



CGIAR Research Program on Fish Agri-Food Systems (FISH): Gender Strategy

Led by



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Photo credits: Front cover

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Executive summary

As embodied by Sustainable Development Goal (SDG) 5, gender equality and women's empowerment are globally recognized priority development goals. The CGIAR's alignment with these goals is embodied in its commitment to closing the gender gap and the indication that CGIAR goals contribute 'strongly' to SDG 5 (CGIAR 2015, 35). The CGIAR Research Program (CRP) on Fish Agri-Food Systems (FISH) similarly embodies these goals and commitment, as outlined in this Gender Strategy.

Given the significance of gender to development outcomes, FISH and other CRPs must contribute to equality and women's empowerment as an integrated part of their agendas. To do so effectively, CRPs need accurate knowledge and the ability to address both visible markers of inequality (such as in participation) as well as formal and informal underlying barriers (such as policy and gender norms and relations). This requires CRP research to go beyond identifying gender gaps and barriers. It requires CRPs to elucidate how these multiple aspects of gender interact with and shape innovation, production and food, nutrition, poverty and environmental outcomes. Furthermore, CRPs need to identify reliable strategies, models and tools to overcome these barriers in context-appropriate ways.

In response to this need, FISH gender analysis and research are embedded within and integrated throughout both FISH flagships (Sustainable Aquaculture and Sustaining Small-Scale Fisheries). Specifically, gender integration and strategic gender research are central to the FISH theory of change and to FISH's goal of achieving sustainable increases in the production and equitable distribution of nutritious fish to improve the livelihoods, nutrition and food security of poor households and the individuals within these households.

To address identified high-priority gaps and needs, within this FISH framework, gender research will focus on three impact pathways: gender-inclusive and gender-responsive innovation in technologies and practices in fish agri-food systems; innovation for inclusive livelihoods and wealth generation; and innovation for inclusive governance and agri-food systems. Crosscutting and within these, the research will include a thematic focus on access to and control over assets, decision-making and gender norms.

To be effectively focused and have long-lasting impact at scale, this gender research will be undertaken through strategic collaborations among research, government, civil society and development agencies and other actors and—most importantly—with poor rural women and men themselves. FISH will address both formal and informal gender barriers within these innovations and interventions. Such interventions range from gender-responsive aquaculture technologies and innovation processes to women-targeted opportunities embedded in aquaculture extension, fisheries governance, fish value chain investments and development, nutrition programming and research, and partner capacity development programming.

Finally, in terms of approach, FISH has developed three principles to guide design: all research involving people will be gender accommodative; gender-transformative approaches should form an integral part of FISH activities in both flagships; and an intersectional perspective will increasingly be part of FISH gender analysis. The emphasis on gender-transformative approaches builds on the strengths in this area of the previous WorldFish-led CRP Aquatic Agricultural Systems. In doing so, it signals gender as an ambitious and innovative theme of research within FISH, including that the CRP is investigating strategies to effectively engage men as agents of gender-transformative change.

Justification and rationale

As embodied by Sustainable Development Goal (SDG) 5,¹ gender equality and women's empowerment are globally recognized priority development goals. The CGIAR's alignment with these global goals is embodied in its commitment to closing the gender gap and the specific indication that CGIAR goals contribute 'strongly' to SDG 5 (CGIAR 2015, 35). In fact, the CGIAR will contribute to SDG 5 through all three of its system level outcomes (CGIAR 2015).² The CGIAR Research Program (CRP) on Fish Agri-Food Systems (FISH) similarly embodies these goals and commitment, as outlined in this Gender Strategy.

In addition to their intrinsic value, gender equality and women's empowerment are critical levers for achieving agriculture and rural development outcomes. Specifically, in terms of food and nutrition security, poverty reduction and environmental sustainability, these gender–development connections include that:

- Women gaining equal access to land, technology, financial services, education and markets in rural areas could lead to increases in agricultural production that could reduce the number of hungry people in the world by 100–150 million (FAO 2011).
- Women's involvement in small-scale aquaculture production has been observed to help increase productivity (Jahan et al. 2010; Shirajee et al. 2010), and offers opportunities to increase fish consumption within the household through women's increased access to nutrient-rich fish (Jahan et al. 2010).
- Women's empowerment is recognized as a pathway to nutrition outcomes, including that there is a positive association between women's empowerment and child and maternal health (Malapit et al. 2015).
- Women have been documented to focus their spending on food, education and other family well-being investments (World Bank 2008; Heck et al. 2007), whereas men tend to focus more on their personal spending (Cole et al. 2015). Enhancements to women's control over production and income can thus be potent levers to strengthen food security and family well-being.
- Reducing gender gaps in entrepreneurship and employment in fish value chains equates to greater income for women and their families. This dovetails with findings that 'gender equality is a key contributor to growing and strengthening national,

- regional and global economies' (IFC 2017, 3).
- Equitable engagement of women as well as men in natural resource governance has been shown to enhance environmental outcomes (Agarwal 2009; McDougall 2015).

While progress is being made towards closing global gender gaps, significant disparities and barriers persist (World Economic Forum 2016). In rural low-income country contexts, including those reliant on fish agri-food systems, these gender challenges range from imbalances in work burdens, to women's unequal access to and control over assets and resources including extension, to the 'sticky floor' of women's disproportionate involvement in low-return employment and less profitable nodes of value chains as well as gender imbalances in decision-making and distributional equity in governance over fisheries resources (see Box 1).

Given the significance of gender to development outcomes, for CRPs to achieve the CGIAR's intermediate level outcomes and system level outcomes, FISH and other CRPs must contribute to equality, equity and women's empowerment as an integrated part of their agendas. To do so effectively, CRPs need accurate knowledge and the ability to address both visible markers of inequality (such as in participation) as well as formal and informal underlying barriers (such as policy and gender norms and relations). This requires CRP research to go beyond identifying gender gaps and barriers. It requires CRPs to effectively elucidate how these multiple aspects of gender interact with and shape innovation and production as well as food, nutrition, poverty and environmental outcomes. Furthermore, CRPs need to identify reliable strategies, models and tools to overcome these barriers in context-appropriate ways in order to enable inclusion, empowerment, equity and equality in and through their research.

In response to this need, gender analysis and research are embedded within and integrated throughout FISH and both its flagships. Specifically, as outlined in the FISH Proposal³ and this FISH Gender Strategy, gender integration and strategic gender research are central to the FISH theory of change (TOC) and to achieving FISH's objectives regarding food and nutrition security, poverty reduction and environmental sustainability. FISH will thus embody rigorously designed gender analysis and strategic research—with an emphasis

on gender-transformative approaches (see [Gender approaches and research types](#)). Specifically, this will comprise:

- Gender integration in aquaculture and small-scale fisheries research:
 - The CRP aims for all FISH aquaculture and small-scale fisheries research involving people to integrate (mainstream) a gender lens throughout the research cycle. This will enable research that is gender- and socially inclusive; responds to both women's and men's needs; and proactively avoids negative consequences for women (such as increasing women's work burdens) and other marginalized groups.
- Strategic gender research (i.e. studies in which the subject is gender, see [Types of gender research](#)):
 - In some areas of FISH, basic or foundational strategic gender research is needed to identify or add depth to the understanding of gender roles, relations, norms and attitudes, and key issues, barriers, opportunities or outcomes.
 - In other areas, more advanced strategic gender research is needed to identify and test innovative ways to overcome gender barriers and to catalyze, facilitate or enable equity, equality and empowerment. This includes developing strategies and understanding of factors that enable transformation of constraining gender norms, such as those that limit women's mobility and control over their own time. The strategies to be tested include those that seek to effectively engage men in improving women's conditions and supporting women's empowerment, and helping to create more enabling environments for equality, equity and empowerment.

Box 1. Gender disparities and inequalities in low-income country contexts and fish agri-food systems

Domestic and care work burdens continue to be gender-imbalanced, with recent [UN data](#) (Sustainable Development Knowledge Platform 2017) suggesting that women still bear more than threefold the burdens of men in these areas.

- Lack of access to and control over key assets such as land or ponds and financial resources including credit—as well as constraining gender norms and power relations—limit women's equal engagement in, control over and benefits from aquaculture production (Farnworth 2015; Morgan et al. 2015; FAO 2017a; FAO 2017b).
- Training and extension opportunities that are essential to innovation continue to be more accessible to men than women (FAO 2017a; FAO 2017b; Aregu et al. 2018).
- Women's needs are not necessarily factored into technology design on a par with men's. In Bangladesh, for example, the relatively poor fit of small fish-harvesting technologies with women's needs was identified as an obstacle to women's involvement in homestead fish farming (Morgan et al. 2015).
- Women are disproportionately represented in less profitable nodes of fish value chains (Rajaratnam et al. 2015). Factors underlying this include women's limited access to capital or credit (Shelly and D'Costa 2001; Veliu et al. 2009; Luomba 2013; Ndanga et al. 2013), women's limited aquaculture skills, land (Mudenda 2009; Veliu 2009; Simataa and Musuka 2013), mobility restrictions (Morgan et al. 2016), time and labor burdens doing unpaid work (Kantor and Kruijssen 2014, Shirajee et al. 2010) and, more generally, stereotypes and norms (FAO 2017a, 2017b), and socialization towards income generation in less profitable activities (Weeratunge et al. 2012).
- Women have lower engagement in entrepreneurial opportunities than men and more frequently discontinue entrepreneurial ventures (Weeratunge et al. 2012), for reasons similar to those market barriers outlined above.
- Decision-making in small-scale fisheries governance tends to be gender-imbalanced, with men dominating resource decision-making and with men's priorities more strongly reflected in management strategies (Schwarz et al. 2014; Cohen and Steenbergen 2015; Cole et al. 2015; Rajaratnam et al. 2015; Cole et al. 2018).
- Similarly, there are substantial gender inequities in access to and control over natural resources, including land and many aquatic resources (Weeratunge et al. 2012; Burnley and Ziegenhagen 2014; Kwashimbisa and Puskur 2014; Cole et al. 2015; Rajaratnam et al. 2015).
- Constraining gender norms, attitudes and power relations underpin the above imbalances, shaping women's relatively low agency in determining their time spent on and involvement in activities inside and outside their homes (Cole et al. 2015; Rajaratnam et al. 2015; FAO 2017a; FAO 2017b; Aregu et al. forthcoming).

Objectives

The goal of FISH is to achieve sustainable increases in the production and equitable distribution of nutritious fish to improve the livelihoods, nutrition and food security of poor households and the individuals within these households (WorldFish 2016). To achieve this, the program will pursue multi-, inter- and transdisciplinary research to address the identified needs of poor producers and consumers of fish, and those women and men whose livelihoods depend upon aquaculture and small-scale fisheries.

