Advancing aquatic food systems for prosperity and well-being
Blue Transformation aligns with the Strategic Framework 2022-2031 of the Food and Agriculture Organization of the United Nations (FAO) and the 2021 Declaration for Sustainable Fisheries and Aquaculture of the FAO Committee on Fisheries to maximize the contribution of aquatic food systems to the Sustainable Development Goals (SDGs).
Food is a daily necessity and a fundamental human right. Yet 800 million people are undernourished today, and three billion people around the world cannot afford a healthy diet. Others eat too much and, too often, the wrong kind of food. While hunger and malnutrition today affect the poorest and the most vulnerable in many parts of the world, obesity and micronutrient deficiencies are also widespread in developed countries. Our food systems are fragile, and they are failing to deliver healthy, sustainable, and equitable diets for all.

A demand for change
Global population growth, economic development and urbanization have led to an increased demand for food and high quality protein and nutrients, and a shift in dietary preferences, based on more resource-intensive food systems. The impacts of a changing climate, the COVID-19 pandemic, and environmental degradation, have compounded these challenges, placing further strain on our food systems. These facts underscore the need for immediate action.

The cost to our health and to the planet cannot be ignored: Our current food systems are responsible for over one-third of greenhouse gas emissions, use up to 70 percent of the planet’s freshwater, and are responsible for significant biodiversity loss.

Public pressure is mounting as people around the world recognize the urgent need for a new approach. The commitment made by the United Nations Food Systems Summit to transform our food systems, reflects this growing demand.

We must change the way we produce, process, trade and consume our food, with sustainability at the core of this transformation.

A powerful solution
Aquatic foods hold incredible potential to improve nutrition and address food security challenges due to their high nutritional value. They are a unique provider of omega-3 fatty acids and bioavailable micronutrients. Their large biological diversity, the greater efficiency of their production systems, their lower environmental footprint and lower greenhouse gas emissions, compared to land-based animal production systems, underpin these expectations.

Aquatic foods are also more accessible to many vulnerable communities, while supporting the lives and livelihoods of those communities that depend on ocean, rivers, lakes, and their resources.
But, if we want aquatic food production to contribute to nature-friendly and sustainable food systems, transformation is essential.

To create a genuine Blue Transformation, we need appropriate technical solutions, adequate policies and innovative partnerships that will support and advance long-term sustainable development.

Promising practices and techniques are already in place. These can be leveraged to end hunger and malnutrition, while buffering the impacts of climate change and building equitable and resilient solutions.

Blue Transformation

A vision for the transformation of aquatic food systems for better production, better nutrition, a better environment, and a better life for all.
Blue Transformation outlines a vision to expand aquatic food systems and increase their contribution to nutritious and affordable healthy diets, ensuring environmental stewardship and inclusive growth, especially for those communities that depend on fisheries and aquaculture. Leaving no one behind.

Blue Transformation is committed to providing:

**An equitable future.** Sustainable aquatic food systems can respect the rights and incomes of dependent communities and ensure more equitable outcomes.

**A pledge for resilience.** Sustainable aquatic food systems help address human and environmental impacts on aquatic resources, such as biodiversity loss or the climate crisis.

**A practical solution.** Sustainable harvesting and production of aquatic food provide people with affordable nutrition while producing relatively low emissions and environmental impacts.

**A healthy solution and a lifestyle choice.** Aquatic foods can improve human health by reducing micronutrient deficiencies and providing healthy diets while maintaining a low environmental footprint.

**Guiding principles for Blue Transformation**

A Blue Transformation process must follow a core set of guiding principles that underpin any action/programme or initiative stemming from this vision. These follow principles approved by FAO Members in the FAO’s Strategic Framework (2022-2031), the Code of Conduct for Responsible Fisheries, the Voluntary Guidelines on the Governance of Tenure, the Voluntary Guidelines for Securing Sustainable Small-Scale Fisheries, and the Global Sustainable Aquaculture guidelines, and are aligned with the 2021 Declaration for Sustainable Fisheries and Aquaculture of the FAO Committee on Fisheries.
FAO has adopted a roadmap to help translate the Blue Transformation vision into action. This roadmap provides a framework for planning, implementing, and monitoring activities related to aquatic food systems, from production to consumption. It is a commitment to drive and achieve tangible results, in support of sustainable and inclusive ocean and freshwater economies.

