

THE GLOBAL PROGRAM ON FISHERIES

STRATEGIC VISION FOR FISHERIES AND AQUACULTURE

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Agriculture and Rural Development Department
The World Bank Group



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Fish provides essential nutrition for over one billion people.

...sustainable net benefits are estimated to exceed US\$100 billion per year.

Future fish supplies will be dominated by aquaculture systems.



THE SITUATION

- **Fish provides essential nutrition for over one billion people**, including at least 50 percent of animal protein for 400 million people from the poorest countries.
- **Over 200 million people** in developing countries depend on fisheries and aquaculture for their livelihood.
- Fish products are among the most widely traded foods; **nearly 40 percent (by volume) of world fish production traded internationally.**
- The value of the global **fish trade exceeds the value of international trade in all other animal proteins** combined.
- **Over 75 percent of the world's fisheries** are considered fully or overexploited—leaving little room for increased harvest from wild stocks.
- Habitat degradation in the coastal zone and other critical areas such as coral reefs is reducing carrying capacity and biodiversity.
- **One-half of all food fish supply comes from aquaculture.**
- **Aquaculture is the world's fastest growing food production system, increasing at a rate of 8 percent annually**—but its growth has been fraught by some dramatic boom and bust cycles.
- Potential net gains from good *governance of capture fisheries* are on the order of **US\$50 billion per year** from improvement in production efficiency alone. When market gains are also considered, sustainable net benefits are estimated to **exceed US\$100 billion per year.**
- Good governance of inland and ocean resources will **enhance food security, nutrition, biodiversity, gender equity and community resilience, and mitigate climate change.**
- **Future fish supplies will be dominated by aquaculture systems.**
- Feed conversion rates for many **farmed fish are more efficient** than those of land-based animal production, and aquaculture is an **efficient user of water.**

THE CHALLENGE

The state of global fisheries and aquaculture is characterized by **weak governance**. This results in the development of excessive fishing capacity, overfishing, and a vast loss of wealth. Fish products have also become the object of **extensive international trade**, most of it from poor countries to wealthier ones. Today, a substantial opportunity presents itself to **recapture lost wealth in capture fisheries and to increase supply from aquaculture systems**. Capitalizing on this opportunity can create livelihood and improve food security and nutrition for hundreds of millions of people. It can also increase our ability to adapt to climate change.



Well-managed fisheries and aquaculture can create **wealth**, increase **food security**, improve **nutrition** and make coastal communities more adaptive to **climate change**.

THE MISSION

In 2010, the World Bank Group Development Committee released its report *New World, New World Bank Group: Post Crisis Directions* articulating a vision to “overcome poverty by supporting an inclusive and sustainable globalization, enhancing growth with care for the environment, and creating individual opportunity and hope.” Consistent with this perspective, the **mission of the World Bank Group's Global Program on Fisheries** (PROFISH) is to promote and facilitate the contribution that **fisheries and aquaculture** can make to **sustainable economic growth, better nutrition, economic opportunities for women, and poverty reduction**.

Poor governance and environmental degradation of fisheries habitat are primary causes of overexploited, unsustainable fisheries and poverty in fishery-dependent communities. Improved governance can result in sustainable wealth creation.

Aquaculture is the source of a new and rapidly growing fish supply, offering a range of important economic opportunities. Like any rapidly growing industry, aquaculture also faces serious challenges. It has experienced ‘boom and bust’ cycles and environmental problems. However, with improved governance, thoughtful planning and access to information, technology and capital, aquaculture can overcome these problems.

Well-managed fisheries and aquaculture can create **wealth**, increase **food security**, improve **nutrition** and make fishing and coastal communities more adaptive to **climate change**. Therefore, PROFISH will:

- **Design and implement good governance systems through World Bank investments and international partnerships.**
- **Provide information, knowledge products and expertise to help ensure that fisheries and aquaculture create sustainable wealth and reduce poverty.**

The World Bank Group is unique among the international institutions which are engaged in global fisheries in that it is a source of leveraged funding. It also enjoys access to high-level policy makers, public officials, and development planners whose decisions bear upon the governance of the fisheries industry. The institution has unrivalled convening power, bringing government officials, donors, and stakeholders together in consultation. World Bank staff have a proven record of working across sectors and of reaching out to the private sector and other organizations to form strategic partnerships.



Raise Productivity—

Aquaculture has the greatest opportunity for increased growth in supply and production efficiency improvement. Large and sustainable economic gains can result from **better governance in capture fisheries** through controlling the 'open access' problem.



