Towards a shared prosperity through aquatic food systems under changing climate

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Our blue planet **IS CHANGING**

Through science, we will help to illuminate sound paths toward a sustainable food systems transformation with aquatic foods and to meet the goals of the 2030 Agenda for Sustainable Development in all three of its dimensions—social, economic and environmental.

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Our Vision

An inclusive world of healthy, well-nourished people and a sustainable blue planet, now and in the future.

Our Mission

To end hunger and advance sustainable development by 2030 through science and innovation to transform food, land and water systems with aquatic foods for healthier people and planet.

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What are AQUATIC FOODS?

Aquatic foods are aquatic animals and plants grown in or harvested in the wild from water for food or feed, and their synthetic substitutes.

Finfish

Shellfish

Aquatic plants

Aquatic feeds

Other aquatic foods

Synthetic substitutes

The big facts **ON AQUATIC FOODS**

204 million tons

The volume of **aquatic food production** by 2030.

$ 264 billion

The value of aquatic food production through **aquaculture** in 2018.

$ 24 trillion

The value of the **ocean economy**, including fisheries, shipping lanes and tourism.

3.3 billion

Number of people getting **20%** of their **animal protein** from eating aquatic foods.

17%

Percentage of all **animal protein** consumed globally that comes from **aquatic foods**.

$ 164 billion

The **global export value** of fish alone in 2018, making aquatic foods among the world's **top traded commodities**.

$ 70 million

The estimated market size of the **plant- and cell-based aquatic food sectors** by 2030.

2 billion

Number of people suffering the **triple burden of malnutrition** who can benefit from the life-changing option of consuming **nutrient-rich** aquatic foods.

1000 days

Aquatic foods are dense in **vitamins** and **micronutrients**, which are essential to cognitive development in the first 1000 **days of a child's life**.

Aquatic foods naturally contain **healthy omega fats** that are difficult to obtain from land-based food sources, such as crops and livestock.

The intake of **omega-3** fatty acids from fish and aquatic foods is associated with **lower risk of cardiovascular disease and obesity**.

When consumed as part of a **balanced diet**, fish can increase the absorption of **essential minerals**, such as iron and zinc, from other foods.

84%

Percentage of global **protein** sourced from the sea that comes from **wild fisheries**.

60%

Percentage of the world's farmed fish in 2018 produced through **inland aquaculture**.

66%

Percentage of **fishstocks** currently within **biologically sustainable** levels, compared to 90% in 1990.

The weight of **ocean plastics** will exceed the weight of all fish by 2050, unless **coordinated multistakeholder actions** to curb plastic pollution are taken.

40%

The estimated decline in **tropical fish catch** globally by 2050, unless actions to curb **CO_2 emissions** are taken.

50%

Percentage of the total global catch from **small-scale fisheries**.

70%

Percentage of the planet that is covered by the **ocean**, which houses 80% of all **life on earth** while **sequestering carbon** and providing **half of the world's oxygen**.

$ 22.5 billion

The annual loss of discarded fish alone.

35% of the global harvest from fisheries and aquaculture is **lost or wasted**.

Production of aquatic foods has a **much lower carbon footprint** and far **fewer biodiversity impacts** compared to production of crops and livestock.

800 million

Number of people around the world who depend on **small-scale fisheries** and **aquaculture** for their livelihoods.

60 millions

Number of people engaged in the primary sector of **fisheries** and **aquaculture** in 2018.

