

International Finance Corporations' Approach to Investing in Seaweed in Emerging Markets

IFC's investments in aquaculture operations

Ivan Ivanov
Global Lead Sustainable Protein Advisory
International Finance Corporation

IFC: A Member of The World Bank Group



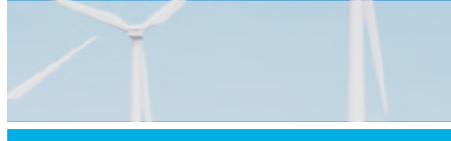
IBRD
International Bank
for Reconstruction
and Development

Loans to middle-income
and creditworthy low-income
country governments



IDA
International
Development
Association

Interest-free loans and
grants to governments
of the poorest countries



IFC
International
Finance
Corporation

← SOLUTIONS IN
PRIVATE SECTOR
DEVELOPMENT →



MIGA
Multilateral
Investment
Guarantee Agency

Guarantees of foreign
direct investment's
non-commercial risks



ICSID
International Centre
for Settlement of
Investment Disputes

Conciliation and
arbitration of investment
disputes

IFC: the largest global development institution focused on the private sector in developing countries

The International Financial Corporation (IFC) is the private sector arm of the World Bank Group, investing in emerging markets since 1956:



More than \$321 billion invested since our founding in 1956



Leveraging the full range of World Bank Group capabilities



AAA credit rating; owned by 185 countries



Provides investment, advice, resource mobilization



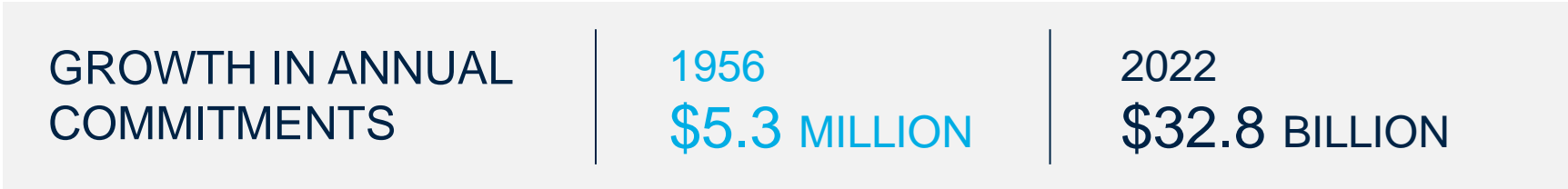
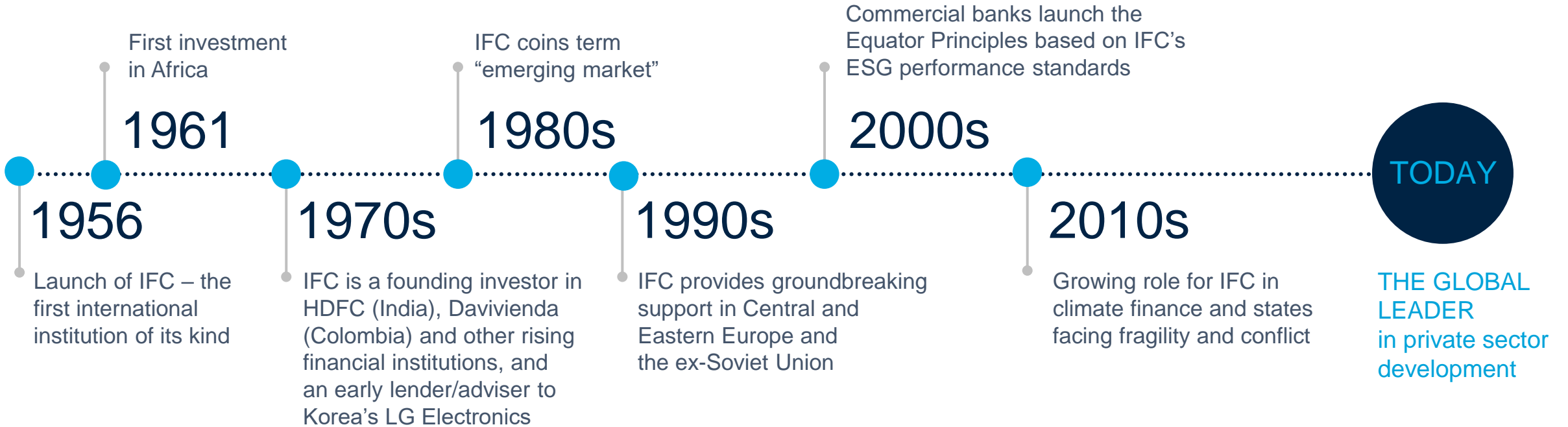
Offices in nearly 100 countries

