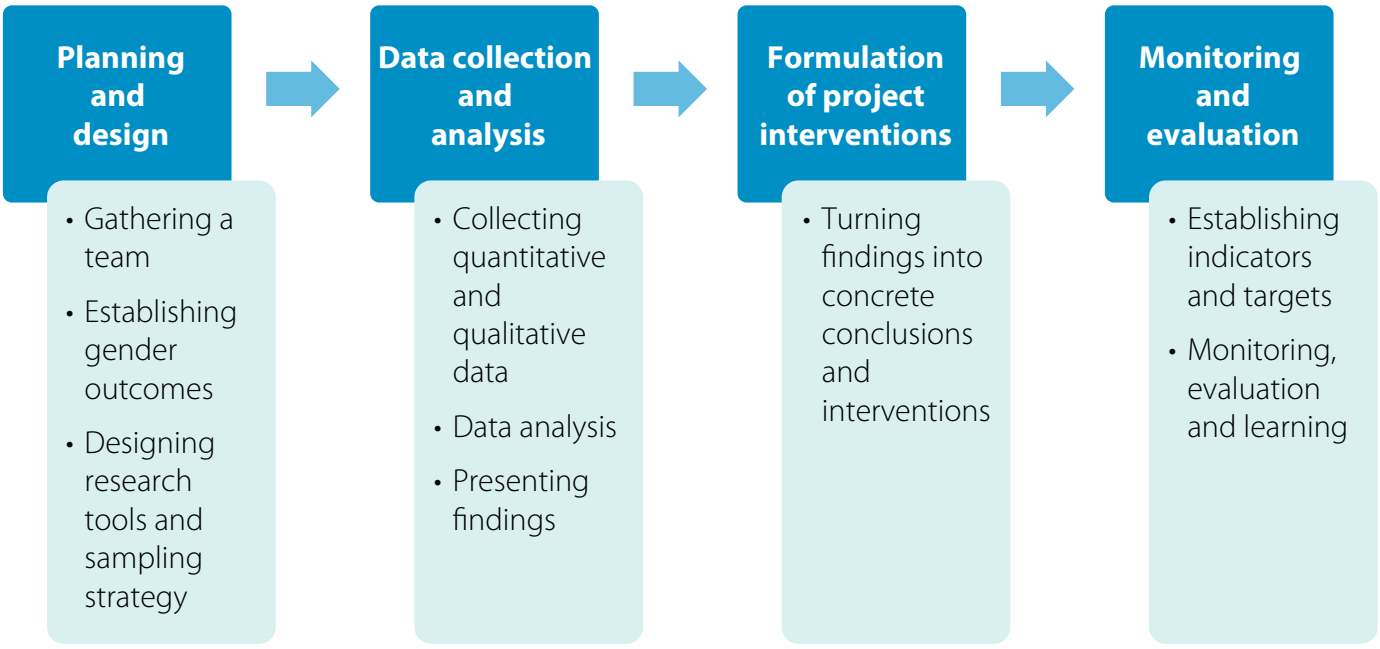


Figure 4. Stages in a gendered value chain analysis.

inequalities. Accommodative approaches that focus on superficial issues tend to have limited impact on closing gender gaps, and outcomes tend to be less likely to last.

With this in mind, revisit the project's theory of change through a gender lens. In doing so, unpack assumptions about what interventions will lead to and about the context in which they are taking place, and identify which types of gender outcomes are plausible via each pathway (reach, benefit, empower or transform). Table 2 provides a useful entry point to identify the priority gender outcomes for the project and to start developing a set of draft indicators to measure progress.

Once the gender outcomes are established, appropriate research tools and a sampling strategy can be developed. (Tools used to develop Kruijssen et al. (2021) are available upon request.) Note that the data collected for the analysis can also serve as a (partial) baseline and therefore allow for consideration of potential indicators for monitoring and evaluation in the design of your research tools. A gendered value chain analysis always requires a mixed methods approach for data collection. It is important to ensure that information is collected on all parts of the analytical framework. Annex 1 contains a list of possible resources that can be consulted to develop data collection tools.