1 in every 2

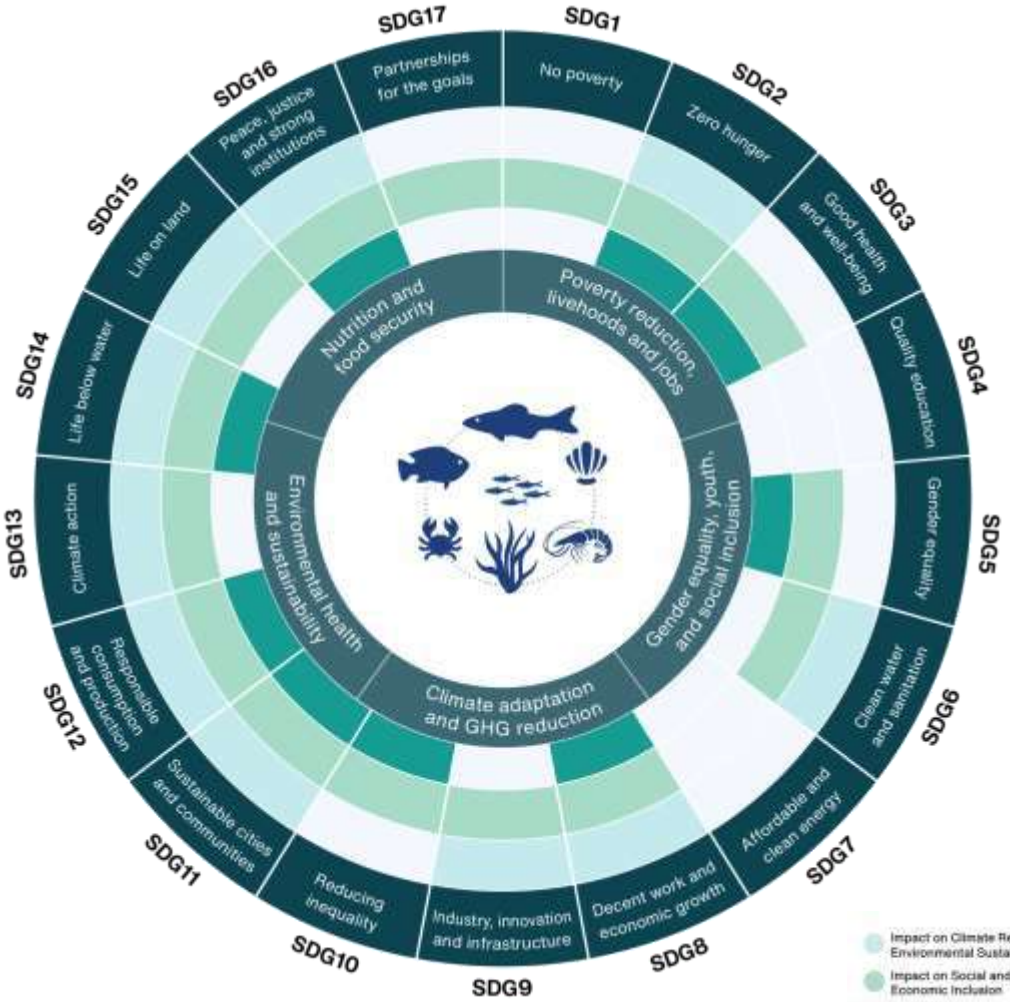
Workers in the primary and secondary sectors of fisheries and aquaculture who are **women**.

They are crucial to aquatic food systems, providing **labor**, **innovative ideas** and **entrepreneurship**.

90%

Percentage of all **small-scale fishers** living in low- and middle-income countries in the Global South.

Source: FAO (2019), Costello et.al (2019), WorldFish (2020)



Tackling global challenges **WITH AQUATIC FOODS**

Aquatic foods, alongside land crops and livestock, are a significant part of the equation for healthy and sustainable diets within our planetary boundaries.

Impact on Climate Resilience and Environmental Sustainability

Impact on Nutrition and Public Health

Impact on Social and Economic Inclusion

One CGIAR Challenges

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Research priorities
FOR ACTION

1. IMPACT: **CLIMATE RESILIENCE AND ENVIRONMENTAL SUSTAINABILITY**
   - 1.1 Enable sustainable production of diverse aquatic foods
   - 1.2 Cut down on loss and waste
   - 1.3 Enhance climate resilience and reduce greenhouse gas emissions

2. IMPACT: **SOCIAL AND ECONOMIC INCLUSION**
   - 2.1 Leave no one behind with an inclusive and people-centered blue economy
   - 2.2 Improve the availability, accessibility and affordability of aquatic foods for all
   - 2.3 Support sustainable livelihoods, decent work and well-being

3. IMPACT: **NUTRITION AND PUBLIC HEALTH**
   - 3.1 Inform consumer demand for healthy and nutritious aquatic foods
   - 3.2 Ensure aquatic foods are safe and healthy for human consumption
   - 3.3 Prioritize nutrition and health for vulnerable and marginalized people

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WHERE we are

WorldFish has a global presence in **20 countries** in **3 continents** with **422 staff** representing **30 nationalities**

