

Thematic Evaluation Series

**Evaluation of FAO's contributions to
Sustainable Development Goal 2 - "End
hunger, achieve food security and improved
nutrition and promote sustainable
agriculture"**

Aquaculture promotion and Blue Growth

Abstract

This review forms part of the overarching evaluation of the Food and Agriculture Organization of the United Nations (FAO) contribution to Sustainable Development Goal 2 (SDG 2), as requested by the FAO Programme Committee at its 125th session. FAO's Blue Growth initiative is a strategic, innovative approach to improving the use of aquatic resources while simultaneously increasing social, economic and environmental benefits for communities dependent on fisheries and aquaculture. The study finds that FAO has traditionally offered "discrete" support actions that are "packaged", staffed and financed as such.

However, having large-scale national economic effects requires a programmatic sequence of interrelated actions over a prolonged period. This has implications for the way in which such programmes are funded, how FAO's budget is structured and disbursed, and the expertise and experience required of FAO staff – all of which need to be aligned to such a way of working. As such, the study recommends that FAO develop programmatic aquaculture and Blue Growth interventions to supplement Technical Cooperation Programme (TCP) projects and bring about "joined-up" design and strategy. Additionally, FAO could benefit from the expertise of other professionals to deliver its increasingly multifaceted, multidisciplinary, holistic Blue Growth and aquaculture projects, particularly in relation to commercial markets, business models, innovation, new products and service development.

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Abbreviations and acronyms

AfDB	African Development Bank
FAO	Food and Agriculture Organization of the United Nations
GCF	Green Climate Fund
GEF	Global Environment Facility
KOICA	Korean International Cooperation Agency
SDG	Sustainable Development Goal
SIDS	Small island developing states
TCP	Technical Cooperation Programme

1. Introduction

1.1 Purpose

1. At its 125th session, the Programme Committee of the Food and Agriculture Organization of the United Nations (FAO) requested an evaluation of its contribution to the achievement of Sustainable Development Goal 2 (SDG 2). Part of that process involved reviewing key FAO products and services and how they tied in with FAO's efforts to eradicate hunger in all its forms. In this report, we review how FAO's promotion of aquaculture and Blue Growth contributes to the achievement of SDG 2.
2. FAO's Blue Growth initiative is a strategic, innovative approach to improving the use of aquatic resources while simultaneously increasing social, economic and environmental benefits for communities dependent on fisheries and aquaculture. With its emphasis on employment and livelihoods, food security and nutrition, sound fisheries management practices and support for healthy ecosystems, Blue Growth places these communities at the heart of all its policies and activities (FAO, n.d.a).
3. Its primary purposes are to:
 - i. identify and document good practices in the promotion of aquaculture and Blue Growth that have the potential to advance its work in support of SDG 2 and which may deserve to be upscaled;
 - ii. identify areas for improvement and potential gaps that need to be filled;
 - iii. assess the extent to which FAO is collaborating with and seeking new partners on aquaculture and Blue Growth to support SDG 2; and
 - iv. understand FAO's positioning and comparative strengths and weaknesses in aquaculture and Blue Growth in the context of SDG 2 at country and regional level.

1.2 Scope

4. The review covered the following key areas:
 - i. establishing the foundations for transformation to a blue economy (focusing on Small Island Developing States, or SIDS);
 - ii. improving existing aquaculture sectors and increasing food security and resilience to climate change; and
 - iii. introducing and/or transitioning to viable, new aquaculture sectors.

1.3 Methodology

5. The review drew on various methods of data-collection: interviews with FAO staff and third-party stakeholders (mostly by phone, Skype or Zoom due to COVID-19 restrictions), document reviews and desk research into FAO activities, projects, programmes, products and services over the past 5–8 years. Live webinars and a review of recorded podcasts – primarily by FAO, other United Nations (UN) agencies and government ministries and agencies – provided additional information on developments and issues. The Evaluation Team viewed FAO-sponsored YouTube videos for information on and insights into remote locations and the (translated) first-hand perspectives of project beneficiaries and community members, who would otherwise have been hard to reach.

The documents consulted are listed in the Bibliography at the end of this report, while Appendix 1 lists the people interviewed.