6.2. Data collection and analysis

Once tools are developed, a data collection team can be recruited. Ensure that this team is gender-balanced and that enumerators are included from different social groups to allow for same-gender, social group or language pairings to collect different types of data from men and women respondents. The data collection team also needs to be sufficiently trained to build its understanding of the concepts and dimensions explained in this framework and the variety of data collection tools and methods. While collecting data, also ensure that this approach adjusts the timing and location of data collection so that it works around women's responsibilities, mobility, and their safety and comfort in certain spaces.

Data analysis and writeup requires a multidisciplinary team that is able to digest technical, economic, gender and intersectional data. Annex 2 provides a possible outline of a gendered value chain analysis report. It is useful to write this report in a collaborative manner in which people with different areas of expertise are responsible for writing different parts of the report. However, someone must be responsible to ensure there is integration of these components. Guiding questions for each of the gendered value chain dimensions are provided in Table 3.

Gendered value chain composition	**Gendered value chain performance**
How are unpaid and paid tasks and positions divided between different types of women and men value chain actors in different aquaculture production systems? How are these divided within different value chain functions, nodes and strands? Why and to what effect?	What are the economic and social value chain benefits? What factors influence the economic and social performance of the value chain? How are value chain benefits distributed between men, women and youths? Why and to what effect?
Gendered value chain governance	**Gendered value chain upgrading**
Who has the decision-making power? How does power operate at different levels (household, community, whole chain, by economy, formal and informal institutions)? At different nodes of the value chains? Why and to what effect for value chain performance and actor empowerment?	How do different value chain actors (men, women, youths) increase the benefits they derive from value chain participation through different economic and social upgrading strategies?

Table 3. Key analytical questions for analysis.

Common gendered barriers and challenges in aquaculture value chains may include but are not limited to the following:

- burdens of workload
- lack of financial literacy and business skills
- lack of technical skills and access to training and technical assistance
- lack of access to resources, assets, finance, information and services required for the value chain activities
- lack of access to markets because of limitations in mobility, a lack of social connections or an inability to provide the types of products the market demands
- hindering policies and formal institutions
- limiting social and gender norms
- lack of self-confidence to interact with other value chain actors and/or input and service providers
- lack of ability to speak up (voice) and make critical decisions (agency)
- workplaces not gender responsive.

6.3. Formulation of project interventions

Once the main barriers and opportunities have been identified, the next step in the process is to translate findings into concrete areas for intervention. Table 4 provides some ideas for possible intervention directions, including both accommodative and transformative approaches. While designing these interventions, ensure that you are clear on "who you are designing for." This requires keeping in mind the target or target group that you determined at the planning stage, as well as the intervention's level of gender responsiveness (accommodative versus transformative). At this stage, also revisit the project's theory of change to ensure that it is still sound and gender responsive. The resources in Annex 1 provide examples of projects where some of these interventions have been applied.

Intervention area	Possible direction for intervention
Capacity building of project staff	• Ensure project staff involved in analysis, design and implementation recognize and value women's multiple roles in the value chain and beyond. Ensure gender-balanced participation of women and men in project interventions. Train couples where appropriate. • Check for and address potential subtle biased or reinforcing language and practices by project staff. For example, examine language used by staff, such as "fish farmer and his wife" and directing attention only to men in households. • Check for and address potential subtle bias in project communications, especially in stereotypical images of men as fish farmers and women as cooks and caregivers. • Ensure the project's role-modeling of gender-balanced staff and leadership. • Ensure the project is investing in career-building opportunities for women.
Capacity building of project partners	• Contribute to policy and guidance on gender-balanced and inclusive extension by both the public and private sectors as well as NGOs. • Offer support to government regarding gender-inclusive statistics and gender capacity development.
Time and workload	• Where needed, accommodate women's workload and time burden by designing the timing and place of all project opportunities to work around them. • Ensure that drudgery is avoided and heavy workloads are not worsened (both in terms of productive and reproductive tasks). • Introduce labor-saving technologies or practices (in both domains) that free up women's time to engage in the value chain. • With women and men together (households, communities), address norms and attitudes regarding productive and reproductive roles and responsibilities of both women and men to enable redistribution of tasks and better recognition of women's paid and unpaid work.
Financial literacy and business skills	• Address basic levels of competency in literacy and numeracy, which improve women's (and men's) ability to access information and enhances their confidence to negotiate with other value chain actors. • Enhance entrepreneurial skills such as bookkeeping, accounting, business management and business planning. • Address norms around who is the "owner" of a business and who should be making business decisions.