## BLUE TRANSFORMATION ROADMAP

### AQUACULTURE

**Objective:** Sustainable aquaculture intensification and expansion satisfies global demand for aquatic food and distributes benefits equitably

**Targets:**
- Effective **global and regional cooperation, planning and governance** enhance aquaculture development and management
- Innovative technology and management support the expansion of sustainable and resilient aquaculture systems
- Equitable **access to resources and services** delivers new and secures existing aquaculture-based livelihoods
- **Aquaculture operations** minimize environmental impact and use resources efficiently
- Regular **monitoring and reporting** of the growth and the ecological, social and economic impacts of aquaculture development

### FISHERIES

**Objective:** Effective management of all fisheries delivers healthy stocks and secures equitable livelihoods

**Targets:**
- Effective **policies, governance structures and institutions** support fisheries
- Equitable **access to resources and services** enhance the livelihoods of fishers and fish workers
- Effective **fisheries management systems** address ecological, social and economic objectives, while considering trade-offs
- **Fishing fleets** are efficient, safe, innovative and profitable

### VALUE CHAINS

**Objective:** Updated value chains ensure the social, economic and environmental viability of aquatic food systems

**Targets:**
- Efficient **value chains** that increase profitability and reduce food loss
- Transparent, inclusive and gender-equitable **value chains** support sustainable livelihoods
- Fisheries and aquaculture products access **international markets** more effectively
- Increased **sustainable consumption of sustainable aquatic food**, particularly in areas with low food and nutrition security
- Increased **access to healthy, safe and high quality aquatic food**
Blue Transformation is anchored in three quantifiable objectives:

**Aquaculture**

**Promoting the sustainable intensification and expansion of aquaculture to respond to the growing global demand for aquatic foods and to distribute benefits equitably.**

**Expected outcomes**
- Sustainable aquaculture production grows by at least 35 percent by 2030, especially in food deficit regions.
- Growth in the sector creates employment and skills that improve income and livelihoods.
- Full and productive employment and decent work for men and women is achieved by 2030.

**Selected priority actions at a glance**

- support **global, regional and national governance** frameworks and policies that enable sustainable aquaculture development and attract financial investment;
- promote the development and implementation of **digital, technological and management innovations** in the sector;
- minimize the **environmental impacts** of aquaculture operations and increase preparedness and adaptations to **natural disasters, crises and emergencies**, including those arising from climate change;
- build capacity and support small and medium-scale fish farmers’ **access to finance, knowledge, data and information** for the development of profitable aquaculture enterprises that maximize social and economic benefits;
- promote **women and youth employment** in aquaculture; and
- ensure appropriate **biosecurity, disease control and aquatic health management** at local, national and global levels.
Fisheries

Ensuring the sustainable and effective management of all fisheries to deliver healthy stocks, restore ecosystems and secure equitable livelihoods for all.

Expected outcomes
• One hundred percent of marine and inland fisheries are placed under effective management.
• All illegal, unreported and unregulated activities are phased out.
• Full and productive employment and decent work in the fisheries sector is achieved for women and men by 2030.

Selected priority actions at a glance
• facilitate adoption and effective implementation of international instruments, regional mechanisms, and guidelines in support of fisheries sustainability;
• promote the implementation of effective management systems to achieve ecological, social and economic sustainability, support biodiversity conservation, strengthen climate change adaptation and build resilience to stressors;
• support responsible governance of tenure to ensure sustainable and equitable access to fisheries, land and water resources;
• increase capacity and inclusive access to social protection, decent working conditions, and safety at sea for fishers and fish workers;
• ensure growing participation of women and youth in fisheries-related decision-making processes and their access to leadership, technologies, information, resources, and infrastructure; and
• support and enhance safety standards for fishing vessels and enhance technical innovations to enhance their economic viability, and reduce ecosystem impacts.
Value chains

Supporting the upgrading of aquatic value chains to improve the social, economic, and environmental outcomes of aquatic food systems.