6. The team used a mixed-method approach in order to conduct a 360-degree analysis and get input from diverse stakeholders and partners involved in the design, development and implementation of aquaculture and Blue Growth initiatives. Although FAO's primary target clients are its Member governments, typically ministries of agriculture, it was important to solicit the views and insights of other parties where possible (state and non-state actors and end beneficiaries). Such parties are instrumental in developing and successfully implementing FAO's scaled-up, holistic and integrated "One United Nations" approach to national development.
7. The Evaluation Team also examined in more detail a number of recently concluded interventions in the areas of Blue Growth and aquaculture in developing countries around the world, namely, Cabo Verde, the United Republic of Tanzania, the Lao People's Democratic Republic, the Philippines and Bangladesh:
 - i. Blue Growth: "Developing the Foundations for a Blue Growth Economy in a Small Island Developing State" – Cabo Verde.
 - ii. Climate-resilient tilapia farming: "Climate Resilient Aquaculture – Transitioning to ensure greater food security" – Bangladesh and the Philippines.
 - iii. Integrated aquatic and animal farming in rice fields: "Climate Resilient Aquaculture – Improving Food and Nutrition Security" – the Lao People's Democratic Republic.
 - iv. Aquaculture diversification and innovative technological packages: "Pioneering a new Blue Growth Mariculture Sector" – the United Republic of Tanzania, Zanzibar.

2. Background

2.1 Promoting aquaculture and Blue Growth

The promotion and development of aquaculture

8. In 1976, FAO held its first Global Conference on Aquaculture in Kyoto, highlighting aquaculture as a significant food-producing sector and exploring opportunities for its development. This was followed by the FAO-sponsored "Aquaculture in the Third Millennium" conference in Bangkok in 2000 and the "Farming the Waters for People and Food" conference in Phuket in 2010.
9. With aquaculture now the source of more than half of the world's aquatic food supplies and making an increasing contribution to the sustainability of integrated food systems, FAO, in partnership with the Network of Aquaculture Centres in Asia and the Pacific (NACA) and the Government of China, is organizing a fourth Global Conference on Aquaculture to be held in Shanghai from 22 to 27 September 2021. The conference will review the achievements and challenges of world aquaculture development and build consensus on a way forward for the sustainable development of the sector.
10. The specific objectives of the Global Conference are to:
 - i. review the current status of and trends in aquaculture development;
 - ii. evaluate progress on implementing the Bangkok Declaration and Strategy for Aquaculture Development Beyond 2000 and the Phuket Consensus;
 - iii. address emerging issues in aquaculture development;
 - iv. assess opportunities and challenges for future aquaculture development; and
 - v. build consensus on advancing aquaculture as a global, sustainable and competitive food-production sector.
11. FAO has been involved in supporting aquaculture development since shortly after its foundation in the 1950s. Examples of its work include the introduction and expansion of freshwater tilapia farming into Asian countries using imported African fish species. FAO played an important role in assisting countries and communities to promote the addition of these fish to rural diets, providing people with nutritious food and potential livelihoods, particularly smallholders and family fisherfolk.
12. Over the years, FAO has provided a host of services, from technical support to policy formulation and demonstration projects. More recently, it has extended its offering to include specialized support for countries in addressing the growing challenges of climate change, pollution, over-exploitation and illegal, unreported and unregulated fishing.

Blue economy and Blue Growth

13. In 1982, most Members signed the United Nations Convention on the Law of the Sea, which provided a framework and guidelines for the future exploitation of ocean resources as they relate to the sovereign rights of nation states. The International Seabed Authority was established in Jamaica as the governing body.
14. The wider exploration of ocean resources is only now seeing practical application, thanks to advances in technology and evolving market demand. It is expected to form an important part of the future economy for certain Members. This is because SIDS have a large exclusive economic

zone that stretches some 200 miles offshore and enlarges their geographical and economic footprint to many times the size of their land mass.