Intervention area	Possible direction for intervention
Technical skills	• Strengthen women's technical skills for aquaculture production, processing and/or marketing. These include skills for existing or traditional roles and in new or non-traditional roles. Options include technical and vocational education and training, on-the-job training, coaching and mentoring.
Access to resources and services	• Develop private sector partnerships that explicitly recognize women, youths and lower-income farmers as clients. Co-develop business models that prioritize increasing access to seed, feed, market info and medicine for women and marginalized fish value chain actors. • Test accommodative strategies that build on existing networks and practices that women draw upon (e.g. information or inputs from neighbors, mobile traders, etc.). • Test transformative strategies that bring women into "mainstream" channels to access inputs and information (e.g. adapted local service provider model) by building the awareness and capacity of input and service providers. • Introduce improved technologies that reduce workload and/or improve quality, including aquaculture production and processing technology and communication technology. • Work with moneylenders, microfinance institutions and banks on product segmentation suitable for different types of entrepreneurs. Raise gender awareness and capacity in such institutions. • Address norms and attitudes around decision-making and control over assets and resources through gender-transformative strategies (see addressing social and gender norms).
Access to markets	• Improve physical access to markets such as through building market structures, storage and processing facilities nearby or improving access to transportation. • Find new ways of marketing, such as through social media. • Address attitudes and norms on women's mobility and activity in the marketplace through gender-transformative approaches.
Enabling policies and formal institutions	• Share insights about barriers to women's equitable land and pond access and ownership with government and civil society partners. • Support policy processes that aim to reduce barriers, such as inheritance practices. • Engage with public, private and civil actors regarding ways around household barriers to access to ponds. For example, pilot community ponds or tanks operated by women's groups. • Support government to ensure women's rights are respected and enforced.
Addressing social and gender norms	• Investigate asset transfers or other means of securing women's assets to increase more equitable decision-making, combined with gender-transformative approaches, to ensure it does not rebound. • Incorporate gender-transformative strategies (Annex 3) to reduce normative barriers within households, at communities and within markets (e.g. as part of other training). • Build on recognition and positive deviators. Work with gender champions to inspire and influence others. For example, with their permission, amplify the visibility of women in the sector who already operate in nontraditional roles. Develop strategies to use the space created by women who are exceptions. • Work with male champions to identify entry points and strategies. These can be influential men like community, religious or cooperative leaders and elders who can act as change agents.
Building self-confidence	• Build self-confidence and self-efficacy by building skills, creating or enhancing collective action, addressing norms and enhancing voice.
Voice and agency	• Contribute to the collective and individual agency of women to navigate sector barriers. For example, integrate with or establish women farmer or business groups, or ensure women can become recognized members and leaders of mixed-groups.
Gender-responsive workplace	• Support employers (e.g. processing plants or large farms) to ensure decent working conditions are in place and include the following: - childcare facilities, pregnancy leave, parental leave - safe and healthy working conditions, and protective clothing - separate changerooms and toilet facilities for women and men - anti-harassment policies and their enforcement - opportunities to monitor and address compliance with labor rights (e.g. through employees' committees or unions) - nondiscrimination policies, equal pay, equal opportunity for promotion.

Source: adapted from Kruijssen et al. 2021 and the European Commission 2021.

Table 4. Possible directions for gender-equitable value chain interventions with a focus on women.

6.4. Monitoring and evaluation

Once the interventions have been determined, the draft gender outcome indicators can be revisited and finalized, drawing on the RBET outcome typology. This needs to feature a plan to monitor unintended consequences and critical areas for rebound. These include gender-based violence, appropriation of activities, assets and benefits and other consequences, all of which need to become part of the monitoring, evaluation and learning cycle of your project. Box 3 provides a number of points of attention for planning, monitoring and evaluation.

