CGIAR RESEARCH PROGRAM ON Fish

FACTSHEET

CGIAR Research Program on Fish Agri-Food Systems (FISH) in Myanmar

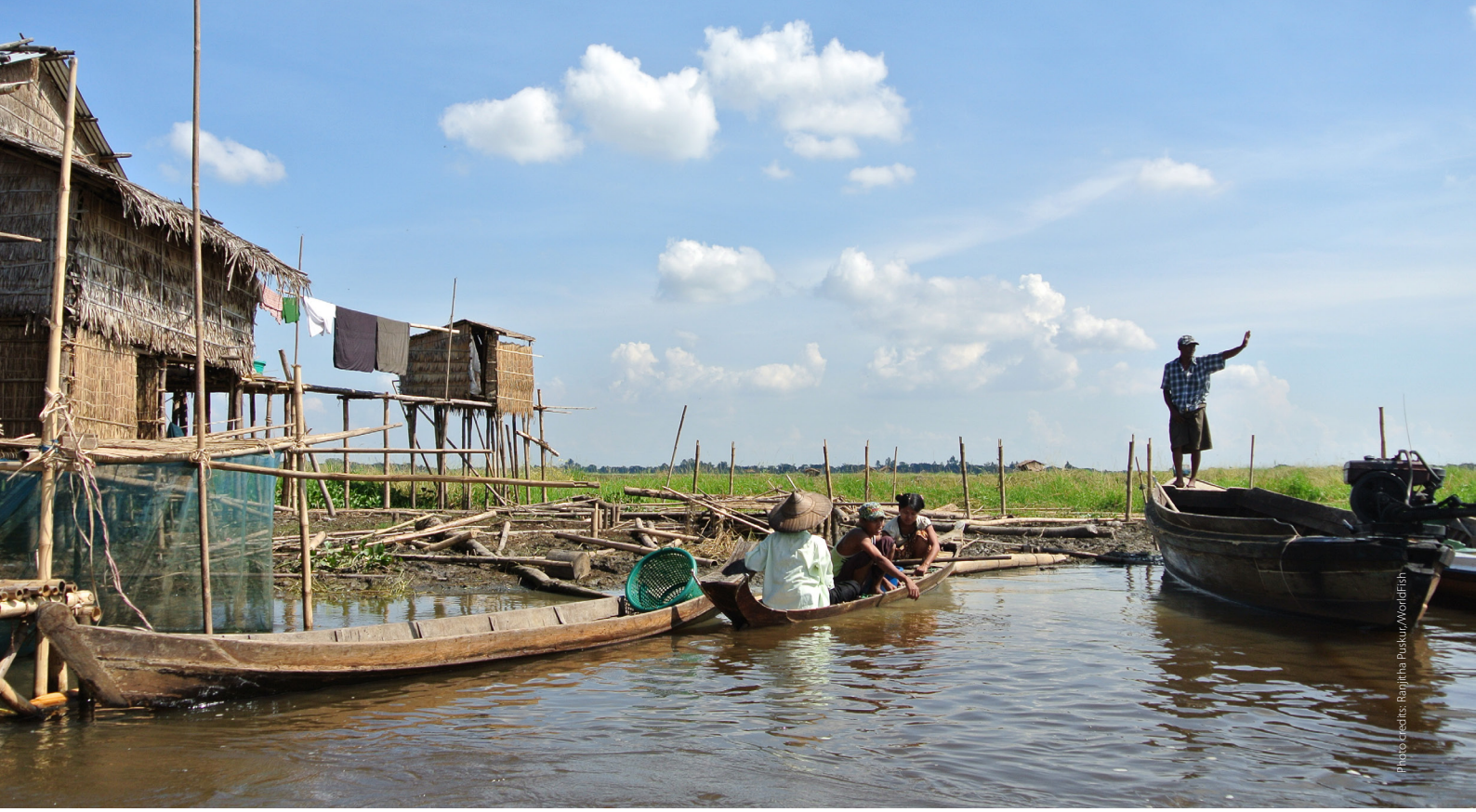
Introduction

Myanmar is a country with central lowlands including a mega delta, ringed by steep rugged highlands. The climate is monsoonal, producing distinct wet and dry seasons. At 676,578 km^2 with about 56 million people, Myanmar's population density is relatively low at 83/km^2. Most of the population is concentrated in the coastal areas and along the Ayeyarwady River. This is important when considering fishing pressure on natural resources, both inland and marine. As the second-most important food after rice, fish is an essential component of the diet in Myanmar, where per capita fish consumption is high at over 25 kg and the preference is for freshwater fish.