15. The concept of the “oceans economy” or “blue economy” is recent, originating at the United Nations Conference on Sustainable Development held in Rio de Janeiro in 2012. There were strong calls for a greater focus on a “blue economy” approach during the Rio+20 preparatory process, principally SIDS and coastal states. Since then, SIDS and coastal developing countries have remained at the forefront of blue-economy advocacy, recognizing that the oceans have a major role to play in humanity’s future. Blue Growth is an approach to sustainable development that is better suited to their circumstances, constraints and challenges. Sustaining the oceans and their marine life will provide food for both animals and humans.
16. FAO is uniquely positioned to meet the needs of the blue economy when it comes to the production and consumption of aquatic foods in all their diverse forms, while simultaneously addressing the associated environmental and ecological issues. There are other aspects of the blue economy that are not directly linked to producing or farming aquatic life forms or processing the food derived from them, such as tourism, seabed mining, wave energy, etc. However, the inextricable links between the aquatic life sectors and other socioeconomic sectors (such as “pescatourism”) are drawing FAO into more holistic, multifaceted initiatives (examples of which can be found in Section 2.3).

2.2 The evolution of FAO’s work on aquaculture and Blue Growth

Overview

17. FAO’s work to promote aquaculture and Blue Growth has evolved in response to the changing needs of Members due, among other things, to environmental pressures, population growth, ecological and ecosystem impacts (such as climate change), localized disruptions, socioeconomic transitions (such as urban migration), coastal developments and market dynamics. Since its inception, FAO has continuously advocated a multidisciplinary approach to development. To implement its ever-evolving programmes, the Fisheries Department is increasingly seeking to draw on the expertise of other FAO divisions.
18. Prior to 1995, many FAO programmes came under the Fisheries division – such as the development of the Fisheries Global Information System, the provision of fisheries information and statistics, marine fishery resources identification and biodata, global monitoring and strategic analysis of inland fisheries and aquaculture, fishery resource assessment and management, and the global analysis of economic and social trends in fisheries and aquaculture – which helped with information and communication in the area of aquaculture and fisheries promotion and development. The division was also active in the improvement of food security, food safety, market development and trade, together with the World Trade Organization (WTO), providing technical support for fishing technology, fish use and trade. FAO also worked to alleviate poverty, improve environmental sustainability and integrate aquaculture into rural development, though this was primarily conducted by other departments.
19. In March 1991, the FAO Committee on Fisheries (COFI) called for the development of new concepts for responsible, sustainable fisheries. This prompted the Organization to develop its Code of Conduct for Responsible Fisheries (CCRF) – unanimously adopted by Members at the 1995 FAO Conference – as the global reference framework for aquaculture policy and practices to achieve sustainable use of living aquatic resources.

20. Subsequently, in 2013, FAO launched the Blue Growth initiative, building on the CCRF and focusing on fisheries, aquaculture, ecosystem services, trade and social protection. It advocates ways to balance economic growth, social development, food security and the sustainable use of living aquatic resources.¹

Blue Growth

21. The term “Blue Growth” has emerged over the past decade or so, arising from the concept of the “blue economy”, which emphasizes the need and opportunity to manage and capitalize on ocean-based resources. It is particularly relevant to SIDS and gained impetus from the 2012 Rio+20 Conference focus on the oceans (United Nations, 2012).
22. One of the first SIDS to receive Blue Growth support from FAO was Cabo Verde (from 2015), when the Organization assisted the government in designing, developing and implementing its policy framework and institutional capacity for a national Blue Growth strategy. This resulted in the country’s Charter for the Promotion of Blue Growth to develop a blue economy in sectors including fisheries, tourism, ecotourism, renewable energy, transport, infrastructure and shipping. FAO provided further support in relation to institutional capacity building, legislative matters, policy formulation and project proposal development (see case study 1).