Mobilizing the Private Sector & Creating Markets

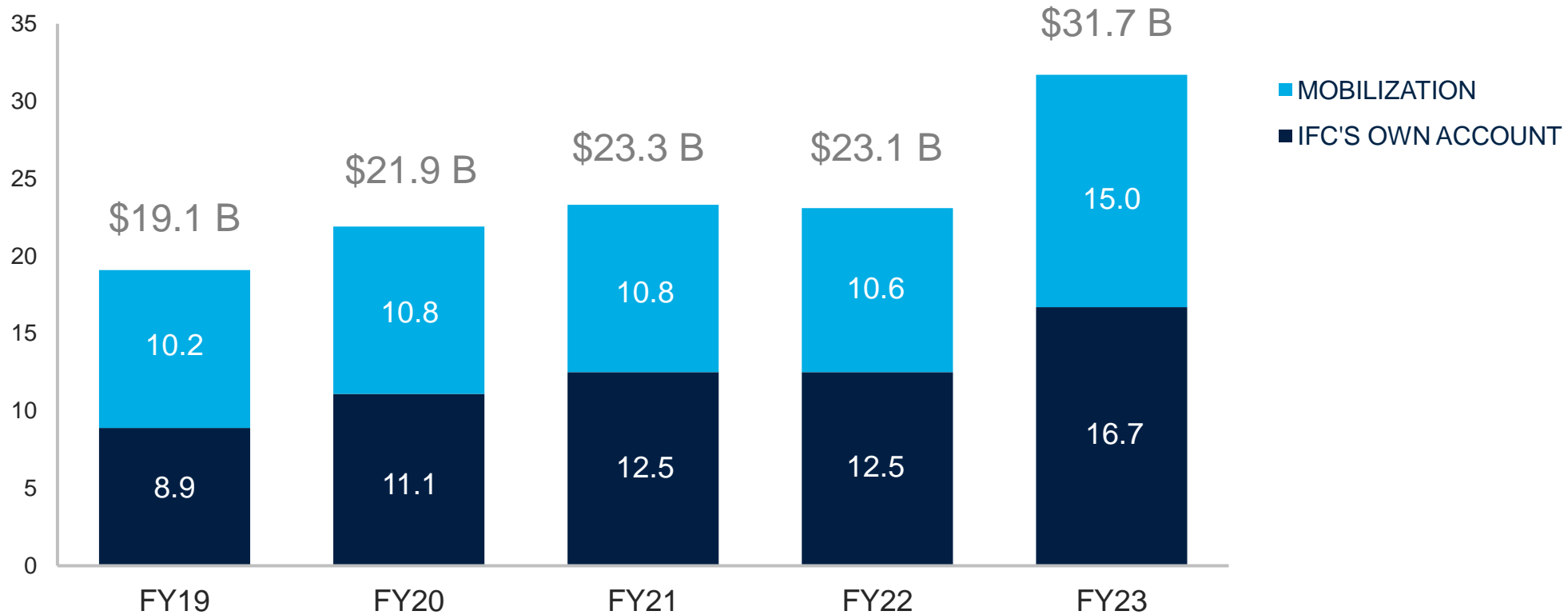
- Engage in **difficult environments** and **mobilize private finance** enabling a **development impact** beyond its direct resources.
- **Sustainability:** IFC is an investor focused on development impact and climate change. Promoter of environmental, social, and corporate governance standards.
- **Create, deepen, and expand markets** where they are weak or do not currently exist.
- **Maximize the financing** available in areas with the most needs.