As outlined in the [Justification and rationale](#), it is central to the success of FISH that research effectively identifies and addresses the gender dimensions of barriers, opportunities and mechanisms of change in the program's TOC and within each flagship's pathway (see [Theory of change and impact pathways](#)).

To enable this success, the FISH Gender Strategy will guide, ensure and embody innovative research within the flagships, generating reliable and scalable solutions to overcome gender barriers, and enable equality, equity and women's empowerment in aquaculture and small-scale fisheries. In doing so, FISH recognizes the synergy underscored by the CGIAR Gender Network (2016): closing the gender gap is good for women *and* for agriculture. Specifically, the Gender Strategy engages with these synergies in fish agri-food systems. It will both: (i) enhance gender equality and women's empowerment as inherently important development outcomes in and of themselves, through the potent opportunities of aquaculture and small-scale fisheries; and ii) draw on FISH's ability to enhance gender equality, equity and women's empowerment as a means of leveraging FISH's nutrition, food security, poverty and environmental outcomes. This is summarized in Figure 1.

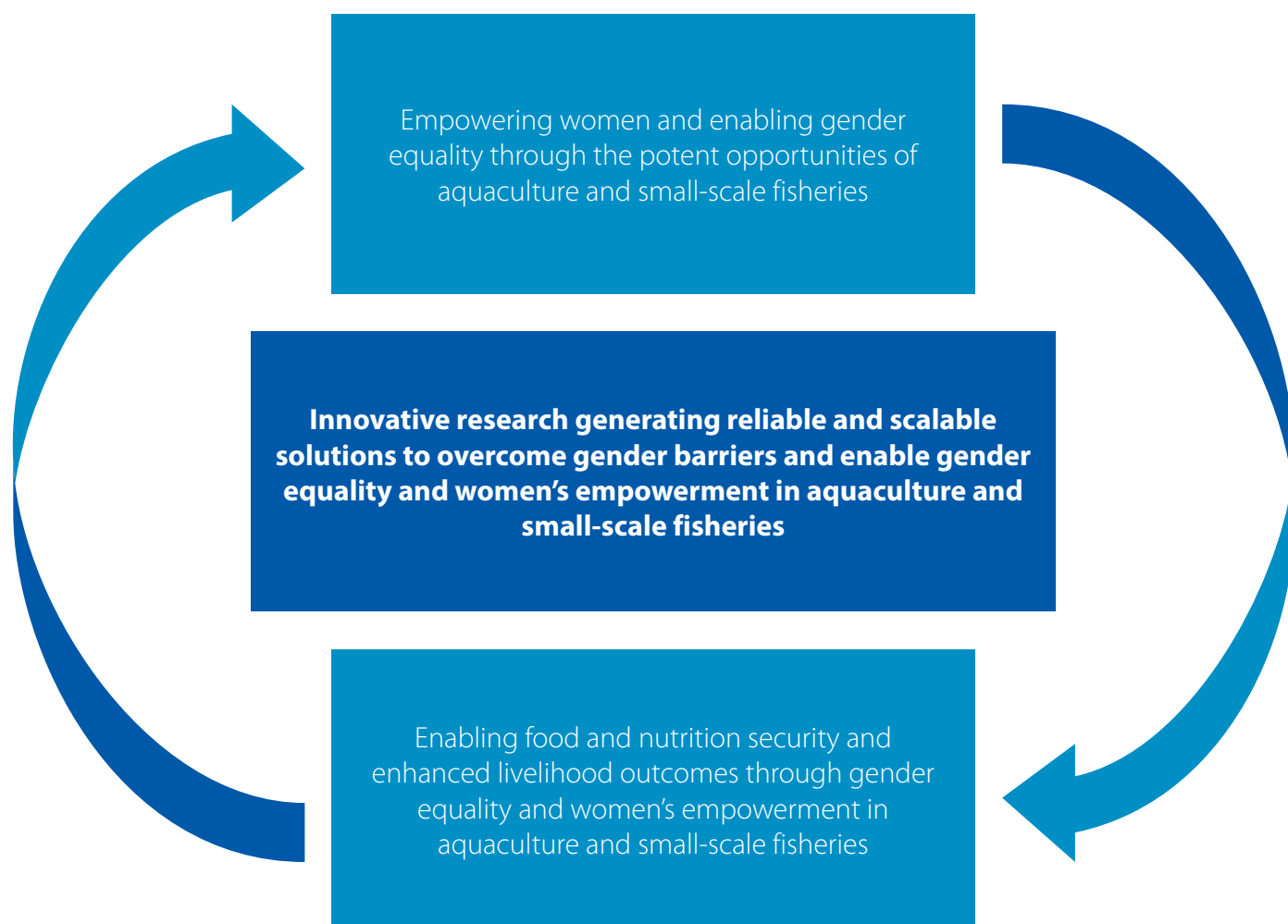


Figure 1. Gender research in FISH: Synergies in aims.

Theory of change (TOC) and impact pathways

Combining research with capacity development and scaling through targeted partnerships, FISH will contribute to greater equity, equality and women's empowerment in critical innovation and development processes in aquaculture and small-scale fisheries. This will enable lasting shifts towards reducing poverty, increasing food and nutrition security, and safeguarding fish resources with and for women, men, girls and boys in target countries.

Gender research within the FISH TOC

The TOC regarding gender in FISH is embedded within the larger FISH TOC and impact pathways. As outlined above, gender research in FISH will seek to identify and overcome key gendered barriers along the FISH impact pathways that limit women's access to and control over key assets and resources, effective engagement in decision-making, and equitable and substantive wealth generation and livelihood benefits from fish value chains. This involves engaging with underlying factors, in particular constraining norms, including through engaging men (as well as women) in research and change processes. This is further elaborated in [Research themes and questions](#).

The overarching theory regarding how gender-related change will occur within the FISH TOC is grounded in this premise: to successfully address the identified barriers and leverage the identified opportunities, there is a need to close gender knowledge gaps and, more fundamentally, for evidence-based, gender-inclusive and gender-focused innovations, interventions and policies. These will rely on rigorously tested strategies, models and policy recommendations, underpinned by reliable and innovative intersectional gender analysis methods and tools.

To be effectively focused and to have impact at scale, this research must be undertaken through strategic collaborations among research, government, civil society and development agencies, and other actors—and most importantly, with women and men themselves. Within these innovations and interventions, informed by multiple disciplines and perspectives, both formal and informal barriers need to be addressed to effect lasting change. Such interventions range from gender-responsive aquaculture technologies and innovation processes, to women-targeted opportunities and gender-transformative strategies embedded in aquaculture extension, fisheries governance, fish

value chain investments and development, nutrition programming and research, and partner capacity development programming.

We hypothesize that together this will lead to increases in women's empowerment as well as a more level gender 'playing field' in aquaculture and fisheries and associated food systems. The latter includes more positive gender attitudes and actions of men as part of a more enabling and equitable gender environment. This, in turn, will contribute to greater gender equality in access to, control over and benefits from aquaculture and fisheries assets and resources; effective participation of women in fisheries resource management and governance; and more successful and lucrative engagement in fish value chains, including in arenas in which women were previously marginalized. Recalling the gender–development outcome linkages presented in the [Justification and rationale](#), these outcomes will be significant in their improvement of women's income and livelihood opportunities. Moreover, they will leverage FISH's ability to achieve the CRP's outcomes of enhanced benefits from ecosystems, enhanced fish production and equitable distribution, leading to reduced poverty and enhanced food and nutrition security for women, men and children (Figure 1).

As elaborated above, both FISH flagships aim to effectively and appropriately integrate gender in their technical research as well as undertake key strategic gender research. The flagships will do so through empirical quantitative, qualitative and mixed-methods studies—including cross-sectional and longitudinal (pre- and post-) designs, and various forms of action or participatory action research—backed by literature reviews. The findings from this gender-focused research will be synthesized into technical, organizational and policy recommendations, and will be scaled through proactive strategic partnerships and capacity development activities, as outlined below.

Expected outcomes

FISH has six outcome targets by 2022 (Box 2). These relate to the CGIAR system level outcomes (SLOs) of reduced poverty, improved food and nutrition security for health, and improved natural resources and ecosystem services. Flagship 1 (Sustainable Aquaculture) and Flagship 2 (Sustaining Small-Scale Fisheries) contribute to the following intermediate development outcomes (IDOs): *Increased incomes*

and employment; Increased productivity; Improved human and animal health through better agricultural practices; Improved diets for poor and vulnerable people; More sustainably managed agro-ecosystems; Enhanced benefits from ecosystem goods and services; and the three crosscutting outcome areas of climate change, gender and youth, and policies and institutions. As underscored above, increasing gender equality, equity and women's empowerment in fish agri-food systems is central to achieving key FISH program targets in poverty reduction, nutrition and food security, and sustainability. As such, FISH specifies contributions to two gender-related sub-DOs under the DO Inclusion and equity achieved: *Gender-equitable control of productive assets and resources (XC 2.1.1)*; and *Improved capacity of women and young people to participate in decision-making (XC 2.1.3)*.

Additionally, through its technology and practice-related research and gender-transformative approaches (see [Gender approaches and research types](#)), the program will contribute to the sub-DO *Technologies that reduce women's labor and energy expenditure*.

Research increases the evidence base and strategies for, transparency of, and accountability and responsiveness to progress towards regional, national and institutional commitments made to gender. As such, it contributes to more informed decision-making and stimulates the strengthening of practices and policies. Along these lines, through collaborative development, dissemination and discussion of research findings and evidence, FISH will contribute to the following interconnected gender-related research outcomes:

- Government, private and development organizations' interventions, programs and investments in aquaculture and small-scale

fisheries technologies, systems and technical and governance models are informed by gender knowledge and prioritize gender-responsive, gender-inclusive or gender-transformative strategies, and protect and expand women's safe and just engagement and outcomes, including empowerment, livelihoods and nutrition.

- Public and private aquaculture and fisheries extension actors increasingly incorporate and apply gender-responsive innovations, promote inclusive models and strategies, and apply capacity development strategies that better meet women's and men's needs, preferences and capacities, and that address gender barriers and leverage opportunities for equitable engagement and benefits, including relating to access to and control over assets.
- Government, private sector and development organizations' engagement and investments in value chains (upstream and downstream) and markets, including livelihoods development, are more informed by current gender information and evidence, and increasingly prioritize strategies that protect and expand women's safe and just engagement, enabling them to build assets and generate more substantial financial returns.
- Small-scale fisheries and aquaculture policies and related processes are informed by gender knowledge and address gender barriers, and protect and expand women's equitable engagement, assets and benefits in fish value chains.
- Fish agri-food system actors, including women and men farmers, extension agents and market actors, demonstrate fewer gender biases, in particular in relation to women accessing and using fish production or processing systems and technologies, fisheries and aquaculture decision-making and leadership, and women in higher return roles in fish value chains.