Promoting aquaculture

23. FAO’s aquaculture and mariculture services have evolved in response to Member needs, playing an important role in the transfer of knowledge and know-how for establishing these socioeconomic sectors and helping them to grow, develop and adapt.
24. The Organization’s role is tailored to each country and has changed over time. For example, in the 1950s, FAO helped the Government of the Philippines to establish its tilapia industry by introducing the Mozambican species. Since 2016, FAO has been supporting it in mitigating the negative impacts of climate change on the industry. There has been a continued decline in tilapia yields, partly attributable to the effects of climate change, such as rising ambient temperatures and a higher incidence of droughts and floods. The traditional methods of inland freshwater fish farming have had to be adapted to counter these negative trends (case study 2).
25. FAO has taken other approaches to address changes to ecosystem models, food systems and value chains. This has been demonstrated successfully in integrated agriculture–aquaculture, fish–rice systems in the Lao People’s Democratic Republic, for instance, where non-holistic, detrimental agricultural practices and climate change had led to unreliable water resources. Farmers and fishers now have greater awareness of the negative environmental and ecosystem impacts of these practices (case study 3).
26. In other countries, the decline of certain mainstay maritime food sectors, such as seaweed in the United Republic of Tanzania, has prompted a search for entirely new aquatic species better suited to “new normal” maritime environmental conditions, such as sea cucumbers off the coast of the United Republic of Tanzania, Zanzibar (see case study 4).

¹ FAO Policy Support and Governance Gateway: <http://www.fao.org/policy-support/governance/en/>.

Current status

27. Three elements of FAO's current Blue Growth offering stand out because of their importance in a modern-day context:
 - i. the desire of countries, especially SIDS, to capitalize on the economic development potential of the sea and other aquatic resources by re-orienting policy, public-sector organizations, infrastructure development and funding;
 - ii. the reconditioning and re-engineering of current national marine and aquatic sectors in response to climate change and other ecological/environmental adversity (inland and offshore); and
 - iii. the introduction, development and growth of entirely new aquatic-based industries, food sectors, value chains, commercial and socioeconomic ecosystems to capitalize on evolving realities.
28. We describe these in more detail in the following section.

2.3 Implementation methods

29. FAO recognizes the fast-growing contribution of aquaculture to food security and is providing technical assistance to Members by implementing the CCRF, which:
 - i. promotes sustainable aquaculture development, especially in developing countries, through better environmental performance of the sector, health management and biosecurity;
 - ii. provides regular analysis and reporting of aquaculture development status and trends at global and regional levels, sharing knowledge and information; and
 - iii. develops and implements efficient policies and legal frameworks that promote sustainable and equitable aquaculture development with improved socioeconomic benefits.
30. In addition, the FAO Sub-Committee on Aquaculture provides a forum for consultation and discussion on aquaculture, advising COFI on technical and policy matters related to aquaculture and the work to be performed by the Organization.
31. FAO's Blue Growth activities span a broad offering of support, which can broadly be categorized as:
 - i. policy formulation and implementation;
 - ii. capacity building and institutional support;
 - iii. technical advice;
 - iv. data analysis;
 - v. project development and implementation; and
 - vi. research.
32. FAO is increasingly seeking to provide a more integrated, holistic model of support for its Members that incorporates several of the above-listed forms of implementation. Examples are detailed below.

Building the foundations for Blue Growth

33. To pursue a Blue Growth economic strategy, Members will need to establish a policy framework and governance infrastructure, foster a conducive socioeconomic ecosystem, build institutional capacity and attract the necessary resources for initiatives to bring about change. Such preparations will better facilitate the emergence and development of new aquatic production and consumption sectors. The first significant pilot of such transformation was undertaken by the Government of Cabo Verde in 2015–2020, assisted by FAO, with financial support from the African Development Bank (AfDB).

Box 1. Case study 1: Establishing a Blue Growth economy in Cabo Verde

Following the Rio+20 United Nations Conference on Sustainable Development in 2012, the Government of Cabo Verde was one of the first countries to formally adopt the blue economy as a means of achieving sustainable economic development. The country's Blue Growth Charter was drafted in November 2015.

This Charter identified and promoted all drivers of the blue economy, seeking to position Cabo Verde in global value chains, expand its market access and reduce its developmental vulnerabilities (República de Cabo Verde, 2015).

The Blue Growth Charter was key to creating an institutional framework for national dialogue and coordination. This included a steering committee, a consultative committee and a strategic unit to support operations (called the Blue Economy Observatory), tied to the newly created Ministry of Maritime Economy.