Box 3. What to look out for during planning, designing, monitoring and evaluation

- Ensure that gender and intersectionality is considered from start to finish of the project, and is not added as an afterthought.
- Make sure that the number and percentages of women and men reached, benefitted, empowered, transformed, in leadership positions, etc., are documented and well tracked.
- Keep in mind that addressing gender is not about working with women but about addressing unequal gender relations with both women and men.
- Remember that women are not a homogenous group and other aspects of social identity are also of key importance to determine outcomes of value chain participation.
- Check that the project does not use gender-stereotypes in internal and external communication and/or introduces gender-reinforcing interventions.
- Check internal project dynamics and practices for such pitfalls, and ensure that all staff (not just those involved with the social dimensions of the project) are aware of and responsible for gender integration.
- Ensure that the appropriate capacity is available for gendered value chain analysis and design of interventions.
- Monitor and address unintended consequences of your interventions that add to women's workload, such as gender-based violence and appropriation of technologies or business by other household members. This means actively looking beyond planned outcomes. Also see Annex 3 for some resources that could be used to help facilitate gender-transformative change and address issues of gender-based violence.

See also: McDougall et al. 2021.

7. Conclusion

To ensure aquaculture value chain development is gender equitable, a thorough understanding is required of gendered barriers and constraints and their root causes. This document presented an analytical framework to support the design of value chain studies that (i) provide a disaggregated understanding of the functional, economic and social dimensions of the value chain, (ii) identify the underlying formal and informal structures that determine this and (iii) identify opportunities for gendered value chain upgrading. The results of studies that can be generated using this framework can in turn be used to formulate gender equitable interventions that ensure that both women and men, as well as other social groups, can equitably enjoy the value chain's benefits.

We have provided four key concepts of gender analysis: (1) gender division of labor, (2) access to resources and distribution of benefits, (3) decision-making and control over activities, resources, income and food, and (4) formal and informal structures, including social and gender norms. Subsequently, we have suggested how these concepts can be applied to obtain a description of gendered value chain composition, create an understanding of gendered value chain performance and gendered value chain governance, and develop options for gendered value chain upgrading. We have also suggested the RBET framework of gender outcomes, which can guide the development of specific gender outcomes for gendered value chain interventions. Finally, we have provided four practical steps to implement a gendered value chain study, including some ideas for possible project interventions.

A woman selling fish with little equipment (an old weight balance, an umbrella and some ice over the fish) on a sunny day in Abu-Hammad market, Sharkia, Egypt.

Notes

[1] These four dimensions build on core gender and development analytical concepts used in mainstream gender analysis across CGIAR. The definitions in this Guidance Note draw heavily on the work of Mukhopadhyay (2017), building on Mukhopadhyay et al. (2013) as part of the Guide to Concepts for Gender Training: CIMMYT Gender Capacity Strengthening Program – Achieving Gender Integration at CIMMYT implemented with KIT Royal Tropical Institute, Amsterdam. They have been used in further iterations with other CGIAR partners, including WorldFish and the International Livestock Research Institute (ILRI). Examples include Eerdewijk and Danielsen (2015) and Danielsen and Newton (2017).

References

Baltenweck I, Poole EJ, Galiè A, Ouma E, Marshall K and Kruijssen F. 2019. Livestock and fish value chain assessment toolkit, version 2. Nairobi, Kenya: ILRI.

Béné C, Arthur R, Norbury H, Allison EH, Beveridge M, Bush SR, Campling L, Leschen W, Little D, Squires D et al. 2016. Contribution of fisheries and aquaculture to food security and poverty reduction: Assessing the current evidence. *World Development* 79:177–96.

Bolwig S, Ponte S, Du Toit A, Riisgaard L and Halberg N. 2010. Integrating poverty and environmental concerns into value-chain analysis: A conceptual framework. *Development Policy Review* 28(2)173–94.

[FISH] CGIAR Research Program on Fish Agri-Food Systems. 2017. CGIAR Research Program on Fish Agri-Food Systems (FISH): Gender Strategy. Penang, Malaysia: CGIAR Research Program on Fish Agri-Food Systems. Strategy: FISH-2017-13. https://digitalarchive.worldfishcenter.org/bitstream/handle/20.500.12348/1349/FISH-2017-13.pdf

Danielsen K, Wong F, McLachlin D and Sarapura S. 2018. Typologies of change: Gender integration in agriculture and food security research. Amsterdam: KIT.

European Commission. 2021. Closing the gender gap through agri-food value chain development (VCD). Brussels; Published by Directorate General International Cooperation and Development – EuropeAid, Directorate Sustainable Growth and Development. Accessed November 15, 2021. https://ec.europa.eu/international-partnerships/system/files/closing-the-gender-gap-through-vcd-brief-20190412_en.pdf

Farhall K and Rickards L. 2021. The "gender agenda" in agriculture for development and its (lack of) alignment with feminist scholarship. *Frontiers in Sustainable Food Systems* 5:1–15.