Box 2. FISH outcome targets by 2022

- **5 million** producer households adopted improved breeds, aquafeeds, fish health and aquaculture and fisheries management practices.
- **3.5 million** people, of which at least 50% are women, assisted to exit poverty through livelihood improvements related to fisheries and aquaculture value chains.
- **2.4 million** people, of which 50% are women, without deficiencies of one or more of the following essential micronutrients: iron, zinc, iodine, vitamin A, folate and B12.
- **4.7 million** more women of reproductive age consuming an adequate number of food groups.
- **20% reduction** in greenhouse gas emissions, 10% increase in water- and nutrient-use efficiency in 4.8 million metric tons of annual farmed fish production.
- **3.3 million** hectares of ecosystem restored through more productive and equitable management of small-scale fisheries resources and restoration of degraded aquaculture ponds.

Taken as a whole, FISH gender analysis and research can be understood as contributing to the FISH IDOs and targets through three main impact pathways, as presented below. These pathways will rely on mechanisms for achieving impact at scale, as outlined in [Mechanisms for achieving impact at scale](#).

Impact pathways relating to gender integration and research in FISH

Gender integration and strategic research in FISH will lead to the research outcomes identified above, and to the Flagship 1 and 2 development outcomes and SLOs, by progressing along three overall pathways:

- gender-inclusive and responsive innovation in technologies and practices in fish agri-food systems;⁴
- innovation for inclusive livelihoods and wealth generation;
- innovation for inclusive governance and agri-food systems.

Note that inclusive is used in these pathway titles as a 'shorthand' term. As described, FISH aims to be gender-inclusive, empowering and transformative (leading to gender equality) as well as socially equitable. In relation to these, the primary group for consideration is poor women; other forms of marginalization are considered in an integrated way (see [Gender approaches and research types](#)). Similarly,

innovation is used in the pathway titles as shorthand to signal both innovation (the development of ideas, approaches, models, strategies, tools, technologies or processes that are both novel and better meet needs and/or perform better) and also the more foundational research of critical assessment of current situations, outcomes or policies and needs, barriers, opportunities and so forth. The latter often forms the essential basis for the development of innovations. These three pathways are presented in simple form in Figures 2a, b, and c respectively.

The figures unpack the impact pathways, by highlighting FISH gender-related outputs and associated research outcomes, and showing their connection to the relevant FISH development outcomes along the relevant pathways. As above, these pathways derive from and are fully embedded within the two FISH flagships. Within these pathways, research outputs (tools and methods, new knowledge, strategies and models) will achieve impact at scale via mechanisms of closing gender data gaps, capacity development, and strategic partnerships and collaboration (see [Mechanisms for achieving gender impact at scale](#)). These pathways will evolve and be refined over the course of the research program through the M&E for learning outlined in [Monitoring and evaluation](#).

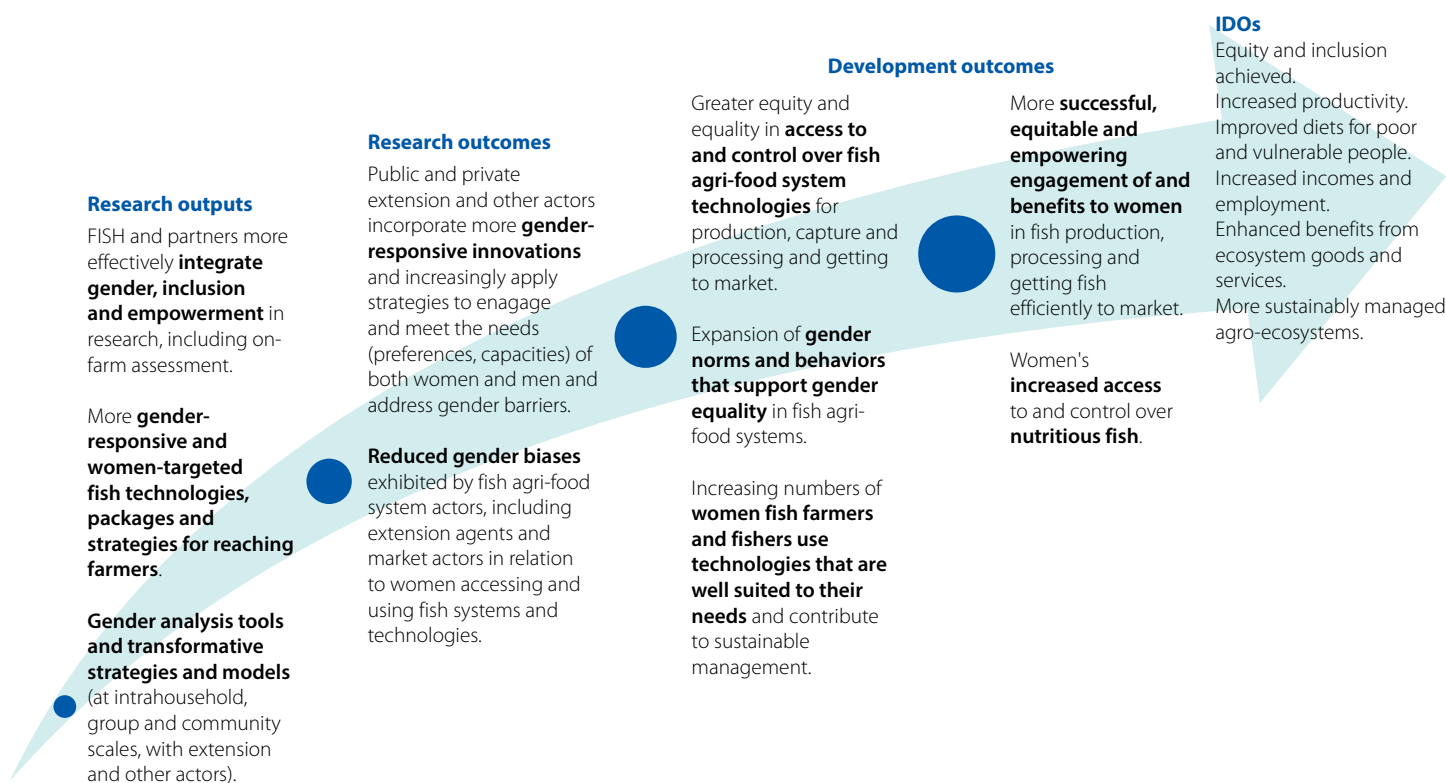


Figure 2a. Gender impact pathway 1: Gender-inclusive and responsive innovation in technologies and practices in fish agri-food systems. This includes assessment of and innovations in fish production and input supplies, capture, processing, or storage and transportation technologies and/or practices, and gender-inclusive and responsive extension systems to support farmers in accessing these.

Mechanisms for achieving gender impact at scale

Gender-inclusive local engagement and collaboration will lay the foundation for context-specific impacts. Going beyond that to gender-related impact at scale will involve three main interconnected avenues, as outlined below. Cutting across and feeding into each

of these will be the generation of both **context-specific insights** and **cross-case and cross-context generalizable learning**. These will be produced in the form of a combination of high-quality journal articles and audience-tailored products as well as methods, strategies, models, guidelines and recommendations.

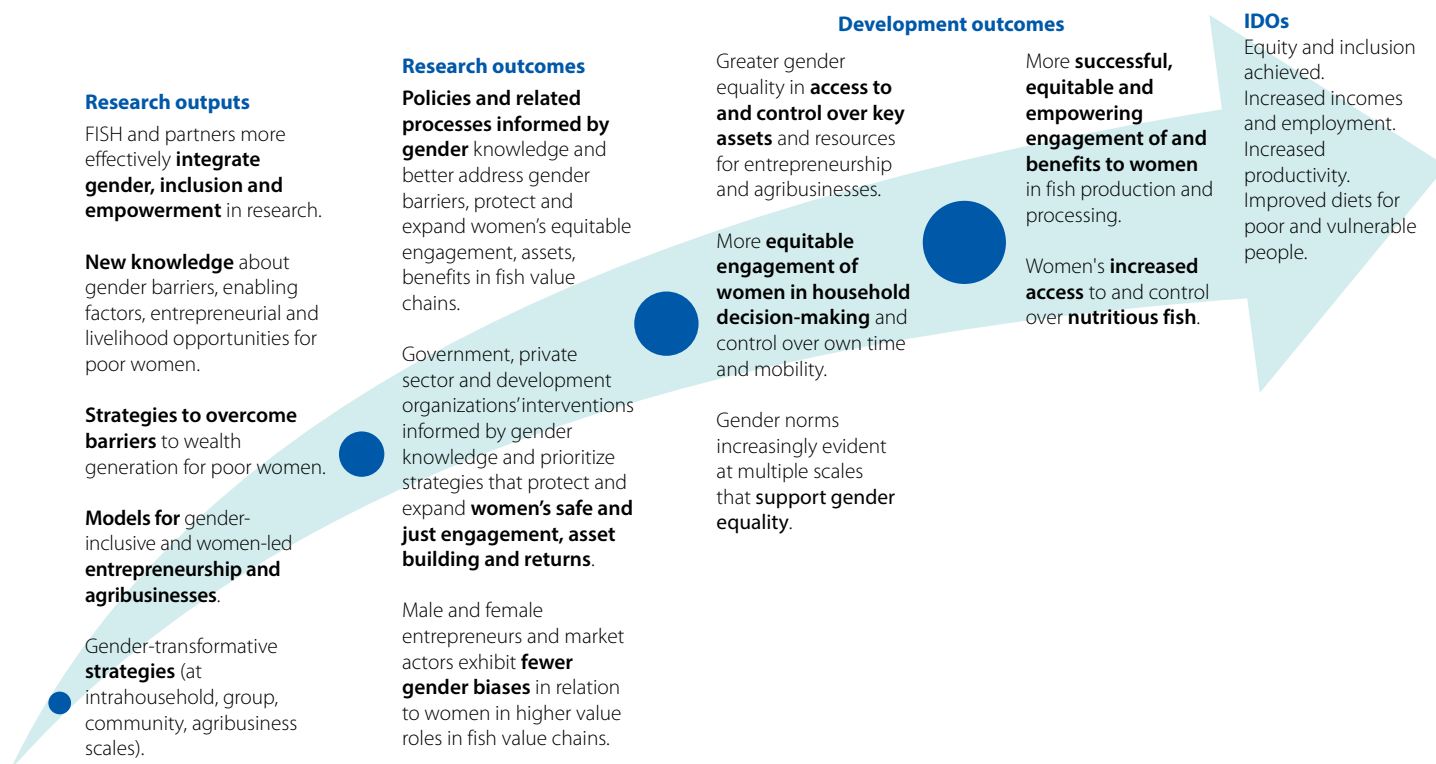


Figure 2b. Gender impact pathway 2: Innovation for inclusive livelihoods and wealth generation.