Our history

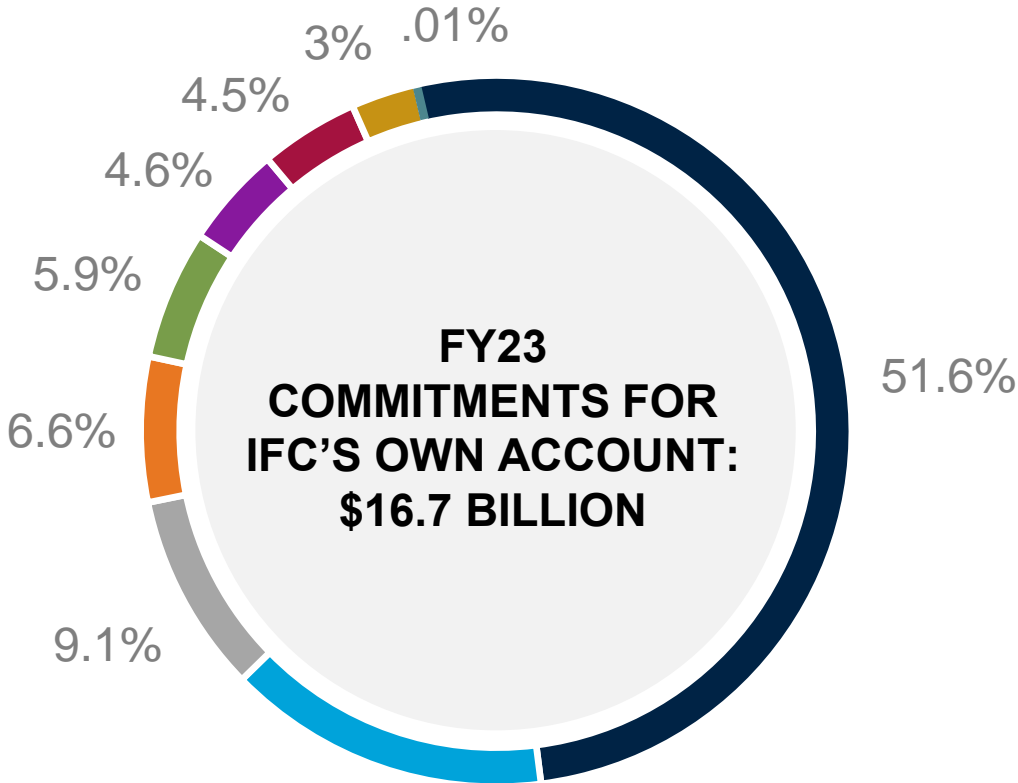
FOLLOWING THE 1945 BRETTON WOODS CONFERENCE THAT CREATED THE WORLD BANK AND IMF



ANNUAL Long-Term Investment Commitments: \$31.7 Billion



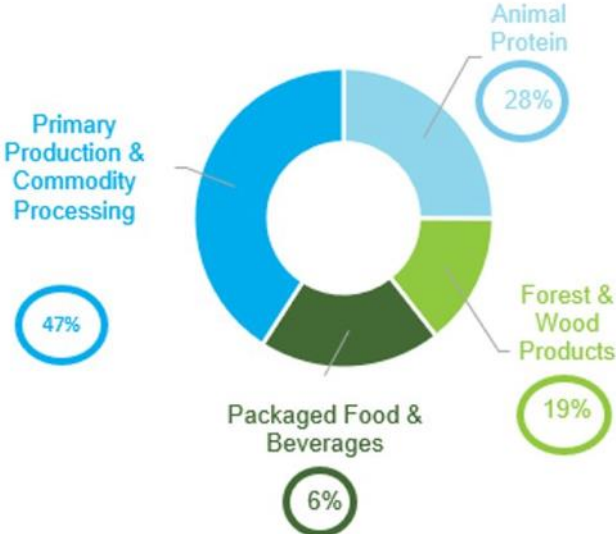
Long-Term Investment Commitments by Industry



- Financial Markets
- Infrastructure
- Manufacturing
- Agribusiness and Forestry
- Funds
- Tourism, Retail, and Property
- Telecommunications and Information Technology
- Health and Education
- Natural Resources

IFC has a \$4.1B active portfolio in 242 agribusiness projects across the developing world

Committed Portfolio by Subsector



Committed Portfolio by Region



More than just investments: IFC's Advisory Services

Solutions to reduce operational risk and strengthen performance

Our products and services are mutually reinforcing and together they give us a special advantage in helping private sector companies in our focus industries

Investment

Loans

- Corporate and project financing
- On-lending through intermediary institutions

Equity

- Direct equity investments and private equity funds

Trade and Commodity Finance

- Guarantee of trade-related payment obligations of approved financial institutions

Derivative and Structured Finance

- Derivative products to hedge interest rate, currency, or commodity-price exposures of IFC clients

Blended Finance

- Using donor funds to crowd in private financing

Resource Mobilization

Syndications

- Capital mobilization to serve developmental needs
- Over 80 co-financiers: banks, funds, DFIs

Asset Management

- Mobilizing capital for businesses in emerging markets
- Managing capital for Investment

Firm Level Advisory

IFC works with clients globally promote best practices along the whole supply chain:

- Strengthen clients' performance and impact (e.g. operational practices, food safety, financial management, governance, etc.)
- Strengthen capacity of suppliers (e.g. farmers) and distributors (SMEs)
- Sector-specific advisory including PPP Transaction Advisory

Creating Markets Advisory

IFC works with governments to improve countries' business environment to unlock a broad range of new private sector investments:

- Expertise in creating enabling business environment in specific industries
- Track record on working with governments on implementing reforms
- Deep relationships across WBG help to improve coordination and delivery

Upstream and Project Development

Innovative Solutions Combining IFC's Expertise and Tools to:

- Help create new markets
- Unlock investment opportunities
- Co-develop early-stage projects
- Improve environmental, social, and corporate governance standards



SANTA PRISCILA
Shrimp and Tilapia, Ecuador

Santa Priscila is Ecuador's largest shrimp exporter. Its packaging plants are certified to BRC Global Standard for Food Safety and about 4,000 ha of aquaculture farms are certified to BAP or ASC standards.

IFC investment is financing the acquisition over 1,200 hectares of shrimp farms in the area of Naranjal close to Guayaquil, and to upgrade its production capacity through their connection to the electrical grid.



OMARSA
Shrimp, Ecuador

Omarsa, an IFC client since 2015, is an integrated hatcher, processor, and exporter of shrimp, certified to multiple internationally-recognized sustainability and food safety standards.

IFC's multiple investments supported the expansion of the company's production and processing capacity and the construction of additional processing, packing, and cold storage facilities.



ALPHA FEED

Aquafeed, China and Vietnam

IFC is supporting Alpha Feed to expand its extrusion technology based aquafeed capacity. The extruded feed, due to its characteristic of better water stability and consequently lower losses within the water system, reduces the risk of eutrophication caused by climate change and temperatures increases.

The project is helping to accelerate aquaculture industry upgrades, supporting the growth of 80,000 farmers and improving climate adaptation in the region.