[FAO] Food and Agriculture Organization. 2020. The state of world fisheries and aquaculture 2020. Sustainability in action. Rome: FAO. doi: 10.4060/ca9229en

Gibbon P, Bair J and Ponte S. 2008. Governing global value chains: An introduction. *Economy and Society* 37(3):315–38. doi: 10.1080/03085140802172656

[IGWG] Interagency Gender Working Group. 2017. The gender integration continuum training session user's guide. Washington, DC: IGWG. https://www.igwg.org/wp-content/uploads/2017/12/17-418-GenderContTraining-2017-12-12-1633_FINAL.pdf

Johnson NL, Balagamwala M, Pinkstaff C, Theis S, Meinzen-Dick RS and Quisumbing AR. 2017. How do agricultural development projects aim to empower women? Insights from an analysis of project strategies. Discussion Paper 1609. Washington, DC: IFPRI. http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/131074

Kabeer N. 1994. Reversed realities: Gender hierarchies in development thought. London: Verso.

Kabeer N and Subrahmanian R. 1996. Institutions, relations and outcomes: Framework and tools for gender-aware planning. IDS Discussion Paper 357. Brighton, UK: Institute of Development Studies.

Kaminski AM, Genschick S, Kefi AS and Kruijssen F. 2018. Commercialization and upgrading in the aquaculture value chain in Zambia. *Aquaculture* 493:355–64.

Kaminski AM, Kruijssen F, Cole SM, Beveridge MC, Dawson C, Mohan CV, Suri S, Karim M, Chen OL, Phillips MJ et al. 2020. A review of inclusive business models and their application in aquaculture development. *Reviews in Aquaculture* 12:1881–1902. doi: 10.1111/raq.12415

Kaplinsky R and Morris M. 2000. A handbook for value chain research. Ottawa, Canada: IDRC. https://www.ids.ac.uk/ids/global/pdfs/VchNov01.pdf

Kleiber D, Cohen P, Gomese C and McDougall C. 2019. Gender-integrated research for development in Pacific coastal fisheries. Penang, Malaysia: FISH. Program Brief: FISH-2019-02 https://digitalarchive.worldfishcenter.org/bitstream/handle/20.500.12348/2826/FISH-2019-02.pdf

Kruijssen F, Rajaratnam S, Choudhury A, McDougall C and Dalsgaard JPT. 2016. Gender in the farmed fish value chain of Bangladesh: A review of the evidence and development approaches. Penang, Malaysia: WorldFish. Program Brief: 2016-38.

Kruijssen F, McDougall CL and van Asseldonk IJ. 2018. Gender and aquaculture value chains: A review of key issues and implications for research. *Aquaculture* 493:328–37.

Kruijssen F, Adam R, Choudhury A, Danielsen K, McDougall C, Newton J, Smits E and Shelley CC. 2021. A gendered aquaculture value chain analysis in northwestern Bangladesh. Penang, Malaysia: WorldFish. Program Report: 2021-02.

Laven A, Pyburn R and Mundy P. 2012. Challenging chains to change: Gender equity in agricultural value chain development. Amsterdam: KIT Publishers.

Lim G. 2016. Value chain upgrading: Evidence from the Singaporean aquaculture industry. *Marine Policy* 63:191–97.

March C, Smyth I and Mukhopadhay M. 1999. A guide to gender-analysis frameworks. Oxford: Oxfam GB.

McDougall C, Newton J, Kruijssen F and Reggers A. 2021. Gender integration and intersectionality in food systems research for development: A Guidance Note. Penang, Malaysia: CGIAR Research Program on Fish Agri-Food Systems. Manual: FISH-2021-26.

Ndanga LZB, Quagrainie KK and Dennis JH. 2013. Economically feasible options for increased women participation in Kenyan aquaculture value chain. *Aquaculture* 414(15):183–90. doi: 10.1016/j.aquaculture.2013.08.012

Ponte S and Ewert J. 2009. Which way is "up" in upgrading? Trajectories of change in the value chain for South African wine. *World Development* 37(10):1637–50.