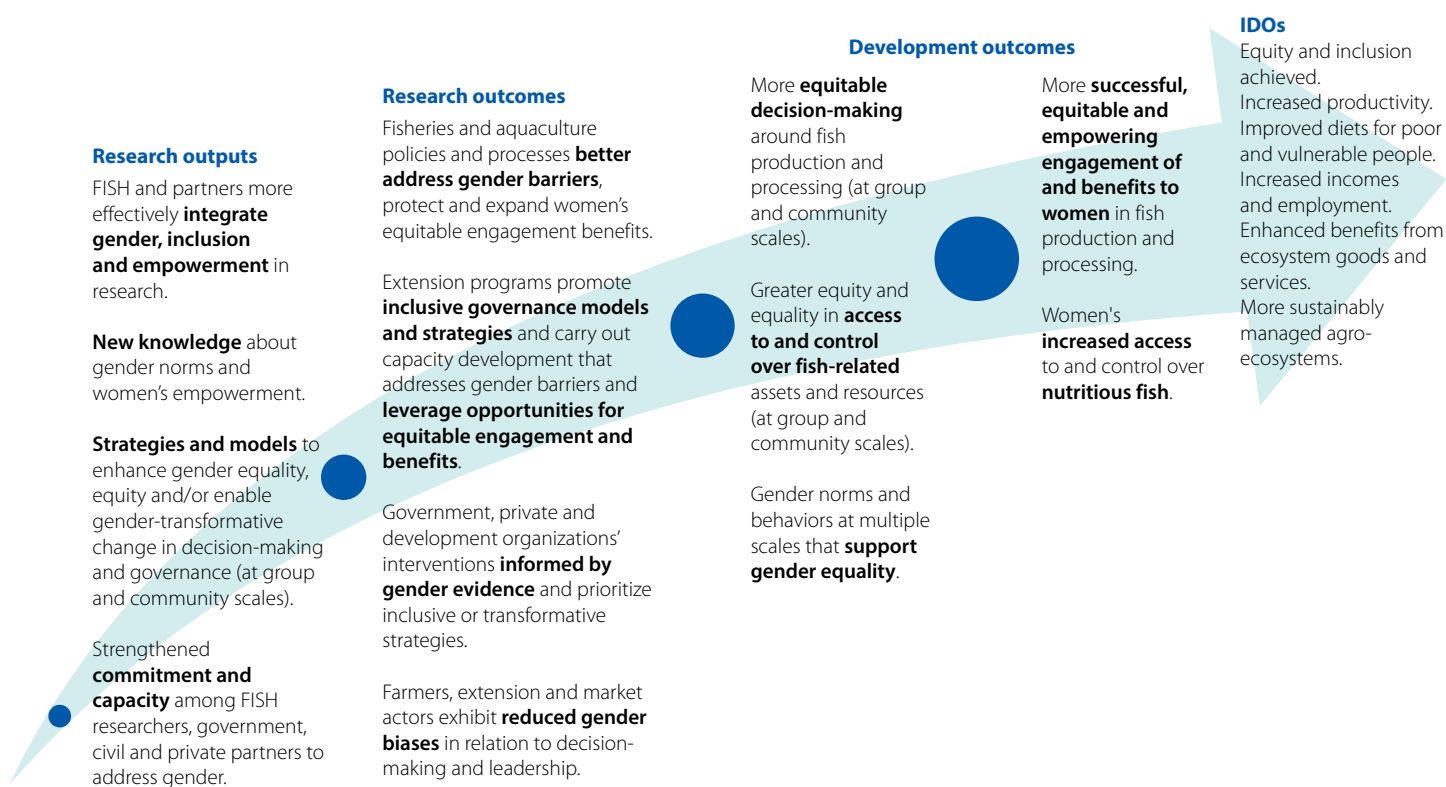


Figure 2c. Gender impact pathway 3: Innovation for inclusive governance and agri-food systems.

First, FISH will contribute to gender impact at scale by **reducing global gender data gaps**.⁵ This involves two integrated facets: building **rigorous gender-integrated and sex-disaggregated evidence** in aquaculture and fisheries to address the identified significant gaps in data and knowledge; and, in association with this, the **use of, and contributions to, reliable and innovative shared gender methods and frameworks**. Specifically, in terms of the latter, FISH envisions gender research that applies shared methods and frameworks across flagships and CRPs can effectively contribute to impact at scale by closing global gender data gaps in a systematic way.

FISH will contribute to this addressing of gaps through the following mechanisms: the use of shared questions and methods across flagships and sites, including those to assess gender norms and measure women's empowerment; contributions to, and use of shared methods from, the cross-CRP global comparative research initiative GENNOVATE; and the adaptation and application of the globally recognized quantitative Women's Empowerment in Agriculture Index (WEAI) methodology to the Women's Empowerment in Fisheries Index (WEFI; see Cole et al. 2018). Moreover, it will add momentum to the closing of data gaps in aquaculture and fisheries by increasing gender awareness and knowledge. This will be through contributions of gender-integrated and strategic research, both via publications and national, regional and international fora.

Second, FISH will achieve its intended impacts at scale through **gender capacity development for researchers and partners**. FISH will focus on two aspects of capacity development. As a foundation, it will build researchers' and research and development partners' awareness and understanding of the effects of gender equality—and inequality—and women's empowerment on the identified FISH pathways. In particular, it will build understanding of the ways in which gender-equitable resource access, control over assets and participation in decision-making can constructively influence productivity, income, diets and sustainable management of natural resources, and thus poverty reduction, nutrition and food security, and natural resource outcomes. Further, it will build the capacities of these actors to undertake gender analysis and research that can be effectively integrated into policy and development interventions at a range of scales. This will include skills for gender analysis and research using qualitative, quantitative and mixed methods and interdisciplinary approaches as well as the application of relevant frameworks and tools, such as the adaptation of the WEAI for FISH.

Capacity development will build in-house expertise and expertise within strategic partnerships (see below), and will comprise both ongoing mentoring and the organization of and participation in capacity development workshops and training.

The final avenue is **strategic partnerships and collaboration**. These connections form an essential foundation for impact at scale through their central contributions to gender research relevance, quality, and wider use and application of the scalable findings and outputs. These will build on a strong track record of gender partnerships in the previous CRPs led by or in which WorldFish was a managing partner: Aquatic Agricultural Systems (AAS) and Livestock and Fish (L&F) respectively. Research partnerships, such as with the University of East Anglia (UEA), help to infuse diversity of perspectives and quality as well as extend the networks for uptake of science products. In turn, this influences the science—and specifically research for development—community to be more gender integrated. Capacity development partnerships contribute to impact at scale by supporting quality of process and science across contexts. In this arena, the international research and development organization Promundo, for example, is a global frontrunner in engaging men and boys—along with women and girls—in gender awareness, thus enabling gender-transformative change. Institutions such as KIT Royal Tropical Institute bring expertise that can support gender analysis through coaching research teams, including in relation to aquaculture value chains.

Other partnerships will be focused on involvement by potential users of the research (scaling partners)—ranging from international bodies (such as FAO), to relevant government agencies (such as ministries and departments relating to fisheries and to gender and women), to international networks (such as the Gender in Aquaculture and Fisheries Network) or regional networks, to nongovernmental organizations operating at various scales (such as Helen Keller international). Particular attention will be paid to understanding gender-related risks and opportunities presented by private sector partnerships, such as feed companies or other agribusinesses. Implementing research partners, such as the private sector-oriented group BoP Innovation, will be engaged in collaborative planning for and undertaking of research as well as in supporting scaling, such as in critical dialogues and/or ongoing sharing of learning at the district, national, regional and international scales. Throughout the above, FISH will also proactively respond to emerging partner needs for specific policy and program inputs around gender.

Research themes and questions

Analysis underlying the FISH Proposal (WorldFish 2016) identified key gender barriers and opportunities in aquaculture and small-scale fisheries that need to be addressed (see Annex 3.4 of the [FISH Proposal](#)). These are presented in Box 3.

These barriers and opportunities formed the basis of the **three impact pathways** identified above (Gender-responsive and inclusive innovation in technologies and practices in fish agri-food systems; Innovation for inclusive livelihoods and wealth generation; and Innovation for inclusive governance and agri-food systems). They also signaled three priority **crosscutting themes** for investigation within and across these pathways: access to and control over

assets and resources; decision-making; and gender norms and attitudes. These are represented in Figure 3 together with the pathways.

Gender research in FISH addresses these themes and pathways through strategic research questions that are fully integrated within flagship research. These questions will (adaptively) guide the research and enable cross-context and cross-flagship synthesis of lessons. These will evolve with the Flagship 1 and Flagship 2 research as the flagships evolve over the course of the CRP through the M&E for learning mechanisms outlined in [Monitoring and evaluation](#). These questions in their early stage are presented in Annex 1.



Figure 3. FISH impact pathways and crosscutting research themes.

Box 3. Key barriers and opportunities for increasing gender-equitable engagement in and benefits from aquaculture and small-scale fisheries

- Constraining and enabling factors to enhance **women's access to and control over productive assets and resources**, such as knowledge, technologies, ponds, seed and inputs, fishing areas, gear and credit.
- Factors in and strategies and models to enhance **gender-equitable participation in household and community decision-making about and governance of** aquaculture and small-scale fisheries. These include decisions about production, livelihoods strategies, income, food distribution and choices about women's own time, mobility and labor.
- Strategies to constructively address constraining **formal and informal gender rules and norms**, including the effective engagement of men and boys together with women and girls in gender-transformative opportunities in extension, enterprise development, or aquaculture or small-scale fisheries programs.
- **Fit of aquaculture technologies with women's needs and preferences as well as men's**, including technologies that can reduce women's time and labor burdens.
- Barriers to and opportunities for **women's successful wealth generation**, including through entrepreneurship in fish value chains. Such as, for example, women-led enterprise development in fish-based products.