Expected outcomes

- Global per capita consumption of aquatic foods is significantly increased, especially in the Global South.
- Food loss and waste in the sector is reduced by half by 2030.
- Exporters in developing countries comply with import requirements by major import countries.
- All forms of discrimination and abuse against women, young people and men throughout the value chains are eradicated.

Selected priority actions at a glance:

- support the development and implementation of policies and regulatory frameworks that secure inclusive value chains;
- promote practices, processes, and technologies that reduce fish loss and waste, improve post-harvest processes and reduce environmental impacts;
- increase capacity of small and medium enterprises in the Global South to access regional and international markets, with emphasis on equitable participation and outcomes;
- promote aquatic foods as part of a healthy diet and ensure their inclusion in food security and nutrition policies, strategies and programmes;
- increase capacity to improve national and local food control and food safety management and harmonize regional regulatory frameworks; and
- ensure fair and equitable employment for women and youth in inclusive fish value chains.
Now is the time to act decisively and collectively.

FAO estimates that implementing Blue Transformation could increase the per capita consumption of sustainable aquatic foods by 25 percent by 2050. However, failure to transform could see a 10 percent reduction, placing land-based food systems under increasing pressure.

FAO is in a prime position to drive Blue Transformation by harnessing science-based solutions and initiating policy dialogue on aquatic systems that will create a world in which responsible and sustainable use of fisheries and aquaculture resources makes a genuine contribution to human well-being, food security and poverty alleviation.

However, FAO cannot do this alone. Blue Transformation requires a commitment from international partners, national and local governments, civil society, and the private sector, to work together towards sustainable and more resilient aquatic food systems. With the right approach and united action, we can make a meaningful difference.

By rethinking our aquatic food systems, we can pave the way for a brighter future, where our actions align with the needs of both present and future generations.

Join Blue Transformation and be part of this transformative journey. Together, let’s unlock the full potential of aquatic food systems, ensuring healthy diets, resilient ecosystems, and a better future for all.
BY 2030
EFFICIENT, INCLUSIVE
RESILIENT AND
SUSTAINABLE AQUATIC
FOOD SYSTEMS
## Objectives and targets of the Blue Transformation roadmap.

### Aquaculture

#### Objective

Sustainable aquaculture intensification and expansion satisfies global demand for aquatic food and distributes benefits equitably.

#### Outcomes

- At least 35 percent growth in global sustainable aquaculture production by 2030.
- Growth in aquaculture employment and skilled labour improves income and livelihoods.
- Achieve full and productive employment and decent work in the aquaculture sector for all women and men by 2030.¹

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**Target A1. Effective global and regional cooperation, planning, and governance enhance aquaculture development and management**

**Priority actions:**

- develop guidance and instruments on **good aquaculture practices** (GAPs);
- support development and implementation of **national, regional and global governance** processes that enable sustainable aquaculture development, facilitate financial investment and integrate the aquaculture sector in cross sectoral policies and plans;
- facilitate the development of **policies related to small-scale aquaculture** and support their integration in global, regional and national development agendas;
- promote governance frameworks to increase preparedness to reduce impacts from and support rehabilitation of the aquatic food sector after **natural disasters, crisis and emergencies**; and
- encourage responsible **governance of tenure** to ensure inclusive, sustainable, secure and equitable access to land and water resources for those engaged in aquaculture.