Ponte S and Sturgeon T. 2014. Explaining governance in global value chains: A modular theory building effort. *Review of International Political Economy* 21(1):195–223. doi: 10.1080/09692290.2013.809596

Theis S and Meinzen-Dick R. 2016. Reach, benefit or empower: Clarifying gender strategies of development projects. Washington, DC: IFPRI. Accessed December 19, 2018. https://www.ifpri.org/blog/reach-benefit-or-empower-clarifying-gender-strategies-development-projects

van Eerdewijk A, Wong F, Vaast C, Newton J, Tyszler M and Pennington A. 2017. White paper: A conceptual model of women and girls' empowerment. Amsterdam: KIT.

List of figures

List of tables

Annex 1. Resources and examples

Value chain toolkits

- [VCA4D] Value Chain Analysis for Development. 2021. Methodlogical brief for agri-based value chain analysis. Frame and tools – key features. Value chain analysis for development (VCA4D) methodology. Brussels: Agrinatura. https://europa.eu/capacity4dev/value-chain-analysis-for-development-vca4d-/documents/vca4d-methodological-brief-eng-v2
- Baltenweck I, Poole EJ, Galiè A, Ouma E, Marshall K and Kruijssen F. 2019. Livestock and fish value chain assessment toolkit, version 2. Nairobi, Kenya: ILRI. https://cgspace.cgiar.org/bitstream/handle/10568/105608/LF_VC_AssessmentToolkit_V2.pdf?sequence=1&isAllowed=y
- Lundy M, Amrein A, Hurtado JJ, Becx G, Zamierowski N, Rodriguez F and Mosquera EE. 2014. LINK methodology: A participatory guide to business models that link smallholders to markets. Version 2.0. Cali, Colombia: International Center for Tropical Agriculture. https://cgspace.cgiar.org/handle/10568/49606
- Springfield Centre. 2015. The operational guide for the making markets work for the poor (M4P) approach, 2nd edition. Bern, Switzerland: SDC; London: DFID. https://beamexchange.org/uploads/filer_public/6f/94/6f9444bf-da88-45b3-88d7-5118a7479517/m4pguide_full_compressed.pdf

Gender and value chain toolkits

- Agri-ProFocus. n.d. Gender in value chains: Practical toolkit to integrate a gender perspective in agricultural value chain development. Utrecht, Netherlands: Agri-ProFocus. https://agriprofocus.com/upload/ToolkitENGender_in_Value_ChainsJan2014compressed1415203230.pdf
- Mayoux L and Mackie G. 2008. A practical guide to mainstreaming gender analysis in value chain development. International Labour Office. Addis Ababa, Ethiopia: ILO. https://www.ilo.org/empent/Publications/WCMS_106538/lang--en/index.htm
- Royal Tropical Institute, Agri-ProFocus and International Institute of Rural Reconstruction. 2012. Challenging chains to change: Gender equity in agricultural value chain development. Amsterdam: KIT Publishers, Royal Tropical Institute. https://www.kit.nl/wp-content/uploads/2018/08/2008_chachacha.pdf
- [SDC] Swiss Development Cooperaton. n.d. A manual in two parts for practitioners: Gender-oriented entrepreneurship promotion strategies and tools along the project cycle. Bern, Switzerland: SDC. https://genderandenvironment.org/wp-content/uploads/dropbox/Publication/Gender-oriented%20Entrepreneurship%20Promotion.pdf
- [SNV] Netherlands Development Organisation. 2010. Gender mainstreaming in value chain development: Practical guidelines and tools. The Hague, Netherlands: SNV. https://www.fao.org/sustainable-food-value-chains/library/details/en/c/265721/
- [USAID] United States Agency for International Development. n.d. Promoting gender equitable opportunities in agricultural value chains: A handbook. Washington, DC: USAID. https://pdf.usaid.gov/pdf_docs/pnaeb644.pdf