Source: [FISH Proposal \(WorldFish 2016\)](#)

Gender approaches and research types

Approaches and guiding principles

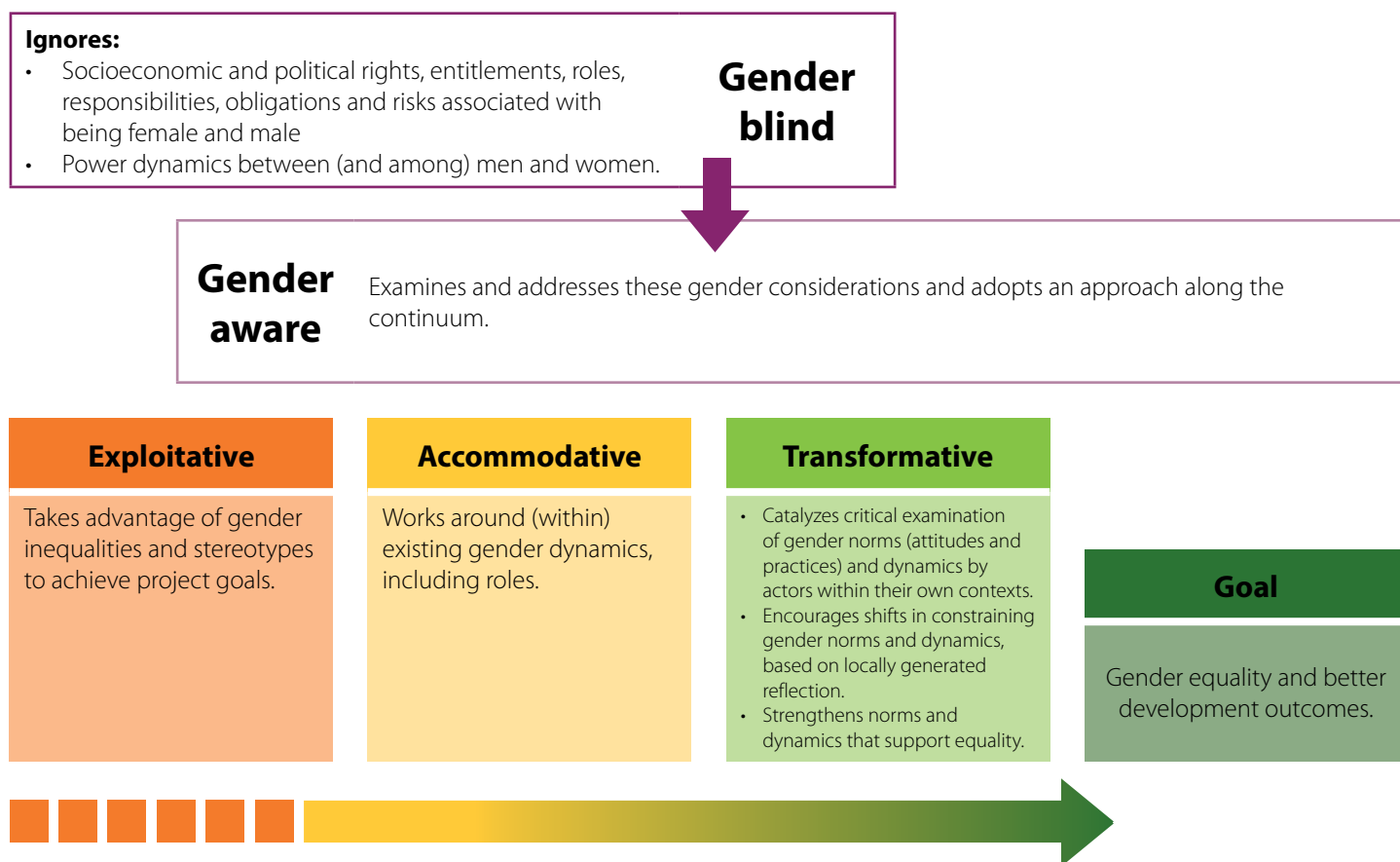
Approaches to gender within a research program can be understood on a spectrum from gender blind to accommodative to transformative, as outlined in Figure 4 (see also AAS 2012; Kantor 2013).

As a first guiding principle, FISH aspires for all its research involving people to be gender aware, and at a minimum **gender-accommodative**. This implies avoiding both gender-blind and gender-exploitative approaches. Accommodative approaches, such as designing opportunities, timing and location to accommodate women's existing domestic and care roles and responsibilities in given contexts, are necessary to reach and benefit women and can offer important entry points for empowerment.⁶

As a second guiding principle, FISH aims to ensure that **gender-transformative approaches** form an integral part of its activities in both flagships. Gender-transformative research involves the development,

testing and application of strategies that go beyond understanding or accommodating gender constraints, to also creating opportunities for locally driven and context-appropriate shifts in underlying gender barriers. In particular, gender-transformative approaches aim to constructively shift constraining gender norms, attitudes and behaviors towards those that support gender equality (Box 4). In doing so, it will build on the success of the AAS CRP as a leader in this area (for example, Kantor et al. 2015; Cole et al. 2016; Promundo-US and AAS 2016).

A third guiding principle is that FISH aims to increasingly apply an **intersectional approach** as part of its gender analysis. This means that it will not approach gender as 'binary', in which women and men represent indivisible homogeneous social categories. Rather, it will seek to elucidate the intersections of gender, wealth, age and/or other social characteristics. This will include identifying if, how and to what extent women and men and the gender dynamics in which



Source: Adapted from IGWG Gender Integration Continuum (2017)

Figure 4. Gender approaches. FISH aspires for all its work involving people to be at least gender-accommodative.

they are embedded are different—or are similar—for different age or wealth groups, or agro-ecological contexts or other aspects. This will involve, for example, needs, risks, enabling or limiting factors, and outcomes and what this means for policy implications. Connected with this, gender research in FISH aims to recognize and address other forms of marginalization, such as that of the landless poor or minority groups. This will be translated into practice via the application of an intersectional lens in research design and analysis, focusing initially on wealth and life stage (in particular youth and adult) in design and analysis.

Types of gender research

Gender will be mainstreamed in FISH research from design through to implementation, analysis and M&E. This will be undertaken through two types of gender research: **gender-integrated** and **gender-strategic**. These correspond respectively with the CGIAR Program of Work and Budget categories of Significant gender research ('1') and Principal gender research ('2') (CGIAR 2017). FISH will contribute to progress on systemwide refinement on criteria of these categories through the CGIAR Collaborative Platform for Gender Research.

FISH is committed to effective, outcome-oriented gender integration throughout the CRP. Also referred to as 'mainstreaming' of a gender lens and gender analysis, **gender-integrated research** in FISH

is aquaculture or small-scale fisheries research in which there is effective consideration of gender throughout the technical study (such as assessing and incorporating the needs of and barriers facing both women and men farmers in designing and tracking gender-differentiated access, control to and impacts of new aquaculture packages). In other words, in current CGIAR terminology, gender is *significant* to the research in that it 'is an important and deliberate objective but not the principal reason for the output' (CGIAR 2017). The gender-integration approach, good practices and tools will be further refined and fleshed out as FISH progresses, with appropriate resource materials developed.

Strategic gender research in FISH is research that has gender in aquaculture or small-scale fisheries as the subject of the research (such as research into the extent to which decision-making in small-scale fisheries governance is gender equitable, including factors and outcomes). In other words, in current CGIAR terminology, gender is 'the main objective and is fundamental to its design and expected results. The output would not have been undertaken without this objective' (CGIAR 2017). FISH will undertake high-quality strategic gender research into a select set of priority issues and research questions in line with the FISH TOC and impact pathways. These priority areas and questions are presented in [Research themes and questions](#).

Box 4. What is a gender-transformative approach?

A gender-transformative approach is an approach that fosters a locally led self-examination, questioning and, most fundamentally, shift in constraining gender norms, attitudes, behaviors and practices and related imbalances of power (McDougall et al. 2015; IGWG 2017). By encouraging critical awareness among men and women about social inequality and practices, a gender-transformative approach seeks to help people challenge and reshape unequal power dynamics and their underlying causes in a way that makes sense to them. This includes examination of control over resources, allocation of duties between men and women, and access to and influence in decision-making (Meng 2015). It also includes enabling men to become aware of and question how gender dynamics, and in particular 'harmful masculinities', may affect men themselves (see Cole et al. 2015). As such, engaging men constructively in change processes is a key facet of a gender-transformative approach. In sum, a gender-transformative approach seeks to enable awareness of gender dynamics and the visible manifestations of gender inequalities and inequities (such as gendered roles and relations and their outcomes) as well as to catalyze locally led shifts in the norms, attitudes and formal and informal rules that underpin these visible manifestations of inequality.

A gender-transformative approach differs from more commonly applied gender-mainstreaming approaches in agricultural and development research in terms of the framing of issues to be addressed (Cole et al. 2014). Gender mainstreaming focuses on addressing visible manifestations of a gender gap, such as women's limited access to training or resources. A gender-transformative approach adds a level at which the central problem is framed. It does so by adding a focus on the formal and informal institutions underlying the visible gender or social gaps—in particular, on (gendered) social norms, attitudes, practices, processes and rules or policies. The reason for this focus is that it is at this level that gender and social inequality is produced and reproduced (Kabeer 1994).

Gender-related research activities

As indicated, all gender-related activities will be situated within or across the two FISH flagships. The overall activities are outlined here. The direction of activities and plans will be regularly assessed and adapted as the CRP progresses. Early program investments will prioritize in-house capacity development as well as formative research, such as assessing gender norms in key contexts, and identifying barriers and opportunities for women in fish value chains, and synthesizing lessons for inclusive governance. From 2019, the CRP investment will increasingly involve action research and testing of promising innovations arising from the foundational work.

Gender in Flagship 1: Sustainable Aquaculture

An estimated 76 million new jobs will be created globally by the growth of aquaculture between 2010 and 2050, with most in low-income countries (Waite et al. 2014). Flagship 1 gender research will focus on how opportunities arising from the growth of aquaculture can be socially and gender-responsive and inclusive, equitable and empowering.

Within the above, Cluster 1 (Fish Breeds and Genetics) of this flagship will generate new knowledge about the gendered needs and preferences of women and men in relation to improved tilapia and carp strains in different countries and contexts. This will inform FISH breeding programs so they can become more user-responsive, in particular gender-responsive. Cluster 2 (Feeds, Fish Nutrition and Health) will identify previously unassessed differences and commonalities in women's and men's priorities and needs regarding fish feeds and health, to generate new gendered insights to inform this technology R&D. Cluster 3 (Aquaculture Systems) is the integrative and applied research cluster and will comprise multiple gender research components. This cluster will analyze farm-scale gendered experiences of the benefits and drawbacks, including labor demands, from aquaculture technology and practice innovations. These findings will be applied to enhance the gender responsiveness, equitable adoption and impacts of the flagship innovations. This will include technologies that meet women's specific needs and preferences, including time and labor, for example testing women-targeted technologies for fish harvesting in pond polyculture systems. In relation to this, the cluster will also assess gender-inclusive aquaculture extension models in terms of ability to enhance women's

engagement.⁷ Cluster 3 will also investigate which factors limit or enable women's access to and control over aquaculture assets such as fish fry, information, finance and storage. This will reduce barriers to equitable engagement in and benefits from the growing sector, including the emerging private sector and private-public partnership opportunities. Finally, the cluster will identify and test opportunities and strategies for more gender-equitable engagement in and wealth generation from aquaculture value chains through safe, dignified and higher return entrepreneurship and other value chain opportunities.