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Our AWARDS

THE WORLD FOOD PRIZE

The Tech Awards

TALL POPPY campaign

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DEVELOPMENT MARKETPLACE

Inspire Challenge Winner 2019

Inspire Challenge Winner 2018

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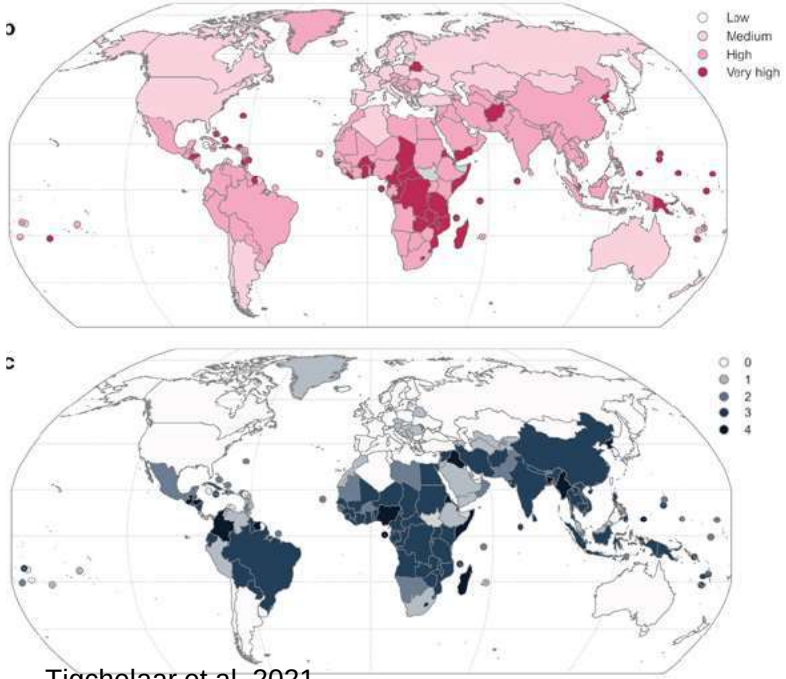
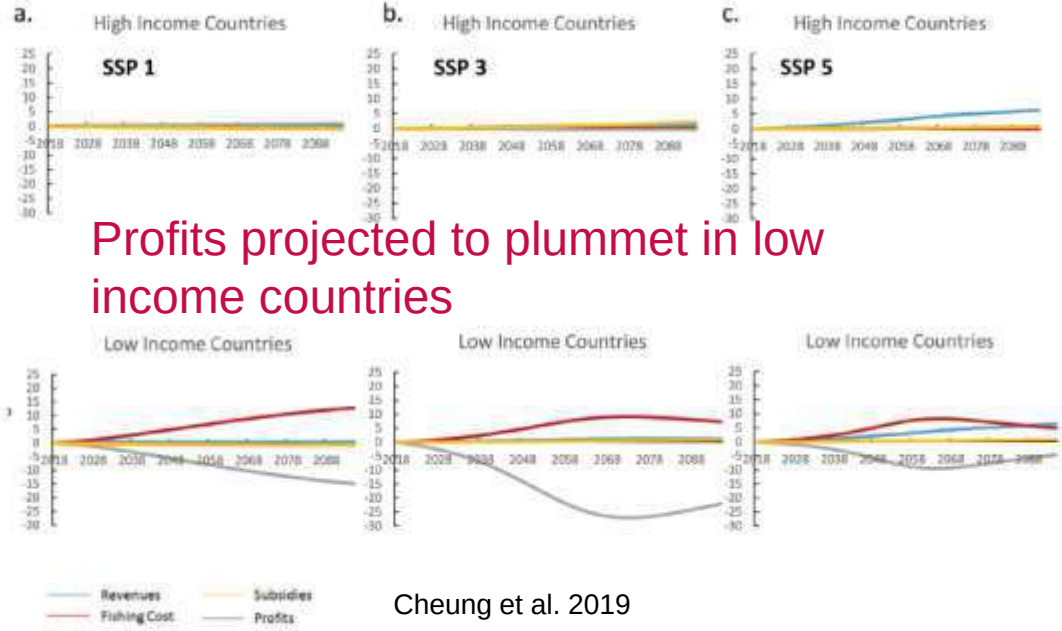
Climate change poses a significant threat to aquatic foods and the people who depend on them.



Tigchelaar et al. 2021



Profits projected to plummet in low income countries

Cheung et al. 2019

UN Climate Change Conference UK 2021

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Can we reverse the trend and realise a prosperous future for all?

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Amartya Sen's 'capabilities for flourishing'

People have to flourish … but how well are people able to function in any given context?

- Are they well nourished?
- Can they take part in the life of the community?
- Do they live long?
- Can they find worthwhile jobs?
- Can they use their school education? Etc.