The Ayeyarwady river basin covers over 400,000 km^2 and its catchment is almost entirely in Myanmar. The area has 388 recorded fish species of which 193 (50%) are endemic. Fish production estimates vary between 3 (FAO 2017) and 5.5 million metric tons per year (Department of Fisheries 2016), with a decline in capture fisheries. At the same time, domestic demand for fish has been growing fast. Improved management systems are now required to safeguard sustainable capture fisheries, and the expanding aquaculture sector needs support to unlock its potential in new geographical areas and ensure an inclusive growth. The CGIAR Research Program on Fish Agri-Food-Systems (FISH) is assisting government institutions and national and international organizations with this process of adjustment. Our integrated research agenda is being developed and carried out in collaboration with our Myanmar partners and focuses on the two interlinked challenges of sustainable production from aquaculture and small-scale fisheries, with crosscutting themes of nutrition, gender, youth, climate change and entrepreneurship.

Sustainable aquaculture

Demand for fish is growing quickly as the country urbanizes and incomes rise. Aquaculture is ideally placed to meet this demand, while also raising farm incomes and creating employment. However, Myanmar's recent aquaculture growth has been driven mainly by large enterprises, which have historically been favored by the government. The sector is also very limited geographically, with 90% of inland fishponds located close to the capital Yangon. Existing regulatory frameworks, access to quality farm inputs and technologies, as well as knowledge and extension services, have limited the inclusive growth of aquaculture in the country.



FISH focuses on enabling environmentally sustainable farmed fish production and enhancing the contribution of aquaculture to poverty reduction, food security and natural resources management. Our integrated research and development program is articulated to unlock the potential for smallholder aquaculture in the Ayeyarwady Delta, Central Dry Zone, Shan State and Sagaing Region so that it contributes to rural growth and the national food supply. The research program in Myanmar includes the improvement of tilapia and carp breeding programs and the development of better feeds and farming systems, including the potential for novel fish feed ingredients. In addition, FISH assists with the packaging and wide dissemination of 'best management practices' for aquaculture and the development of farming systems that are low in greenhouse gas emissions with improved water and nutrient use efficiency, as well as support for establishing partnership platforms for aquaculture research and development. Special attention is also paid to integrated rice and fish systems and the farming of small nutritious fish.

Small-scale fisheries

The extensive networks of rivers and floodplains have historically supplied the bulk of fish for domestic consumption in Myanmar, and they are essential to the economy and people's livelihoods. The sector is faced with increasing problems of resource exhaustion, and there are growing concerns regarding the equity of prevailing management regimes. The recent decentralization process allows states and regions to enact their own freshwater fisheries policies and legislations. Propelled by an increasing dialogue between the government and resource users, this process has led to more consideration for the sustainability and equity of fisheries resource management. However, the substantial lack of knowledge on the resource-base, together with the poor monitoring capacity of national institutions, further complicates the task of improving freshwater fisheries governance in Myanmar.

FISH focuses on assessing the most effective routes to improve governance of small-scale fisheries in ways that sustain and increase contributions to food and nutrition security and livelihoods of those most in need. Our integrated research and development program in Myanmar supports the unfolding reform process toward more sustainable and equitable use of inland fish resources in the Ayeyarwady Delta and Central Dry Zone. The program encompasses an overall improvement of the inland fish resource-base knowledge (including the contribution of rice-based farming systems) and the design and testing of management initiatives integrating land and water use. It also aims to develop institutional monitoring tools to document traditional and novel fisheries management practices and assess their ecological sustainability as well as the equity of the distribution of benefits they provide.

Crosscutting themes

Nutrition

Myanmar has one of the highest rates of undernutrition in Southeast Asia. Implementing nutrition-sensitive approaches to aquatic agricultural food systems addresses major underlying and immediate causes of undernutrition, which improve nutritional outcomes of families, especially pregnant and lactating women as well as young children. This is in line with the UN's Sustainable Development Goals (SDGs) on zero hunger, good health and wellbeing as well as the Government of Myanmar goal's of achieving improved child nutrition.