Across the above, Flagship 1 will follow FISH's emerging gender-integration guidelines, including seeking to progressively sex-disaggregate its data and analysis in line with the CGIAR standards. As appropriate, it will apply tools and methods to enable cross-context and cross-flagship comparisons, including both qualitative case studies regarding empowerment and adaptations of quantitative tools such as the Women's Empowerment in Agriculture Index (WEAI), i.e. the Women's Empowerment in Fisheries Index (WEFI).

Gender in Flagship 2: Sustaining Small-scale Fisheries

Women are consistently underrepresented in small-scale fisheries statistics and policy (Kleiber 2015). Women also tend to have less engagement and voice in decision-making in small-scale fisheries governance and management. This reduces the effectiveness of management actions, perpetuates inequities in the opportunities small-scale fisheries offer and hinders the achievements of food and nutrition security outcomes. Moreover, while women's contributions to and empowerment within local to global food systems are key pathways for food and nutrition security outcomes, there is a lack of evidence-based strategies for inclusion and empowerment (and equity and gender-transformative change) in capture fisheries (for one exception, see Cole et al. 2018). Flagship 2 gender research will focus on how small-scale fisheries and associated food systems can be socially and gender-responsive and inclusive, equitable and empowering, and facilitate the reduction in barriers to gender equality.

In collaboration with key partners, Flagship 2 will identify and test strategies and models to enhance socially and

gender-equitable engagement in and benefits from small-scale coastal fisheries (Cluster 1) and from fisheries operating in multifunctional freshwater landscapes (Cluster 2). This will include research into equitable fisheries management, examining and working within local to national governance systems, as well as research into diversified and enhanced livelihoods via innovations in processing and adding value to products from capture fisheries. Research will be delivered through and include refinement and contextualization of gender-accommodative and gender-transformative strategies (McDougall et al. 2016; Promundo-US and AAS 2016; Lawless et al. 2017). These strategies will be informed by Flagship 2's early research insights on norms and relations as barriers and opportunities in rural governance and livelihoods (e.g. Cohen et al. 2016; Iniesta-Arandia et al. 2016; Lawless et al. 2017; Lawless et al. in review; Locke et al. 2017). Additionally, the flagship will synthesize current thinking, practice and evidence regarding inclusive governance and livelihoods to inform the field as well as further flagship design. Research under Cluster 3 (Fish in Regional Food Systems) will include gender analysis within the food systems framework to develop gender-responsive lessons for fisheries and food policy. This will incorporate a focus on gendered aspects of access to and control over key assets, sex-disaggregated roles within small-scale capture fisheries and women's empowerment as a pathway to nutritional outcomes.

Flagship 2 will address these challenges through both gender-integrated and strategic gender research. In terms of integration, in the place-based and cross-context analyses as well as capacity-building investments and efforts to build more gender-sensitive fisheries policies, Flagship 2 will apply, and build capacity in the application of, the sex-disaggregated data collection. While Clusters 1 and 2 will focus more on case studies, Cluster 3 will focus more on developing sex-disaggregated datasets regarding participation in and flow-on benefits from small-scale fisheries and their value chains. Through partnerships, the methodology and findings will trigger more systemic changes in the collection and use of sex-disaggregated data in fisheries research and decision-making.

Flagship 2 will mirror efforts in Flagship 1 to adapt, refine and apply tools for assessing women's empowerment in fisheries contexts. Specifically, Flagship 2 will further adapt and apply qualitative tools from GENNOVATE as well as the WEAI-based WEFI tool. In combination with applying gender analysis frameworks, the flagship will add depth and broader social inclusion to its analysis by drawing on other relevant research frameworks, such as the well-being lens (Weeratunge et al. 2014), human rights

perspectives (Allison et al. 2012) and analyses of power, representation and accountability (Ratner et al. 2013).

The above will support national governments and civil society actors in implementing the [Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries in the Context of Food Security and Poverty Eradication](#) (FAO 2015), which strongly promote a range of commitments to gender. As part of this, the flagship will seek to understand the capacity needs and policy adjustments of both public agencies and civil society actors to improve their engagement with gender as per their commitments to international instruments. These assessments will guide capacity-building efforts in which gender will be a focus. Capacity building in Flagship 2 will be both gender-strategic (through targeted trainings, investment in communities of practice on gender) and gender-integrated (to support a gender lens in capacity building in areas such as collaborative action research and co-development of monitoring and evaluation).

Monitoring and evaluation (M&E)

Gender-integrated M&E in FISH

M&E in FISH will be gender integrated. While an evolving process, as a starting point, this means that FISH M&E will orient to the following principles:

- Gender will be appropriately reflected in the goals of and along the impact pathways and theories of change in FISH and FISH projects, such as women's empowerment as an outcome and lever or women-specific targets as appropriate.
- The M&E design and indicators will enable the measurement of gender responsiveness, in particular:
 - projects and their associated monitoring systems will be clear in terms of what their gender-related aims are (i.e. appropriate clarity of aims along a spectrum from disaggregating data and/or reaching, benefiting or empowering women and/or contributing to gender-transformative change⁸);
 - M&E methods will enable the capture of negative and unintended consequences, such as impacts on women's work burdens;
 - M&E methods will generate and account for explanatory information (how and why) regarding gender-related change and impacts, to inform evidence-based revisions of the theory of change.
- M&E methods and tools will be appropriate and effective in gathering the above-identified types of information (as per principle ii). This implies:
 - the need for mixed methods (qualitative and quantitative) to enable the capturing of unintended consequences, negatives, participants own framings and explanatory aspects;
 - following (and contributing to) evolving best practices in terms of sex-disaggregated data and intersectional analysis.
- M&E methods selection will take into account the potential for M&E processes themselves to be either disempowering or empowering and will design for empowering processes and building ownership by participants as much as possible, for instance by including participatory M&E and return of findings.

M&E activities

At present, there are three main areas of work. Each is elaborated below:

M&E of gender research outputs, and of selected research uptake and development outcomes, all contributing to the FISH Plan of Work and Budget (POWB) process

Tracking of gender research outputs, and of select uptake and outcomes, will be carried out as part of the FISH M&E strategy to inform the FISH POWB reporting. As part of the FISH M&E system, the CRP will identify and evidence where and how gender research and outcomes contribute to FISH impact pathways. Table 1 below is an early illustrative M&E plan, with indicators to be refined. Specifically, the indicators and means of tracking will continue to be refined and adapted as appropriate as the CGIAR indicators and the FISH M&E system and indicators evolve.

Development and testing of M&E methods, tools and (survey) instruments for assessing gender-transformative change and women's empowerment

As indicated in the above sections, gender research in FISH will continue to develop and test scalable methods and tools for assessing gender-transformative change and empowerment. In particular, it will contribute to this area in terms of innovative mixed methods approaches. This will include building on early adaptations and testing of the WEFI (a WorldFish fisheries adaptation of the WEAI), including combining this empowerment survey tool with normative gender attitude assessments, and qualitative analysis in before and after/treatment and control designs.

M&E for learning for continuous gender research theme and team improvement

M&E for learning in relation to gender will take place annually through a systematic and participatory review of progress and lessons using a multi-year FISH gender research road map (see Table 1).

Sphere	Focus of M&E	Indicator areas (indicators to be developed and refined)	Source	Timing
Control	Implementation of Gender Strategy	Development and iterative application of the FISH gender research road map for M&E and learning	Gender research road map; gender theme meeting records	Annual
		Extent to which plans and milestones for gender integration—as expressed in the FISH gender research road map—are met	Participatory review of gender research road map, with evidence from researcher updates, project reports and outputs	Annual
		Extent to which plans and milestones for strategic gender research—as expressed in the FISH gender road map—are met	Participatory review of gender research road map, with evidence from researcher updates, project reports and outputs	Annual
		Extent to which gender plans and milestones for gender capacity development—as expressed in the FISH gender road map—are met	Participatory review of gender research road map, with evidence from researcher updates, project reports and outputs	Annual
		Extent to which gender plans and milestones for gender-related partnerships—as expressed in the FISH gender road map—are met	Participatory review of gender research road map, with evidence from researcher updates, project reports and outputs	Annual
	Capacity development of staff and partners	Number and gender of staff and partners who participate in training or other capacity development on gender	Project and capacity development reports	Annual
	Gender-equitable participation in research	Number of direct participants, and percentage by gender, involved in FISH research activities, disaggregated by gender	Project reports	Annual
	Research products (outputs/deliverables)	Percentage of priority FISH deliverables (peer-reviewed journal articles and FISH publications) that are ‘principal’ (strategic) and ‘significant’ (integrated) in terms of gender research	WorldFish publications portal; deliverables	Annual
Influence	Research outcomes (use/uptake)	Application of FISH insights and recommendations in policy, or in private, public or development agency partner investments or programming	Partner reports; policy documents	Annual
Interest	Development outcomes	Changes in women's empowerment and/or gender-transformative changes (underpinning equality) in a subset of FISH projects	Select outcome cases or stories; project reports and project M&E reports or impact assessment reports	3–5 years

Table 1. Gender theme preliminary M&E focal and indicator areas, to be refined iteratively with the development of FISH M&E.

Budget

FISH will aim to align with the CGIAR Independent Evaluation Arrangement’s recommendation of CRPs investing a minimum of 10 percent of CRP budget into gender integration and research (CGIAR-IEA 2017),⁹ including capacity development. Specifically, as per the commitment in the FISH Proposal,¹⁰ FISH will aspire to make an investment of 12.1 percent of the overall CRP budget (see Table 2). This will come from a combination of all funding sources. The CRP acknowledges that this will involve a transition period and require effective leadership and change management in budgeting. Moving toward these targets will involve both improved integration of gender into the resource mobilization pipeline, and active resource mobilization efforts around key strategic gender research priorities, which will take into account assessment of fit between focal country needs, donor priorities and strategic partnerships.

These investments in gender represent both strategic gender research and gender integration within flagship activities. From bilateral and W3, in particular, this represents investments in in-country gender science capacity (such as scientists, specialist consultancies, partners working within country programs), in-country capacity development for researchers and partners as well as country-specific gender integration and strategic research costs. The W1/W2 investments in gender will prioritize strategic research, the FISH Gender Strategy and M&E development and implementation, select partnership development for science quality and impact, cross-context research synergies and methods consolidation, and global science capacity for this as well as capacity building (workshops, training, dedicated mentoring and resources) for the gender research team.

	Estimated annual average investment (USD)	Six-year investment (2017–2022) (USD)	Percentage of total flagship budget (all sources)
Flagship 1: Sustainable Aquaculture	1,544,442	9.3M	11.9%
Flagship 2: Sustaining Small-Scale Fisheries	1,272,360	7.6M	13.2%

Table 2. Flagship investments in gender, as per the FISH Proposal (WorldFish 2016) and Addendum: Flagship 2 (WorldFish 2017). Note that the dollar figures will be adjusted based on the flagship actual total budgets on a year-by-year basis.