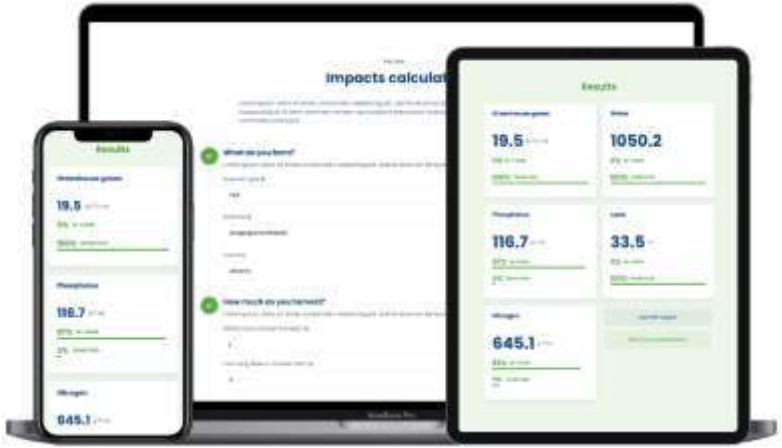
Shared blue prosperity

As both an inclusive and socially just process and outcome through which aquatic ecosystems and the people who depend on them attain their [maximum wellbeing potential]. The realization of shared blue prosperity aspirations requires that both hard (e.g. market places, food processing plants etc.) and soft (e.g. institutions and policies) infrastructures in which they are embedded (1) eliminate systemic barriers that undermine individual and collective wellbeing and capabilities for flourishing (Sen 1984, 1993), creating employment and income opportunities for 'the many' (2) respect ecological boundaries (Raworth, 2012), leading to regenerative aquatic food production systems and (3) ensure that vulnerable individuals or communities benefit disproportionately more than those who are not.

Mitigation opportunities: a low carbon pathway to meet growing demand for food.

- Passive carbon sink
- Aquatic food systems emit much lower GHGs relative to land-based food production systems.
- Egypt: The G9 stain of Tilapia demonstrated up to **36%** reduction in environmental impacts (including GHG emissions).
- The use of low-fuel gear, can reduce GHG emissions in some fisheries by **61%**, while reducing feed usage and switching to deforestation-free inputs can reduce emissions from aquaculture by **50%**.

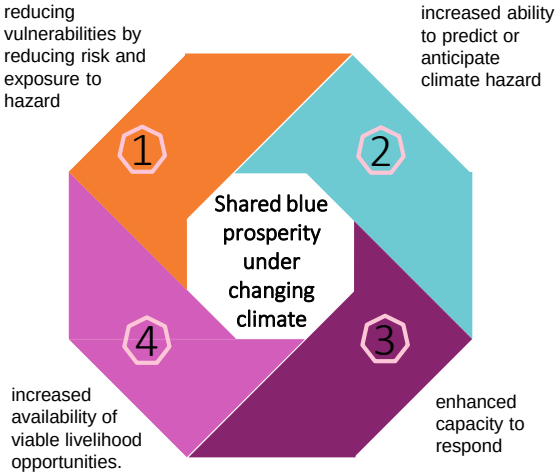
"*If you can't measure it, you can't improve it*."



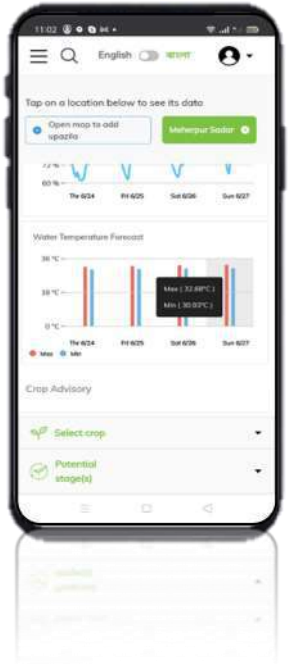
https://fishscores.com/

Investment in hilsa fish restoration yield 9 to 11 times more benefit in Myanmar and Bangladesh respectively.

(i) enhances water and land use efficiency,
(ii) reduces climate-induced risks
(iii) adaptable, for diverse fish species
(iv) helps rehabilitate degraded landscapes,
(v) offers a viable livelihood opportunity under changing climate.