Aquaculture value chain and gender studies/project examples

- Bosma RH, Nguyen TD, Calumpang LM and Carandang SA. 2019. Gender action plans in the aquaculture value chain: What's missing? *Reviews in Aquaculture* 11(4):1297–307.
- Farnworth CR, Sultana N, Kantor P, Choudhury A and Golam F. 2015. Gender integration in aquaculture research and technology adoption processes: Lessons learned in Bangladesh. Penang, Malaysia: WorldFish. Working Paper: 2015–17. http://pubs.iclarm.net/resource_centre/2015-17.pdf
- Gopal N, Hapke HM, Kusakabe K, Rajaratnam S and Williams MJ. 2020. Expanding the horizons for women in fisheries and aquaculture. *Gender, Technology and Development* 24(1):1–9. doi: 10.1080/09718524.2020.1736353
- Kantor P, Morgan M and Choudhury A. 2015. Amplifying outcomes by addressing inequality: The role of gender-transformative approaches in agricultural research for development. *Gender, Technology and Development* 19(3):292–319. doi: 10.1177/0971852415596863
- Kruijssen F, Golam, F, Bråten Y and Minneboo E. 2019. Assessment of the local service provider model in Bangladesh. Penang, Malaysia: CGIAR Research Program on Fish Agri-Food Systems. Working Paper: FISH-2019-10. https://www.worldfishcenter.org/content/assessment-local-service-provider-model-bangladesh
- Kruijssen F, Rappoldt A, Ragasa C and Newton J. 2020. Inclusive business models for access to quality fish seed and technical assistance: Insights from Ghana. IFPRI Discussion Paper 1948. Washington, DC: IFPRI. doi: 10.2499/p15738coll2.133804
- Kruijssen F, Adam R, Choudhury A, Danielsen K, McDougall C, Newton J, Smits E and Shelley CC. 2021. A gendered aquaculture value chain analysis in northwestern Bangladesh. Penang, Malaysia: WorldFish. Program Report: 2021-02. https://hdl.handle.net/20.500.12348/4584
- Kuijpers R, Rappoldt A, Petrutiu S, Vos A, Kruijssen F, Verschoor R and Maitland A. 2021. Value chain approaches for social change. KIT Working Paper 2021:01. Amsterdam: KIT Royal Tropical Institute. https://www.kit.nl/publication/value-chain-approaches-for-social-change/
- Morgan M, Choudhury A, Braun M, Beare D, Benedict J and Kantor P. 2015. Enhancing the gender-equitable potential of aquaculture technologies. Penang, Malaysia: CGIAR Research Program on Aquatic Agricultural Systems. Program Brief: AAS-2015-07. http://pubs.iclarm.net/resource_centre/AAS-2015-07.pdf
- Murphy S, Arora D, Kruijssen F, McDougall C and Kantor P. 2020. Gender-based market constraints to informal fish retailing: Evidence from analysis of variance and linear regression. *PLOS ONE* 15(3):e0229286. doi: 10.1371/journal.pone.0229286
- Sari I, McDougall C, Rajaratnam S and Park CMY. 2017. Women's empowerment in aquaculture: Two case studies from Indonesia. Rome: FAO; Penang, Malaysia: WorldFish. https://hdl.handle.net/20.500.12348/271

Annex 2. Possible outline of a gendered value chain analysis report

1. Executive summary
2. Introduction
3. Methodology
   - 3.1 Conceptual framework
   - 3.2 Study objectives and questions
   - 3.3 Sampling framework and data collection methods
   - 3.4 Data analysis
4. Gendered value chain composition
   - 4.1 Volumes
   - 4.2 Value chain map
   - 4.3 Products
   - 4.4 Seasonality
   - 4.5 Typology of actors
   - 4.6 Gender norms and their effects on value chain composition
5. Gendered social and economic performance of the value chain
   - 5.1 Use of fish
   - 5.2 Productivity
   - 5.3 Profitability and distribution of benefits between nodes and within households
   - 5.4 Employment
6. Gendered value chain governance
   - 6.1 Intrahousehold and community level:
     - Decision-making and control of key resources at intrahousehold level
     - Intrahousehold distribution of benefits
     - Supportive and hindering actors and structures in household and community
   - 6.2 Value-chain nodes
   - 6.3 "Whole chain"
7. Gendered value chain upgrading
   - 7.1 Upgrading within function
   - 7.2 Upgrading to new value chain functions
8. Summary of key barriers and opportunities
   - 8.1 Key issues in the value chain composition
   - 8.2 Key issues in social and economic performance
   - 8.3 Key issues in governance and power dynamics
   - 8.4 Key opportunities in value chain upgrading
9. Recommendations for interventions
   - 9.1 Economic performance
   - 9.2 Social and gender performance