ENTOBEL

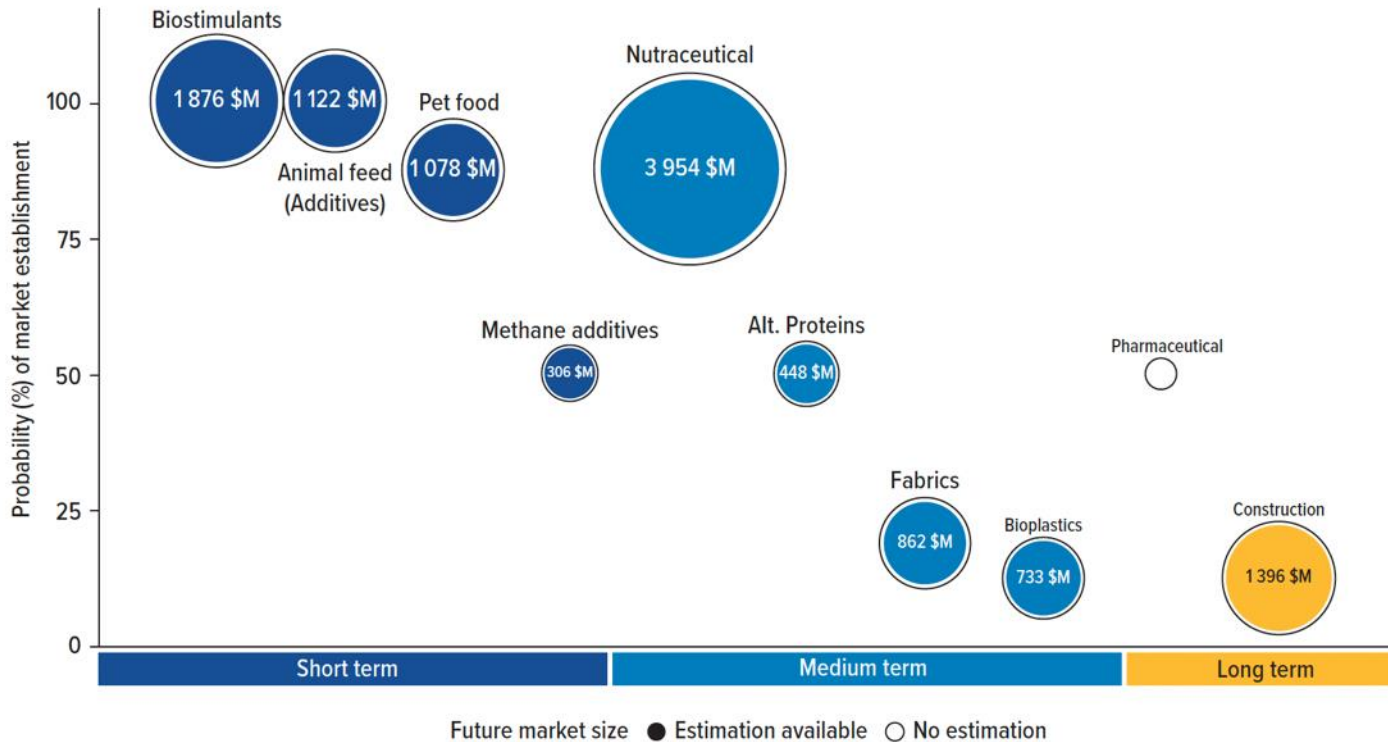
Insect protein for fish feed, Vietnam

Entobel, a Singapore-based biotech company, rears the Black Soldier Fly species to produce insect protein as a feed ingredient primarily for the aquaculture industry, as a cost competitive, more sustainable replacement of fishmeal.

IFC is partnering with Entobel to prove the commercial viability and cost competitiveness of insect production at an industrial scale by supporting the establishment of a 10,000 MT industrial insect feed plant in Vietnam.

World Bank Group AqualInvest Platform sparked the interest in seaweed investments

This report has identified ten global seaweed markets with the potential to grow by an additional USD 11.8 billion by 2030

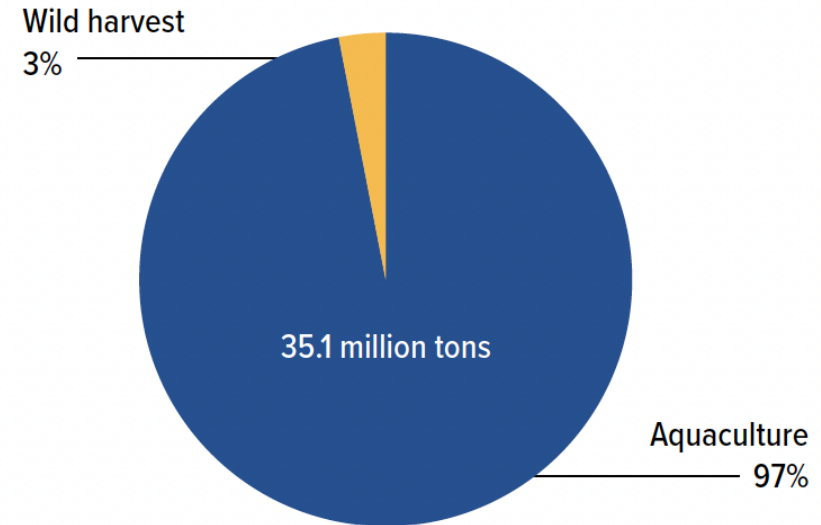


Global seaweed volumes come primarily from aquaculture

Although commercial seaweed aquaculture started in earnest only about half a century ago, the production volumes have grown rapidly and tripled in the last 20 years.

With wild seaweed resources reaching their limits for sustainable harvesting volumes, the future growth of the industry will rely on farming.

