CGIAR RESEARCH PROGRAM ON Fish
Led by WorldFish

FACT SHEET
CGIAR Research Program on Fish Agri-Food Systems (FISH)

A fish agri-food system is an interconnected and interdependent system involving components of fish production through to processing, marketing and consumption. The CGIAR Research Program on Fish Agri-Food Systems (FISH) is a collaborative global partnership that aims to enhance the sustainability, productivity and resilience of fish agri-food systems, contributing to global goals for poverty reductions, food and nutrition security, and improved resilience of natural resource systems.

The overarching research question guiding the program is: *How can we optimize the contributions of aquaculture and small-scale fisheries to reduce poverty and improve food and nutrition security, while enhancing environmental sustainability?*

About

The UN's Sustainable Development Goals (SDGs) will not be met if we do not take into account the potential of aquaculture and fisheries to positively impact livelihoods, food and nutrition security, and natural ecosystems.

Globally, 800 million people, including many poor and marginalized women, men and youths, depend on fish for food, income and nutrition. Fisheries and aquaculture provide more than 3 billion people with 20 percent or more of their animal source food. Fish is a rich source of micronutrients and essential fatty acids, which are critical to cognitive and physical development. In many low-income food deficit countries, fish contributes more than one-third of animal protein in the diet and is often the cheapest and most accessible animal source food. Fish demand is growing fast in Africa, Asia and the Pacific, with many countries projecting a doubling or more of fish supply needed by 2030.

FISH responds to these challenges through fostering impact-driven research innovations across the whole spectrum of aquaculture and fisheries production systems and value chains, with the goal of achieving sustainable increases in production, equitable distribution of nutritious fish to those most in need, improvement in ecosystem health and reduction in poverty through securing and creating new opportunities for inclusive income and employment.

Research

FISH research focuses on the two interlinked challenges of a sustainable and quality supply of fish from aquaculture and small-scale fisheries in agri-food systems while integrating cross-cutting gender, youth, capacity development and climate change challenges and opportunities across the program.

Sustainable aquaculture

FISH seeks to enable environmentally sustainable farmed fish production and enhance the contribution of aquaculture to poverty reduction, food and nutrition security, and natural resources management. A focus on enabling enterprises to enhance production efficiency and sustainability through domesticated, selectively bred, healthy and disease resistant fish reared on sustainable feeds and in low-carbon footprint production and nutrition-sensitive systems contributes to new and sustainable supplies of fish. It also creates gender-equitable livelihood opportunities and employment for men, women and youths. Impact assessment and foresight modeling linking fish production, consumption and trade generate knowledge to influence policies, investments and legislation in partnerships with civil society, and public and private sectors.

Sustaining small-scale fisheries

FISH seeks to secure and enhance the contribution that small-scale fisheries make to livelihoods, poverty reduction, nutrition and food security of communities in low-income countries. Research addresses, through close partnerships, the challenges of achieving ecological sustainability, good governance, equitable distribution of benefits and social-ecological resilience in landscapes where natural variability, land-use changes, hydropower development and climate change are major challenges.

Where we work

FISH pursues an integrated body of research in six focal countries. Three are in Asia (Bangladesh, Cambodia and Myanmar) and three are in Africa (Nigeria, Tanzania and Zambia). In addition, the program focuses on Egypt as a research hub and training center for aquaculture capacity development in Africa, and Solomon Islands as a hub for learning networks on small-scale governance in the Pacific. Successes and lessons learned from research are being shared to scaling countries in Africa, Asia and the Pacific, including Ghana, India, Indonesia, Kenya, Philippines, Malawi, Sierra Leone, Timor-Leste and Vietnam. The program also engages at global levels with partners such as the Food and Agriculture Organization and supports global policy change for broader impact from FISH research.

The selection of country partnerships is based on demand from national partners and the potential for impact, focusing on nations where fisheries and aquaculture make a significant contribution to food supply, economies and people, and where the potential for FISH contribute to livelihoods, poverty and food and nutrition insecurity challenges is high.

Managing partners

FISH's impact and success fully rely on its collaborative global partnership program nature. The program is led by WorldFish, together with the International Water Management Institute (IWMI) and three other advanced research institutes:

- the Aquaculture and Fisheries Group at Wageningen University & Research, Netherlands
- the Australian Research Council Centre of Excellence in Coral Reef Studies at James Cook University, Australia
- the Natural Resources Institute at the University of Greenwich, United Kingdom.

FISH managing partners cooperate with many other global, regional and national partners, and are progressively building a global partnership network, which is essential to achieve quality research outcomes and to deliver the development outcomes and impacts at scale necessary to achieve the SDG targets.

Impacts by 2022

The FISH program has set ambitious impact targets to achieve the following:

- Help at least 5.0 million households to adopt improved breeds, farming and fishing practices by 2022.
- Assist at least 3.5 million people, half of them female, to exit poverty.
- Reduce by 2.4 million the number of women, men and children suffering from deficiencies in essential micronutrients.
- Assist 4.7 million more women of reproductive age to consume an adequate number of food groups.
- Reduce greenhouse gas emissions and improve water and nutrient-use efficiency in at least 4.8 million metric tons of fish production per year.
- Help restore 3.3 million hectares of ecosystems through more productive and equitable management.

Research innovations that change lives

Fast-growing fish breeds

Improved, fast-growing strains of fish boost the productivity and incomes of fish farmers in developing countries, where yields are often low. FISH will continue its research on improved strains of tilapia in Africa and Asia, and of carps in South Asia, combined with accelerated dissemination of existing strains. Research on Genetically Improved Farmed Tilapia (GIFT), which WorldFish has developed over the past 30 years and disseminated to more than 14 countries, is exploring new traits in fish breeding, such as disease resistance and resilience.

Fish-rice systems

In Cambodia, fish refuges in rice-dominated floodplains are human-made ponds that provide a dry season sanctuary for brood fish. Research shows that improving the management of these refuges can lead to a 20–120 percent increase in fish productivity (per hectare) in rice field fisheries, which are a vital source of fish, income and nutrition for many Cambodian households. FISH research on sustainable management models in Cambodia and Myanmar, and scaling out with partners in other countries with extensive rice field landscapes, will enable sustainable fish-rice systems to be more widely adopted, benefitting many hundreds of thousands of households.

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Citation

This publication should be cited as: CGIAR Research Program on Fish Agri-Food Systems. 2020. CGIAR Research Program on Fish Agri-Food Systems (FISH). Penang, Malaysia: CGIAR Research Program on Fish Agri-Food Systems. Fact Sheet: FISH-2020-02.

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