THE WORLD BANK GROUP'S ACTION PLAN: How Do Fisheries and Aquaculture Fit In?

In 2009, the World Bank Group developed an Action Plan for Agriculture and Rural Development (The World Bank Group, 2009. *Implementing Agriculture for Development*).

The plan is organized around five focal areas:

- 1) Raise productivity,
- 2) Link producers to the market,
- 3) Reduce risk and vulnerability,
- 4) Facilitate entry & exit, and
- 5) Enhance environmental services and sustainability.

Furthermore, the report, *New World, New Bank Group: Post Crisis Directions* (2010) emphasized the need for renewed effort in responding effectively to complex global interactions, promoting environmentally and socially sustainable development and managing risks and anticipating potential shocks. The relevance of these focal areas for the rural economy and poverty reduction is clear; however, the importance of fisheries and aquaculture in this agenda is understated. In addition to agriculture's five focal areas, both capture fisheries and aquaculture require greater emphasis on governance due to the common property nature of fisheries, aquaculture externalities, national and international ocean management issues and the linkages between fiscal issues and sustainable management of fisheries. Consider the following:

Raise Productivity

- **Aquaculture has the greatest opportunity** for increased growth in supply and production efficiency improvement compared to other agricultural production systems.
- **Many future innovations** in food production **will be related to aquaculture**—especially in feed, disease and genetic innovations.
- Aquaculture productivity will be enhanced by secure **land and water tenure**.
- Large and sustainable economic gains can result from **better governance in capture fisheries** through controlling the 'open access' problem.
- Well-defined **rights are necessary** for enabling gains in fisheries and aquaculture sustainability and wealth creation.
- Increased fishery and aquaculture productivity will result in **better nutrition**, especially for children and pregnant woman.





Link Producers to the Market

- Seafood is the **most globally traded protein** commodity by volume and value.
- Seafood trade between developed and less-developed economies is critically important for **food security**.
- Seafood markets are often inefficient and need to become more transparent.
- Improving markets will help improve the status of women who are generally more involved with marketing and processing.
- **Waste** in the value chain, from harvest through processing and distribution, needs to be reduced.
- **Value addition** offers major employment and economic growth opportunities, especially in developing countries. For example, China is now the 'processor' and 'kitchen' for much of the world's seafood.
- The increasing purchasing power of **emerging economies** will change the pattern of global fisheries and aquaculture supply and demand, potentially undermining fish food security in the poorest nations.

Reduce Risk and Volatility

- Fisheries, and communities that depend on them, face economic and environmental risks from **poorly designed management systems, illegal fishing and/or failed implementation**.
- Fisheries and aquaculture are subject to high price and harvest *volatility*; this undercuts food security, limits the industry's ability to obtain capital and impairs **product development**.
- Fisheries, and communities that depend on them, are on the front line of **climate change** and are highly **vulnerable** to sea-level rise.
- Fishing is one of the world's most **dangerous livelihoods**.
- **Disease** outbreaks can result in catastrophic loss in aquaculture.
- The **safety of seafood consumption** is a growing concern.
- **Insurance** for fishing vessels or aquaculture operations (and social security for fishers) is poor or non-existent in developing countries.
- Access and harvest **rights are often temporary, insecure and informal** in fisheries and aquaculture.

Link Producers to the Market—

Seafood trade between developed and less developed economies is critically important for **food security**.

Reduce Risk—

Fisheries and communities that depend on them are on the front line of **climate change** and highly **vulnerable** to typhoons, floods, sea-level rise and tsunamis.

Reduce Risk—

Disease outbreaks can result in catastrophic loss in aquaculture.

Facilitate Entry & Exit— *Investment in labor and human capacity*

can create alternative economic opportunities in aquaculture, post harvest activities and other sectors.

Well-managed fisheries can be sustainable and resilient in the face of climate change and other external shocks.

Shellfish aquaculture (e.g., clams, mussels and oysters) can ***improve environmental quality and produce valuable protein without direct feeding.***



Facilitate Entry & Exit: Improve Rural Investment Climate

- **Investment in labor and human capacity** (rather than capital) can create alternative economic opportunities in aquaculture, post-harvest activities and other sectors.
- **Access to finance**, including credit and microcredit, can facilitate entry and exit.
- Ill-designed and poorly applied aquaculture and fishery **regulations** undermine adaptive behavior access to financing.