In Myanmar, FISH focuses on contributing to nutrition outcomes through adapting successful, innovative, integrated homestead pond aquaculture, wetlands and rice field fisheries management technologies from Bangladesh and Cambodia, including the promotion of micronutrient-rich small fish and vegetable production and consumption by rural households. Research is being conducted to develop and test acceptable, context-based, fish-based products that can be available and accessible to vulnerable populations, especially during the first 1000 days of life, to address nutrient gaps. Social and behavioral change communication approaches and tools are being trialed with the goal of increasing micronutrient-rich small fish and vegetable consumption, especially among the rural poor.

Gender

While women in Myanmar make up about half of the workforce in fisheries and aquaculture, like most developing countries they face substantive challenges to engage in and benefit equitably from these sectors. Women generally face more severe constraints than men in accessing productive resources, markets and services. Closing this gender gap in fisheries and aquaculture systems is necessary not only to achieve the UN's SDG-5 on gender equality but also to leverage lasting impact toward reducing poverty and increasing food and nutrition security.

Recognizing this, FISH promotes gender-inclusive research and development interventions to meet the specific needs of both women and men in an equitable manner and facilitate gender-transformative changes. The program's gender research identifies opportunities to empower women in the following four ways: (1) entrepreneurship and employment in fisheries and aquaculture, (2) strategies to enhance women's equitable participation in household and community decisions on small-scale fisheries and aquaculture, (3) by enabling factors to enhance women's control over productive assets and resources, and (4) gender-transformative strategies to influence formal and informal gender rules, norms and behaviors that shape all the preceding towards gender equality.

Climate change, youth and entrepreneurship

Of the 10 bilaterally funded projects in Myanmar, two are specifically designed to adapt small-scale fisheries and aquaculture to climate change: FishAdapt and AQUADAPT interventions. At the same time, all 10 projects focus on youth in terms of encouragement to turn new ideas into positive action relating to sustainable aquaculture and inland fisheries management. These concepts often involve ways to add value and improve fish marketing thereby combining entrepreneurship. Aquaculture input supplies are often expensive or not available, which is why FISH has assisted young entrepreneurs with funding for small-scale fish food producing units at the township level.

Setting the basis of fisheries and aquaculture research in Myanmar

The Fisheries Research and Development Network (FRDN) is a multisectoral collaborative platform aiming to strengthen the research and development capacity of Myanmar's fisheries and aquaculture. Initiated by WorldFish as a researcher-to-researcher network, the FRDN is overseen by a management committee involving the Department of Fisheries (DoF), Myanmar universities and the private sector. It allows researchers to network and share knowledge, fostering new collaborations for co-research and co-documentation of aquaculture and fisheries research in Myanmar. The FRDN encompasses a digital library program managed by the DoF that gathers and disseminates research knowledge, which addresses a critical intersectoral research coordination gap in Myanmar (www.dof-myanmar-fic.org).

Future development outcomes

By 2022, FISH seeks to achieve the following development outcomes in Myanmar:

450,000
producer households adopting improved breeds, feeds, fish health and best management practices

400,000
people, at least half of whom are women, exit poverty through livelihood improvements related to fisheries and aquaculture value chains

120,000
people, half of whom are women, are no longer deficient in one or more of the following essential micronutrients: iron, zinc, iodine, vitamin A, folate and vitamin B12

470,000
ha of ecosystems restored through more productive and equitable management of small-scale fisheries resources and restoration of degraded aquaculture ponds

350,000
more women of reproductive age consume an adequate number of food groups

20% reduction
in greenhouse gas emissions and a 10% increase in water and nutrient-use efficiency in 340,000 t of fish per annum

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Contact us

WorldFish Myanmar Office
Department of Fisheries, West Gyogone, Bayint Naung Road, Insein Township, Yangon 11181, Myanmar
Tel: +950 1647 521 Fax: +950 1647 521 Email: worldfish-myanmar@cgiar.org

www.fish.cgiar.org

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WorldFish
IWMI International Water Management Institute
WAGENINGEN UR
JAMES COOK UNIVERSITY AUSTRALIA
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