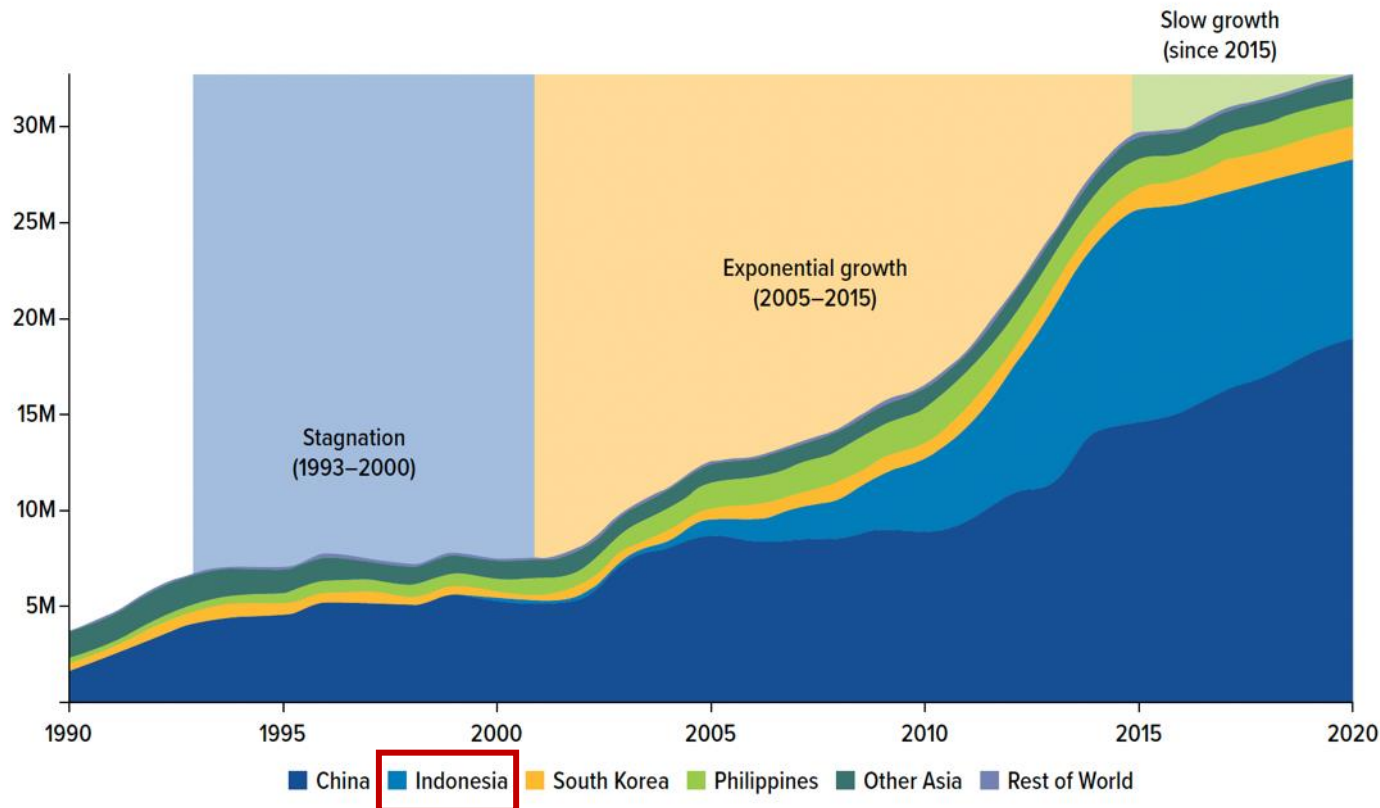
Global production of algae



Source: FAO Fisheries and Aquaculture (2022)

Supply of quality raw material is a growing constraint

Global seaweed production is concentrated in emerging markets
(volume in tons wet weight)



Source: FAO Fisheries and Aquaculture (2022)

Production in established seaweed regions is slowing down and faces major challenges:

Climate change effects on crops

- Shorter cycles
- Low yields
- Increased disease
- Extreme weather events

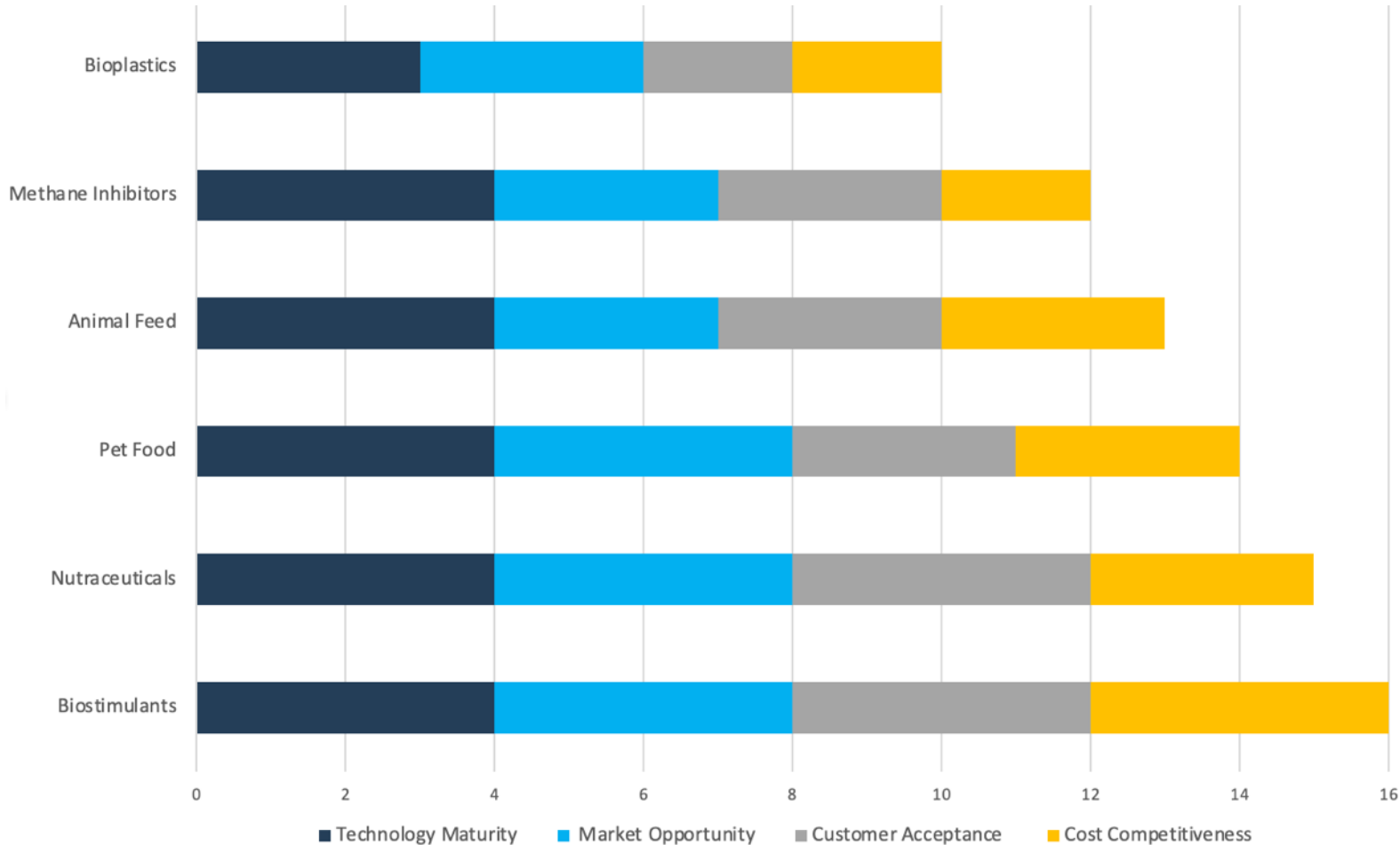
Lack of technology advancement

- Farming in deep water
- Automation in farm processes

Lack of human capital

- Aging population
- Rural depopulation

Emerging applications are at different stage of maturity



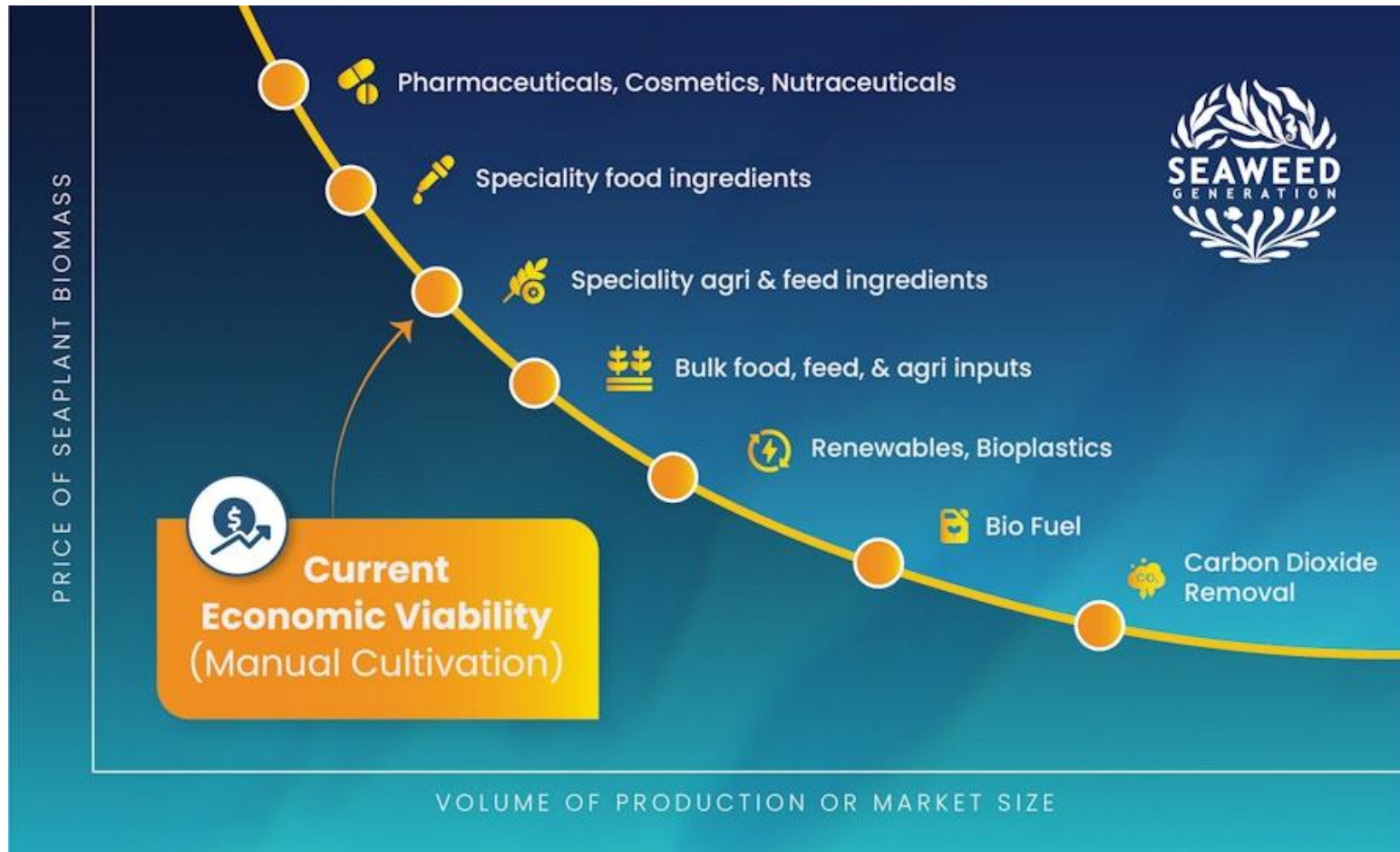
We asked experts to rate (0-20) select emerging seaweed applications:

- Biostimulants
- Nutraceuticals
- Pet Food
- Animal Feed
- Methane Inhibitors
- Bioplastics

on the following maturity dimensions:

- Maturity of technology
- Market opportunity
- Customer acceptance
- Cost competitiveness

Improving efficiency and sustainability of farming will be key for new application growth



Selective Breeding & Genetic Improvement

Enhance growth rates, resistance to disease, and biomass yield.

Integrated Multi-Trophic Aquaculture

Increase overall productivity and reduce environmental impacts by integrating seaweed farming with other aquaculture species.

Advanced Aquaculture Systems

Increase farming efficiency and reduce labor costs through automation and technological advancements.

Biostimulants: what we will be looking for

Key success factors

Technology

- Established extraction and processing technologies
- Continued development with new farmed species
- Compatibility with other product outputs

Market

- Solid existing market share in a strong growth market
- Growing focus globally on farming that supports soil health in a changing climate

Key challenges

Technology

- Ensuring consistent product quality and efficacy
- Need for extensive field trials
- Limited patentability of biostimulant products

Market

- High cost of production with farmed seaweed
- Slow farmer adoption (lack of trust, awareness and resistance to changing traditional practices)
- Ambiguous and evolving regulatory environment
- Long sales cycles



Global biostimulants market

~\$ 3.5 billion



Seaweed-based biostimulants market

~\$1.2 billion



Projected market growth

12% CAGR between 2024-2030

Bio stimulants are closer to IFC investment criteria

Seaweed-Derived Biostimulants - Industry landscape

Mid-size to large companies with established presence

Well established agri input companies whose portfolio includes seaweed-derived biostimulants



Specialized companies in seaweed Biostimulants

Specialized Mid sized companies possessing technical know how & intensive R&D in developing seaweed-based solution



What do we look for in our investments:

A project in **emerging markets** that has positive impact

Experienced sponsor with proven track record and ability to deliver new projects

Scale up of a **proven technology and business model**

Financial strength of current business operations and positive cash flows

Willingness and ability to meet the highest standards in **ESG management**

SUSTAINABLE PROTEIN TEAM COVERING AQUACULTURE



ANUP JAGWANI

**Global Head
of Investments &
Advisory, Agribusiness &
Forestry**



IVAN IVANOV

**Global Advisory Lead,
Sustainable Protein**



ESRA DIKER-YILMAZ

**Global Investment Lead,
Sustainable Protein**



DAVID EVANS

**Senior Industry
Specialist, Livestock &
Aquaculture**

For more information, please contact: iivanov@ifc.org