Enhance Environmental Services and Sustainability

- **Well-managed fisheries can be sustainable and resilient in the face of climate change** and other external shocks. They also create wealth and economic growth for dependent fishing and coastal communities.
- **Improved governance** of both capture fisheries and aquaculture will help ensure improved environmental health and economic growth.
- Aquaculture can **enhance wild fisheries**, help with the recovery of fish stocks and improve *biodiversity*.
- **Aquaculture and land use can be integrated** to improve efficiency and reduce environmental impacts.
- **Wetlands and coastal habitats** can be restored to help mitigate the impacts of climate change and improve fishery productivity.
- Private or collective management of ecosystem services, through the use of market incentives, has the potential to promote sustainability and create economic benefits.
- Aquaculture may offer opportunities for **carbon sequestration and carbon finance**.
- Shellfish aquaculture (e.g., clams, mussels, oysters and scallops) can **improve environmental quality and produce valuable protein without direct feeding**.



**Better fishery
governance using
well-designed rights
and responsibilities.**

**Best practices
for fisheries and
aquaculture.**

**Understand
pathways to reform.**

WHAT IS OUR VISION FOR FISHERIES & AQUACULTURE?

PROFISH has had considerable success in generating valuable knowledge products to define the importance of reforming governance of fisheries and the potential economic benefits from doing so, such as: *The Sunken Billions: The Economic Justification for Fisheries Reform* (2009), *The Political Economy of Natural Resource Use: Lessons for Fisheries Reform* (2010), *From Drain to Gain in Capture Fisheries Rents* (2010), *Rising to Depletion* (2009) and *Changing the Face of the Waters: The Promise and Challenge of Sustainable Aquaculture* (2007).

PROFISH is working through the World Bank Group to turn these products into action by directly supporting fisheries governance reforms in a number of selected countries. The PROFISH group is actively providing cross support for the World Bank Group's regional programs and engaging in international partnerships, especially with FAO, OECD, Worldfish, NEPAD, development organizations and the private sector. More specifically, the group is active in the design, evaluation and implementation of better fisheries governance. Investing in fisheries governance (especially policy development, legal frameworks and institutional arrangements) will create an enabling environment for investments in sustainable fisheries management and development. With sound governance, technical fisheries and initiatives, organizations are likely to be much more successful than they have been in the past. These governance issues are much wider than just fisheries. Fisheries governance arrangements, therefore, often need to be addressed in a broader institutional context. This is part of the Bank's comparative advantage.

To date, most of this effort has been focused on capture fisheries management. Since the creation of PROFISH in 2005, the World Bank Group has steadily increased its investments in the fisheries sector. More recently, the Bank has expanded its expertise in aquaculture, markets, value chains and international trade. The strengthened program on fisheries and aquaculture will be flexible and adaptive in its approach and the work will:

- Define policy frameworks for economic growth, poverty reduction, food security and climate change resilience,
- Develop and apply reform pathways and build partnership support,
- Define and apply best practice business models,
- Design and evaluate market systems and,
- Develop and apply metrics for monitoring and evaluation.



Evaluate **country, species and technology-specific business** models for aquaculture and fisheries.

Evaluate **international trade policy**.

Develop measurement tools and indicators for project assessment and cross-country comparison.



1. Define Policy Frameworks for Economic Growth, Poverty Reduction, Food Security, Gender Equity, and Climate Change Resilience

- Create sustainable wealth through **better fishery governance using well-designed rights and responsibilities and regulatory reform**. This will strengthen food security and improve nutrition and climate change resilience.
- Help define **best practices** for fisheries and aquaculture.
- Understand **aquaculture-fishery interactions and integrated landscapes**—agriculture, land, water and energy.
- Work with members of regional fisheries management organizations (RFMOs) and nations with high-seas fisheries fleets to achieve better governance in areas beyond national jurisdictions.

2. Develop and Apply Reform Pathways

- Identify successful **pathways to reform** in fisheries—What works?
- **Develop partnerships** with countries and organizations to successfully implement practical approaches and pathways to fisheries reform.
- Understand bottlenecks, the political economy, **catalysts and constraints** to fisheries reform.
- Determine the economic costs and benefits of reform.
- Clarify the role of the public and private sectors in sustainable wealth creation in the fisheries and aquaculture sectors.

3. Define and Apply Best Practice Business Models for Fisheries and Aquaculture

- Evaluate country, species and technology-specific business operations.
- Advise on the best organizational designs.
- Determine the appropriate enterprise scale.
- Help community, corporate and cooperative systems work efficiently.





- Design and help implement incentive mechanisms to encourage sustainable and profitable business practices.
- Help strengthen enforcement capabilities.