Management system

Structure

The conceptualization and operationalization of this FISH Gender Strategy is the work of a cross-cutting gender team coordinated by the gender research leader, in collaboration with key FISH science leaders. Specifically, the gender research leader is part of the FISH leadership team and as such sits on the FISH Management Committee. Additionally, the gender research leader will engage with the FISH Independent Steering Committee in ensuring science quality, and depth and breadth of gender in FISH research. The gender team researchers are embedded in and contribute to gender integration and/or strategic research in their respective countries and FISH bilateral/W3 projects, while also operating as part of a cross-country, cross-flagship team. The team capacities are further outlined [in Review of capacity](#).

The roles of the gender research team in the program (varying by country and budget) are as follows:

- Support FISH research approaches and designs so that they are at a minimum gender-accommodative, including that they are effectively socially and gender-inclusive, responsive and appropriately empowering.
- Support FISH research approaches and designs so that they are gender-transformative when possible and appropriate, including developing and testing gender-transformative strategies.
- Apply and support a gender lens to inform the priorities and overall design of flagship research, impact pathways and M&E.
- Enable FISH study design, implementation, analysis and communication that is effectively gender-integrated, including through sex-disaggregated, intersectional data and analysis, as appropriate.
 - Undertake cutting-edge strategic gender research leading to the identified products and outcomes in each of the flagships.
- Identify, develop and empirically test needed methods for gender research, in particular for assessing transformative change and women's empowerment.
 - Contribute to systemic gender change via gender capacity building for and with researchers and local to international partners.
 - Contribute to the continued development of gender in CGIAR through scientific and collaborative engagement in the Gender Platform.

Additionally, the gender team will engage with a larger network within FISH of technical (nongender expert) researchers and leaders, sharing information, learning and collaborating on setting priorities.

Flagship and cluster leaders, bilateral project leaders, the M&E leader and country directors of focal and scaling countries will also play key roles in ensuring the effective implementation of the FISH Gender Strategy. In particular, they will be responsible for ensuring that gender is integrated into their respective areas, including budgets and staff. For example, project leaders, starting at the proposal development stage, will be responsible for ensuring that gender is effectively integrated into the design, with input from the gender research leader and team as needed, and that the budget allocation aligns with the above FISH targets and project needs. Flagship and cluster leaders will support and create enabling environments for effective gender integration, including strategic research as needed. The M&E leader will play a key role in working with the gender leader and team to ensure that the M&E framework is gender-integrated, from TOC and indicator development, to implementation of the M&E system, through to gender-integrated reporting ([see Monitoring and evaluation](#)).

Operationalization

Gender is an official crosscutting research theme in FISH. Building on the success of the gender approach in the AAS and L&F CRPs, the gender team will be organized towards the achievement of gender research theme goals by developing and implementing a road map for effective integration and implementation of gender research in FISH. The road map will be based on a collaborative process of visioning, goal setting (milestones) and action planning across key areas, including capacity development, research quality, outputs and M&E. This process will involve the gender team researchers and leader as well as the FISH Management Committee and partners. The road map will be revisited and updated each year as part of ongoing M&E for learning, catalyzing insights about progress and strengths, weaknesses or gaps, challenges and opportunities, thus enabling iterative improvement in the planning and implementation of gender research.

As part of research activity planning in FISH, cluster research teams will work with the gender leader and gender team members to consider in what ways and to what extent gender is relevant and integral to achieving the research aims. These researchers will jointly establish how the research will be gender integrated, if there will be strategic gender research and/or if gender-transformative strategies are required or should be tested.

In conjunction with the above, the gender team will organize integration and collaboration between various threads of research for the sake of coherence and synergies. This will involve spearheading syntheses of gender research across activities, generating international public goods as a result.



Photo credit: Heba Al Begawi/WorldFish

Fish sellers at the market in Fayoum, Egypt.

Review of capacity

Organization and staffing

The gender team will comprise the gender research leader (a senior scientist at WorldFish) and a team of gender researchers. The latter will consist of flagship researchers from diverse disciplinary backgrounds with a commitment to and a range of expertise in quality gender integration and research.

In terms of building the team and gender staffing, FISH will act on the learning from AAS regarding the need for appropriate gender expertise at each level. Specifically, whereas AAS recruited junior gender analysts into key locations, FISH is (as funding allows) taking a more strategic, outcomes-based approach. Specifically, the gender analysis and planning that laid the foundation for the FISH Proposal has enabled the identification of strategic gender research issues and intended gender outcomes for each flagship. Thus, as part of the planning process, each flagship will assess the level and type of gender expertise that is needed, in which countries, for each cluster to succeed. Depending on funding, each FISH [focal country](#) will pursue its own gender staffing plan—with capacity sharing across countries as needed—and this will be factored into budget planning and proposal writing. Staffing will be complemented by strategic science partnerships, such as with the University of East Anglia or independent experts, at either the country or cross-country level. The intended end result is that all focal countries will have sufficient dedicated gender science expertise through a combination of in-country or shared staff or partnership.

Gap assessment and capacity development

In addition to securing capacity through strategic staffing (above), the gender team—together with the FISH flagships teams, Management Committee and Human Resources—will work with research (project) teams to identify gender-related research capacity needs. This includes needs regarding knowledge and skills for gender integration and for gender analysis as well as to increase gender awareness and gender-transformative capacities among staff and partners. As part of the gender budget allocation, funding and gender experts' time will be allocated to address these needs. In terms of strategies, capacity development will include in-house processes such as iterative reflection processes and mentoring. It will also involve externally led capacity development, such as mentoring or training on gender integration in technical research with a partner such as [KIT Royal Tropical Institute](#).

In relation to the above, FISH will support researcher capacity development through the development or consolidation of tailored resources for FISH, such as bespoke FISH gender-integration guidelines and an open access [Tool Navigator](#) for user-responsive innovation.

Aligning with the investment in the development of emerging women and men scientists, FISH will engage gender-interested emerging researchers, including postdoctoral fellows and master and PhD students. Involvement with these researchers—such as through leading the Gender and Breeding Postdoctoral Fellows Initiative—will support their development as gender-informed and interdisciplinary-capable researchers.

The above will dovetail with the CGIAR Gender Platform capacity development agenda. More broadly, the FISH gender team will contribute to and benefit from engagement in the Gender Platform, including around methodological development. FISH will specifically support capacity development of emerging women and men scientists in relation to gender by supporting their involvement in or contributing to CGIAR capacity development opportunities, such as the Gender Research Integration Training (GRIT) and the CGIAR Collaborative Platform for Gender Research's Capacity Development Workshops.

Glossary

Equity refers to the concept of fairness, usually according to respective needs. Relating to social justice, this 'may include equal treatment or treatment that is different but which is considered equivalent in terms of rights, benefits, obligations and opportunities' (ILO 2000, 92). Perceptions of equity, such as perceptions of fairness in access to fishing areas or other natural resources, may influence the effectiveness of management institutions. Interest in equity may similarly prompt pro-poor strategies, such as subsidies for group membership for poor households.

Gender equality refers to 'the enjoyment of equal rights, opportunities and treatment by men and women and by boys and girls in all spheres of life. It asserts that people's rights, responsibilities, social status and access to resources do not depend on

whether they are born male or female' (ILO 2000, 92). UN Women (2001) defines gender equality thus: 'The equal rights, responsibilities and opportunities of women and men and girls and boys. Equality does not mean that women and men will become the same but that women's and men's rights, responsibilities and opportunities will not depend on whether they are born male or female. Gender equality implies that the interests, needs and priorities of both women and men are taken into consideration, recognizing the diversity of different groups of women and men. Gender equality is not a women's issue but should concern and fully engage men as well as women. Equality between women and men is seen both as a human rights issue and as a precondition for, and indicator of, sustainable people-centered development.'



Fishers harvest ark clams in Mararo Mangrove Managed Area, East Are'are, Malaita Province, Solomon Islands.

Gender-integrated research is defined by CGIAR as research that integrates consideration of gender into technical research of the principal topic of study, e.g. plant breeding, aquaculture, postharvest technology development or systems intensification (CGIAR Gender and Agriculture Research Network 2015). Note that the FISH CRP aims to be intersectional in its approach to gender, i.e. addressing cross-cutting differences such as age, wealth, livelihood groups, caste or ethnicity, rather than simply distinguishing men versus women.

Gender- and socially inclusive research is research that applies strategies, methods and tools to ensure that women and men from all socioeconomic and social groups have equitable opportunity for, quality of engagement in and returns from participation in FISH research processes. All FISH research will aspire to be gender and socially inclusive.

Gender-responsive technologies and innovations are technologies and innovations that take into account, and through their design and process respond to, the potentially differential needs, preferences, constraints and opportunities for better access, adoption, utilization and benefit of both women and men.

Gender-transformative approach to research fosters a locally led self-examination, questioning and, most fundamentally, shift in constraining gender norms, attitudes, behaviors and practices and related imbalances of power (McDougall et al. 2015; IGWG 2017). By encouraging critical awareness among men and women about social inequality and practices, a gender-transformative approach seeks to help people challenge and reshape unequal power dynamics and their underlying causes in a way that makes sense to them. This includes examination of control over resources, allocation of duties between men and women, and access to and influence in decision-making (Meng 2015). It also includes enabling men to become aware of and question how gender dynamics, and in particular 'harmful masculinities', may affect men themselves (see Cole et al. 2015). As such, engaging men constructively in change processes is a key facet of a gender-transformative approach. In sum, a gender-transformative approach seeks to enable critical awareness of gender dynamics and the visible manifestations of gender inequalities and inequities (such as gendered roles and relations and their outcomes) as well as to catalyze locally led shifts in the norms, attitudes, and formal and informal rules that underpin these visible manifestations of inequality.

Intersectionality refers to 'the influences of multiple identities in a person as these interact with marginalizing and empowering structures, norms and narratives' (Colfer et al. 2018, 2). An intersectional lens 'conceptualizes social categories as interacting with and co-constituting one another to create unique social locations that vary according to time and place. These intersections and their effects are what matter in an intersectional analysis' (Hankivsky 2014, 9).

Men's (and boy's) engagement is highlighted in the FISH Gender Strategy particularly in relation to gender-transformative change. The emphasis on engaging men in gender-transformative research is based on the premise that 'the ways in which boys and young men are socialized hold profound implications for the health, well-being, and security of men and boys, and for women and girls' (Promundo-US and University of Pittsburgh Medical Center 2018, 4). Research that is sensitive towards the socialization process is pertinent for intervention that seeks to transform inequitable gender norms as these norms influence the way 'men interact with their partners, families and children on a wide range of issues' (WHO 2007, 3).

Principal gender research is research in which gender is 'the main objective and is fundamental to its design and expected results. The output would not have been undertaken without this objective' (CGIAR 2017). Applied as functionally synonymous with strategic gender research (see below). This represents a '2' on the 0-1-2 POWB scale of the CGIAR.