Notes

References

Annexes

Annex 3. Resources to facilitate gender-transformative change

- Oxfam Novib. 2014. Gender Action and Learning system: Practical guide for transforming gender and unequal power relations in value chains. The Hague, the Netherlands: Oxfam Novib. https://www.oxfamnovib.nl/Redactie/Downloads/English/publications/150115_Practical%20guide%20GALS%20summary%20Phase%201-2%20lr.pdf
- The ACQUIRE Project/EngenderHealth and Promundo. 2008. Engaging boys and men in gender transformation: The group education manual. New York: The ACQUIRE Project; Rio de Janeiro: Promundo. https://promundoglobal.org/wp-content/uploads/2014/12/Engaging-Men-and-Boys-in-Gender-Transformation-The-Group-Education-Manual.pdf
- Helen Keller International. n.d. Nurturing connections: Adapted for homestead and food production and nutrition. Dhaka. Bangladesh: Helen Keller International. https://www.hki.org/wp-content/uploads/2019/10/TOPS_Nurturing-Connections_English_FINAL_P.pdf
- Ministry of Women Affairs and UN Development Program. 2007. Gender awareness and development manual: Resource material for gender trainers. Kabul. Afghanistan: UNDP. https://focusintl.com/GD027-%20Gender%20Awareness%20and%20Development%20Manual%20-%20UNDP.pdf
- Promundo-US and the CGIAR Research Program on Aquatic Agricultural Systems. 2016. Promoting gender-transformative change with men and boys: A manual to spark critical reflection on harmful gender norms with men and boys in aquatic agricultural systems. Washington, DC: Promundo-US; Penang, Malaysia: CGIAR Research Program on Aquatic Agricultural Systems. http://pubs.iclarm.net/resource_centre/Promundo-AAS-Promoting-gender-transformative-change.pdf
- UNESCO. 2004. Gender sensitivity: A training manual for sensitizing education managers, curriculum and material developers and media. Paris: UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000137604_eng
- Oxfam. 2021. Transforming gender inequalities: Practical guidance for achieving gender transformation in resilient development. Oxford: Oxfam. https://oxfamilibrary.openrepository.com/bitstream/handle/10546/621183/gd-transforming-gender-inequalities-160421-en.pdf?sequence=1
- ActionAid, Institute of Development Studies and Oxfam. 2015. Redistributing care work for gender equality and justice – A training curriculum. ActionAid. https://oxfamilibrary.openrepository.com/bitstream/handle/10546/583239/ml-redistributing-care-work-150715-en.pdf.pdf?sequence=1
- Oxfam. 2014. Women's economic leadership in Latin America and the Caribbean. Book 1: A guide to key concepts. Oxford: Oxfam. https://policy-practice.oxfam.org/resources/womens-economic-leadership-in-lac-book-1-a-guide-to-key-concepts-339039/
- Oxfam. 2014. Women's economic leadership in Latin America and the Caribbean. Book 2: A guide to implementation. Oxford: Oxfam. https://policy-practice.oxfam.org/resources/womens-economic-leadership-in-lac-book-2-a-guide-to-implementation-339040/
- Oxfam. 2014. Women's economic leadership in Latin America and the Caribbean. Book 3: Prevention of violence against women in the context of programmes. Oxford: Oxfam. https://policy-practice.oxfam.org/resources/womens-economic-leadership-in-lac-book-3-prevention-of-violence-against-women-i-344039/
- Davies I, Parvez Butt A, Kidder T and Cislaghi B. 2021 Social Norms Diagnostic Tool. Young Women's Economic Justice. Oxford: Oxfam. https://policy-practice.oxfam.org/resources/social-norms-diagnostic-tool-young-womens-economic-justice-621338/

CGIAR

RESEARCH PROGRAM ON Fish

Led by WorldFish

About FISH

The CGIAR Research Program on Fish Agri-Food Systems (FISH) is a multidisciplinary research program. Designed in collaboration with research partners, beneficiaries and stakeholders, FISH develops and implements research innovations that optimize the individual and joint contributions of aquaculture and small-scale fisheries to reducing poverty, improving food and nutrition security and sustaining the underlying natural resources and ecosystems services upon which both depend. The program is led by WorldFish, a member of the CGIAR Consortium. CGIAR is a global research partnership for a food secure future.

For more information, please visit fish.cgiar.org