>100,000 fish farmers.
A new web-based interface for authentic, localized, timely, actionable and simple climate information services was developed for fish farmers in Bangladesh



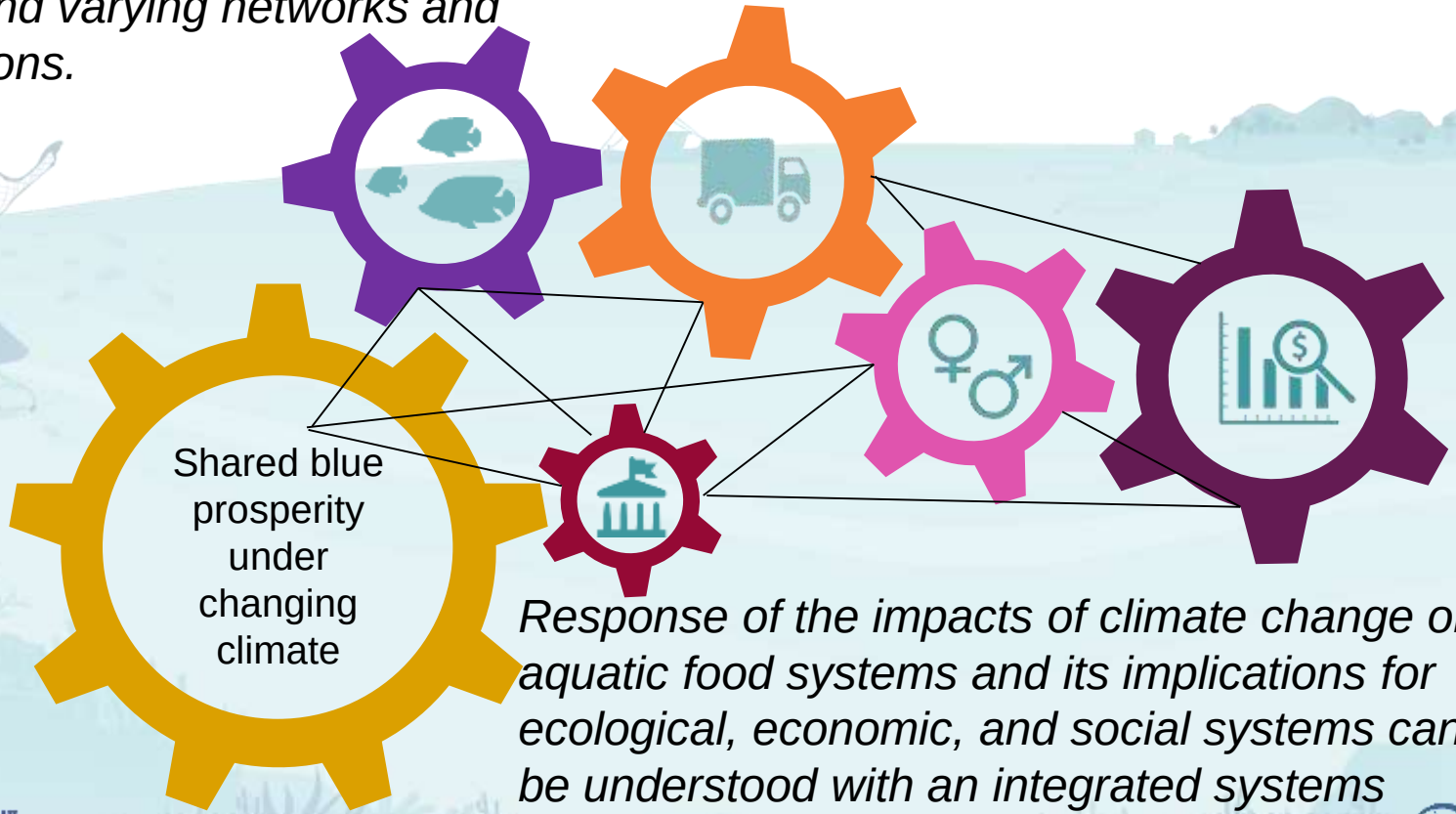
Profit: 11X

Fisheries management at the center of disaster preparedness and relief strategies in **Vanuatu**.

Diverse adaptation skills through seaweed farming in **Bangladesh**


Aquatic food systems offer us a
Sea of opportunities
to turn the tide on climate change and realise a shared prosperity for all

Aquatic food systems are complex non-linear systems which involve multiple actors and varying networks and interactions.



Response of the impacts of climate change on aquatic food systems and its implications for ecological, economic, and social systems can only be understood with an integrated systems approach.

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Call for action

- Make sustainable, nature-positive aquatic foods a key part of **Nationally Determined Contributions.**
- Include aquatic food ecosystems, infrastructure, workers, and assets in **National Adaptation Plans and disaster preparedness and relief strategies.**
- The transition to a low-carbon aquatic food based diets must ensure those who are furthest behind benefit most – ensuring **no one is left behind.**
- Adaptation and mitigation efforts in and through aquatic food systems must be underpinned by **effective governance, predictable finance, social and economic inclusion, eliminating systemic barriers such as access to market and non-market services, and respecting ecological boundaries.**

Thank You