Significant gender research is research in which gender is an important and deliberate objective but not the principal reason for the output (CGIAR 2017). Applied as synonymous with gender-integrated research. This represents a '1' on the 0-1-2 POWB scale of the CGIAR.

Strategic gender research is defined by CGIAR as 'research that studies gender as the primary topic in a social analysis designed to understand what the implications of gender are for agriculture. This includes how men and women allocate labor resources in intrahousehold decision-making about farm production' (CGIAR Gender and Agriculture Research Network 2015).

Women's empowerment is conceptualized in FISH to reflect Kabeer's seminal definition of empowerment as 'the expansion of people's ability to make strategic life choices in a context where this ability was previously denied to them' (Kabeer 1999, 437). This

includes the ability to 'transform those choices into desired actions and outcomes' (Alsop, Bertelsen and Holland 2006, 10). Women's empowerment can thus be understood as being about the improvement in women's ability to gain power and control over their own lives (UN Women 2001), or in other words, the 'expansion of choice and strengthening of voice through the transformation of power relations so women and girls have more control over their lives and futures' (Van Eerdewijk et al. 2017, 17). As such, empowerment is both a process and an outcome:

'As an outcome, it concerns the degree of freedom women and girls have to control and influence their lives and futures. As a process, it highlights the change that is required for empowerment to be a reality. It is through experiencing, undertaking and directing empowerment processes that women and girls expand their aspirations, strengthen their voice, exercise more choice and take more control over their lives and futures' (ibid).



A woman performs a drama skit on improving gender relations in Mukakani fishing camp, Mongu district, Western Province, Zambia.

- ¹ [‘Achieve gender equality and empower all girls and women.’](#)
- ² The Strategy and Results Framework 2016–2022 (CGIAR 2015) presents in 'Annex 4. How CGIAR goals align with the Sustainable Development Goals (SDGs)' that all three SLOs align with SDG 5. In fact, SDG 5 is the only SDG that is identified as being aligned with all three SLOs. In more concrete terms, the framework identifies as one of its priorities 'gender and inclusive growth, creating opportunities for women, young people and marginalized groups'. In the 'What are we doing differently?' section, the CGIAR asserts that in this phase it is 'committing to closing the gender gap by equitable access to resources, information and power in the agri-food system'.
- ³ [FISH Proposal \(WorldFish 2016\)](#).
- ⁴ Such as assessment of and innovations in fish production and input supplies, capture, processing, or storage and transportation technologies and/or practices, and gender-inclusive and responsive extension systems to support farmers in accessing these.
- ⁵ See, for example, [OECD Development Matters](#).
- ⁶ At the same time, even accommodative approaches can risk (unintentionally) reinforcing gender roles or dynamics and may be limited in their effects. For example, a gender-accommodative approach may seek to work with and benefit women within the homestead space. This accommodates existing norms but carries a risk of unintentionally reinforcing norms that bind women to that space (and thus to lower returns and status opportunities). As such, research will assess and address these risks in design and implementation. Moreover, FISH embraces its second guiding principle (gender-transformative approaches) to address the fact that accommodative approaches are necessary but not sufficient.
- ⁷ We hypothesize that these will enhance poor women's engagement in small-fish aquaculture systems and control over harvests, in turn increasing consumption of small nutrient-dense fish by poor women and children.
- ⁸ In other words, research in the CRP will seek to more clearly distinguish between involving women (i.e. participation in training, activities or research), women benefiting (such as in terms of nutrition), empowerment of women (such as economic empowerment or enhanced control over key assets) versus transformation of the underlying barriers (such as constraining policy or gender norms or stereotypes). This builds on thinking such as Morgan (2014), Hillenbrand et al. (2015) and [Theis and Meinzen-Dick \(2016\)](#).
- ⁹ I.e. '...the 10 percent target can effectively act as a floor, below which CRPs should not drop' (CGIAR-IEA 2017, 82).
- ¹⁰ [FISH Proposal \(WorldFish 2016\)](#).
- ¹¹ Such as assessment of and innovations in fish production and input supplies, capture, processing, or storage and transportation technologies and/or practices, and gender-inclusive and responsive extension systems to support farmers in accessing these.
- ¹² Monoculture, polyculture, integrated and multifunctional fish systems and technologies and practices.
- ¹³ For example, with reference to governance and decision-making in community-based fisheries groups, governance of fish reservoirs in rice-fish systems and/or community aquaculture groups.

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Annex 1. FISH strategic gender research questions

Gender research in FISH will be oriented around the following research questions. These will not be fully answered by the CRP or any one project or in any one country. Rather, these will guide and shape the focus of FISH gender research. Conversely, gender research from across all countries will contribute to filling these particularly critical knowledge gaps.

These gaps and research priorities (framed here as questions) were identified through the gender analysis undertaken for the development of the FISH Proposal. As such, these questions correspond to the identified gender research pathways and priority themes (see [Research themes and questions](#)). In line with the impact pathways, as well as filling knowledge gaps in these areas, research teams working in each area will identify evidence-based implications for policy and practice of key actors in relevant contexts at relevant scales in relation to the questions.

Pathway	Research questions
<p>Gender-responsive and gender-inclusive innovation in technologies and practices in fish agri-food systems¹¹</p> <p>(i.e. contributing to fit of technology and practice and extension innovations with women’s needs and preferences)</p>	<p>1. What are the preferences and needs, as well as the risks, constraints and opportunities, of poor women and men from different socioeconomic groups in terms of aquaculture and small-scale fisheries? How can FISH innovation processes and products best respond to these?</p> <p>Gender-responsive technologies and practices</p> <p>a. What are poor women’s and men’s preferences and needs, as well as risks, constraints, opportunities and experiences, in relation to improved fish breeds (carp and tilapia strains), and do these differ or converge by gender or other social difference? What are the implications for effective priority setting in breeding programs and fish feed and disease and innovation development? What lessons emerge for interdisciplinary research?</p> <p>b. To what extent and in what way do poor women’s and men’s needs and preferences, as well as risks, constraints, opportunities and experiences, differ or align in relation to different fish production and capture systems¹² and processing, storage and transport? Do women or particularly marginalized groups face specific barriers, including in terms of access to and control over information and innovations? What are the implications for innovations, policy and extension?</p> <p>Crosscutting, to guide FISH research design</p> <p>c. What are the potential positive or negative implications of any (each potential) FISH innovations on poor women, including on their labor burdens? In particular, how can these innovations avoid risks and instead positively influence women’s empowerment and gender dynamics?</p> <p>d. Overall, what are current and emerging gender- and socially responsive innovation processes, technologies and practices for fisheries and small-scale aquaculture research? How do we know them when we see them? What research principles and practices enable effective social and gender responsiveness?</p>

Pathway	Research questions
<p>Innovation for inclusive livelihoods and wealth generation</p> <p>(i.e. enabling gender-inclusive growth and opportunities for women’s wealth generation; includes a focus on women’s entrepreneurship)</p>	<p>2. What factors and strategies enable the equitable engagement of, and benefits for, poor women in wealth generation in aquaculture and fisheries, including women-led enterprises?</p> <ol style="list-style-type: none"> a. To what extent and in what way are women’s and men’s aspirations for their livelihoods and futures in relation to fish systems (aquaculture and small-scale fisheries) the same or different? Do these differ and how between youth and adults and for people from different socioeconomic groups? If so, with what implications? b. What are the enabling and constraining factors and the most effective strategies and opportunities to enhance women’s wealth generation, in particular poor women, through women-led entrepreneurship or other opportunities for enhanced or diversified livelihoods in fisheries-dependent contexts? c. What effects do these strategies and opportunities have on women’s and household income, food security and women’s empowerment? In small-scale fisheries, can any of these livelihood strategies be ‘win-win’ in terms of returns for women and sustaining ecological integrity in coastal and inland fisheries?
<p>Innovation for inclusive governance and agri-food systems</p> <p>(focus on inclusive governance models)</p>	<p>3. What scalable strategies and models enable gender-equitable engagement and women’s empowerment in aquaculture and small-scale fisheries governance at community and group levels?¹³</p> <ol style="list-style-type: none"> a. To what extent and in what ways are aquaculture and small-scale fisheries governance processes and outcomes gendered? Including with what outcomes on resource decisions, livelihoods, and food and nutrition security? b. What factors enable or limit gender- and socially equitable engagement in aquaculture and small-scale fisheries governance? c. Which scalable models, including gender-transformative governance strategies, enhance effective engagement of women in and women’s empowerment through aquaculture and fisheries? To what extent for different women and how?

Annex Table 1a. FISH strategic gender research questions, by gender pathway.

Pathway	Research questions
Access to and control over assets and resources	<p>1. To what extent, how and why is access to and control over key assets and resources in aquaculture and small-scale fisheries gendered? How can it be made more gender equal and equitable? Including with respect to innovations and technologies and inputs via extension or other sources?</p> <p>a. Which assets and resources are most important for poor women and poor men in aquaculture and small-scale fisheries, and livelihoods/wealth generation from these?</p> <p>b. To what extent and how is access to and control over these assets gendered, including in terms of women's access to inputs, information and technologies via extension? With what effects on income, food security and women's empowerment?</p> <p>c. What factors underlie gender inequities and inequalities in control of key aquaculture and small-scale fisheries assets?</p> <p>d. What strategies, including gender-transformative strategies and/or policy changes, increase gender equality and equity in access to and control over these in different contexts and at different scales?</p>
Decision-making: Engagement and voice in household decisions	<p>2. To what extent, how and why is decision-making in aquaculture and small-scale fisheries gendered? How can it be made more gender equal and equitable?</p> <p>Household scale</p> <p>a. To what extent and in what ways is household decision-making gendered in relation to aquaculture and small-scale fisheries? With what effects on livelihoods and food or nutrition outcomes? With what other key positive or negative effects?</p> <p>b. What scalable strategies constructively shift household decision-making in these areas towards greater gender equality? How and with what effects on women's empowerment and on fish production, poverty or food security or nutrition outcomes?</p> <p>(See Governance pathway for community and group scale)</p>
Underlying and institutional factors: Focus on gender norms and attitudes and gender-transformative strategies	<p>3. What factors, strategies and tools enable constructive shifts in constraining gender norms and other underlying barriers to gender equality, equity and women's empowerment?</p> <p>a. How and in what way do formal and informal gender policies, norms and practices shape gender equality, equity and women's empowerment in aquaculture and small-scale fisheries practices, interventions and scaling?</p> <p>b. What factors, strategies and tools can enable constructive shifts in policy, norms and practices so that they catalyze greater gender equality, equity and women's empowerment? What are the implications for how research for/in development interventions can most effectively engage women and men?</p>

Annex Table 1b. Crosscutting gender questions by theme, to be addressed within and cutting across the pathways above, as appropriate.



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