4. Design and Evaluate Market Systems

- Help fish-dependent communities gain market access.
- Help implement market systems to increase transparency and efficiency.
- Understand value chains to determine the potential for increased earnings, especially for women, and reduced waste.
- Better understand the **distribution** of returns throughout the chain.
- Design markets and economic incentives for **valuing ecosystem services**.
- Evaluate how **international trade policy, tariff and non-tariff barriers** influence the economic growth of developing economies.
- Work to **eliminate market distortions** and perverse incentives.
- Understand how **traceability requirements, eco-labeling and certification** schemes influence the market and opportunity for fishery- and aquaculture-dependent communities in developing countries.

5. Develop and Apply Robust Metrics for Monitoring and Evaluation

- Develop **measurement tools and indicators** for project assessment and cross-country comparisons.
- Identify and measure **factors enabling sustainable wealth** creation in fisheries and aquaculture.
- Measure **economic sustainability**.
- Measure **environmental sustainability**.
- Measure **social and community sustainability**.





PARTNERSHIPS

The World Bank Group's program in fisheries and aquaculture will continue to work with and strengthen our partnerships with **FAO**, **OECD** and **Worldfish**. It is not possible to address all of the issues without cooperation. FAO and Worldfish technical expertise and databases are essential for evaluation and implementation of fisheries and aquaculture best practices. We expect to work to develop more clearly defined responsibilities through possible MOU's and contracts.

PROFISH will actively strengthen its **cooperation within the World Bank Group**. The strong cross support for the Africa region is also required in East Asia and the Pacific and South Asia, which is currently engaging in large fisheries and aquaculture investment. There are also projects in Central and South America, the Mediterranean area and Eastern Europe which involve fisheries and aquaculture, but, to date, have had little support from PROFISH. We must also improve our engagement with the environmental groups within the Bank. The Bank's legal group (LEGEN) has given the fisheries program substantial support, and we expect that to continue and become more important to our mission.

The Strategic Partnership for Fisheries in Africa. PROFISH and the World Bank Group are collaborating with the Global Environment Facility (GEF), to: (i) establish and implement a line of funding to co-finance country-level investments in sustainable fisheries in Africa and (ii) support a Strategic Partnership to promote fisheries governance reforms throughout the continent, led by the African Union and supported by FAO and WWF. To date, the initiative has supported some \$30 million in GEF co-financing for sustainable fisheries investments in Africa. Similarly, the African Union has established a Fisheries Unit and fisheries capacity and is working with governments and partners to promote fisheries reforms throughout Africa.

The **New Partnership for Africa's Development** (NEPAD) and the Partnership for African Fisheries (PAF). PROFISH is collaborating with NEPAD through the Partnership for African Fisheries. PAF was established in 2009 with funds from the UK Department of International Development (DFID). The overarching PAF objective is to derive a politically led, comprehensive African fisheries reform strategy. PAF principles center on enabling an incremental contribution by African fisheries to local economies and food security. PROFISH's engagement with PAF has been extremely productive, both at the country level (focused initially on policy scenario analysis and consultations in Ghana) and on global goods work. The latter has focused on the political economy of fisheries reform and aid effectiveness. PROFISH expects to continue and strengthen these links.

ALLFISH. ALLFISH was established in 2009 as a public-private partnership by the seafood industry, working in partnership with the International Coalition of Fisheries Associations (ICFA), The World Bank Group, FAO and the Global Environment Facility (GEF). ALLFISH enables seafood industry organizations to work together with policymakers to promote responsible fisheries and aquaculture, particularly in developing countries. ALLFISH provides a platform for stakeholders to collaborate on issues of common interest, including good fisheries governance, sustainable fishing and aquaculture practices, ecosystem preservation and responsible marketplace actions.

The **Coalition for Sustainable Integrated Aquaculture.** This proposed partnership will enhance the delivery of environmental and social goods and services from aquaculture integrated into sustainable landscapes to reduce poverty through job creation and economic growth in rural communities, increase fish supplies and earnings for the poor and improve economic and ecological efficiency of food production at enterprise and landscape levels.





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Recent World Bank Publications:

Agriculture for Development. 2008.
Changing the Face of the Waters: The Promise and Challenge of Sustainable Aquaculture. 2007.
Gender in Fisheries and Aquaculture in Gender in Agriculture Sourcebook. 2009.
Political Economy of Natural Resource Use: Lessons for Fisheries Reform. 2010.
The Sunken Billions: The Economic Justification for Fisheries Reform. 2009.
Where is the Wealth of Nations? Measuring Capital for the 21st Century. 2006.

World Bank's Global Program on Fisheries website:

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