¹ Based on SDG Target 8.5
Target A2. Innovative technology and management support the intensification and expansion of sustainable and resilient aquaculture systems

Priority actions:
- facilitate the development of innovative operations and climate-smart aqua-business;
- facilitate investment in digital, technological and management innovations, particularly in areas with high aquaculture development potential;
- support appropriate application of technologies to promote sustainable use and development of genetic resources to improve supply of quality seed for enhanced production efficiency;
- upscale and transfer successful examples of aquaculture intensification and expansion through South-South and Triangular cooperation programmes and public-private partnerships; and
- facilitate the implementation of innovative data collection and management systems at local, regional and global scales.

Target A3. Equitable access to resources and services delivers new and secures existing aquaculture-based livelihoods

Priority actions:
- support small and medium-scale fish farmers’ access to financing, knowledge, data and information for the development of profitable aquaculture enterprises that maximize social and economic benefits and minimize environmental impacts;
- ensure a growing participation of women in aquaculture related decision-making processes, and accelerate their access to leadership, technologies, information, resources, and infrastructure;
- promote women and youth employment in aquaculture;
- provide organizational, technical and business skills for small and medium-scale fish farmers, ensuring inclusion of marginalized and vulnerable people; and
- enhance small and medium-scale aquaculture communication, advocacy and outreach.

Target A4. Aquaculture operations that minimize environmental impacts and use resources efficiently

Priority actions:
- facilitate the implementation of sustainable aquaculture practices that support biodiversity, facilitate ecosystem restoration and the delivery of ecosystem services, strengthen climate change mitigation and adaptation and build resilience to stressors;
- support the development of climate and disaster resilient aquaculture infrastructure;
- facilitate the efficient, diverse and nature-positive use of inputs and resources (e.g., water and feed); and
- increase capacity on biosecurity, disease control and aquatic health management at local, national and global levels.

Target A5. Regular monitoring and reporting of the state and the ecological, social, and economic impacts of aquaculture development

Priority actions:
- support climate-smart monitoring and reporting of aquaculture interactions with ecosystems, particularly in vulnerable habitats;
- facilitate monitoring and reporting of social impacts of aquaculture, including gender specific impacts and trends;
- facilitate monitoring and reporting of aquaculture performance, focused on aquaculture enterprises, social equity and on data and capacity poor situations; and
- develop and promote indicators of aquaculture sustainability.
Target F1. Effective policies, governance structures and institutions support fisheries

Priority actions:
- facilitate adoption and effective implementation of new and existing international instruments, regional coordination mechanisms, plans of action and guidelines;
- support responsible governance of tenure to ensure inclusive, sustainable, secure and equitable access to fisheries, land and water resources;
- facilitate the development of organizational, technical and business skills of small-scale food producers, their organizations and institutions for equitable and effective participation in decision-making processes, resource management and value chain development; and
- support the integration of fisheries related policies in global, regional and national development agendas (cross-sectoral, multi-risk, food systems).

Target F2. Equitable access to resources and services enhances the livelihoods of fishers and fish workers

Priority actions:
- increase capacity and inclusive access to social protection, decent working conditions, and safety at sea of fishers and fish workers;
- ensure a growing participation of women in fisheries related decision-making processes and their access to leadership, technologies, information, resources, and infrastructure;
- promote women and youth employment in fisheries; and
- facilitate access of fishers and fish workers to financing and insurance services, knowledge and data to encourage responsible fishing practices and support equitable distribution of benefits from aquatic resources.

1 The term “fisheries management” as used in this document implicitly accepts the ecosystem approach to fisheries (EAF) as a principle inherent in fisheries management. While EAF is not explicitly referred to in the document, its principles and requirements are considered critical to the delivery of Blue Transformation.

2 Based on SDG Target 8.5
Target F3. Effective fisheries management systems address ecological, social and economic objectives, and consider trade-offs

Priority actions:
- facilitate the development of innovative data and information systems to support fisheries policy formulation, assessment and management advice;
- facilitate regular monitoring and reporting on the state of fisheries and the impacts of management interventions across ecological, social and economic dimensions;
- support the development and implementation of fisheries management plans, strategies and measures that consider trade-offs and address ecological, social and economic objectives, particularly in capacity-limited and data-limited systems; and
- promote the implementation of fisheries management measures that support biodiversity, facilitate ecosystem restoration, strengthen climate change adaptation and build resilience to stressors.

Target F4. Fishing fleets are efficient, safe, innovative and profitable

Priority actions:
- facilitate the development of data and information on the techno-economic performance and profitability of fleets;
- support and enhance safety standards for fishing vessels;
- support preparedness to and effective rehabilitation of fishing infrastructure after natural disasters, crisis and emergencies; and
- support and enhance technical innovations in fishing operations to enhance their economic viability, and reduce ecosystem impacts.
Value chains

Objective

Upgraded value chains ensure the social, economic and environmental viability of aquatic food systems.

Outcomes

- Significantly increase in global per capita fish consumption, especially across Global South.
- Reduce global fish loss and waste by half by 2030.4
- Current and potential exporters in developing countries can comply fully with import market requirements of major import countries.
- All forms of discrimination and abuse against women throughout the value chain phased out.5

Target V1. Efficient value chains that increase profitability and reduce food loss

Priority actions:

- promote and support the development of diverse practices and processes to reduce fish loss and waste;
- add value and increase consumption through promotion of fish processing, co-products, and bycatch use;
- facilitate compliance with instruments addressing post-harvest issues or trade at a global, regional or national level.
- promote resilient, efficient and inclusive processes for value addition of fisheries and aquaculture products.
- promote governance frameworks to increase preparedness to, reduce impacts from and support rehabilitation of the aquatic food value chains after natural disasters, crisis and emergencies; and
- facilitate uptake of novel technologies to improve post-harvest processes and reduce environmental impacts.

Target V2. Transparent, inclusive and gender-equitable value chains support sustainable livelihoods

Priority actions:

- enhance socio-economic data collection along the value chain, including on gender and vulnerable groups;
- ensure a growing participation of women in value chain related decision-making processes, and accelerate their access to leadership, technologies, practices, resources, and infrastructure to enhance equal distribution of benefits;
- promote women and youth employment in fish value chains;
- support the development and implementation of policies and regulatory frameworks that secure inclusive value chains;

4 Based on SDG Target 12.3
5 Based on; SDG 5 targets 1 and 2
• facilitate access to **market information** along the value chain; and

• increase **gender-responsive interventions** to ensure gender equality and women’s empowerment in the value chain, taking effective action against discrimination and abuse.

**Target V3. Fisheries and aquaculture products access international markets more efficiently**

**Priority actions:**
• improve data and information on trade and markets to reduce information asymmetries;

• collaborate with international organizations and Conventions on aquatic species issues involving **trade** (e.g., World Trade Organization [WTO], United Nations Conference on Trade and Development [UNCTAD], Convention on International Trade in Endangered Species of World Fauna and Flora [CITES], among others);

• increase capacity to access markets, with a special emphasis on equitable participation and outcomes.

• support the development of **market insertion possibilities** for businesses, including in collaboration with other international organizations, focusing on equitable market access for small-scale actors.

**Target V4. Increased consumption of sustainable aquatic food, particularly in areas with low food and nutrition security**

**Priority actions:**
• promote aquatic foods as part of healthy diets within planetary boundaries;

• facilitate the inclusion of aquatic foods in national food security and nutrition policies, strategies, and programmes; and

• support the development of programs and increase capacity for **data collection and analysis on aquatic food consumption and nutrient composition**.

**Target V5. Increased access to healthy, safe and high quality aquatic food**

**Priority actions:**
• facilitate integration of scientific advice on **food safety and quality** into international instruments such as *Codex Alimentarius*;

• increase capacity to improve national and local food control and **food safety management** and harmonize regional regulatory frameworks;

• increase capacity to improve aquatic **biosecurity and assess disease burden**;

• facilitate prevention of **antimicrobial resistance** in aquatic food systems; and

• facilitate the development of **early warning, risk assessment and emergency preparedness** related to food safety and animal health.