FAO was instrumental in supporting Cabo Verde through this paradigm shift with an unprecedented, transformational project entitled "Technical support for the development of a national investment plan for the blue economy (PNIEB) and the preparation of a programme for the promotion of the blue economy (PROMEB)". This project was successfully implemented in 2017–2020, with financial support of AfDB.

It took more than five years for the Blue Growth Charter to be put into practice, primarily because the process involved navigating uncharted waters, the engagement of multiple stakeholders and the creation of several new entities, with the various legal and bureaucratic encumbrances this brings.

However, this transformative project put FAO in a unique position to assist other SIDS seeking to transact similar Blue Growth transitions in their national economies. FAO can now compile a roadmap to Blue Growth for SIDS based on its Cabo Verde experience, which will help other countries, perhaps, to reduce the time it takes to establish an institutional framework and planning process, from five years to two.

Appropriate Blue Growth preparatory actions by governments will enhance the ability of least developed countries (LDCs) to attract and increase investment in local infrastructure, research, extension services and technological development, thereby enhancing their productive capacity (SDG target 2.a).

It will also help them sustainably manage and protect marine and coastal ecosystems to avoid significant adverse impacts (SDG target 14.2) and increase the economic benefits to SIDS (and LDCs) from the sustainable use of marine resources, including through the sustainable management of fisheries, aquaculture and tourism (SDG target 14.7).

For more, see: <https://www.youtube.com/watch?v=cmw4kvfUnZI>.

2.4 Adapting and transforming an existing aquatic sector

Climate-resilient production for traditional tilapia farming

34. Climate change has been impacting tilapia production in several countries, including the Philippines, where production has stagnated or fallen in recent years (Guerrero, 2019). FAO implemented support projects under its Technical Cooperation Programme (TCP) from 2015 to 2017, to provide practical assistance to tilapia farmers in the Philippines, Bangladesh and Sri Lanka, sowing the seeds for broader climate-resilient aquaculture and Blue Growth activities.

Box 2. Case study 2: Climate-resilient aquaculture practices – small-scale tilapia farming in Asia

Small-scale tilapia farming has been a food-production mainstay of rural communities across Asia, providing quality nutrition and a source of livelihood since FAO helped to establish farming of this African fish in the 1950s–1970s.

After many years of successful sector growth and expansion, however, since the early 2000s, countries such as the Philippines have been seeing significant declines in tilapia production. The declines were attributable to higher fish mortality and slower growth rates, directly and indirectly due to climate-change factors, such as high ambient temperatures, irregular rainfall, flash flooding and drought.

Members sought FAO's expertise in remedying the situation, which led to a small TCP to introduce climate-resilient tilapia farming practices in countries including Bangladesh and the Philippines. Local farmers and businesses were made aware of the effects of different weather extremes on tilapia stocks and encouraged to adopt good farming practices to mitigate the impacts. Project actions included fishpond maintenance, pond alterations, water supply management, fish stock changes and the integration of weather forecasting with fish-farming practices.

Although both Bangladesh and the Philippines have rural, community-based tilapia farming sectors, their operating and value-chain models are quite different. Average pond sizes in Bangladesh are far smaller than in the Philippines (1 000 m² vs 5 000+ m²) and in Bangladesh, they tend to be polyculture, rather than monoculture, as in the Philippines. The Philippine sector is more geared to supplying farmed tilapia surpluses to urban markets than the Bangladeshi sector.

In Bangladesh, the focus was more on local capacity building and demonstrations of good design and implementation practices. FAO's key partner was the Bangladesh Fisheries Research Institute, an independent research institution. This small-scale TCP project led to the approval of a scaled-up Global Environment Facility (GEF)-funded programme, with matching funding from the Government of Bangladesh, for a total value in excess of USD 20 million (FAO, n.d.d.).

In the Philippines, FAO's support extended to the development of IT-based services (linking farmers to a weather forecasting system) and the search for an insurance scheme for beneficiary fish-farmers. FAO's main partner was the Bureau of Fisheries and Aquatic Resources, which falls under the Ministry of Agriculture.

These initiatives led to better productivity and output for largely disadvantaged and marginalized small-scale farmers (SDG target 2.3) and simultaneously ensured sustainable food production systems by implementing resilient practices that strengthened local capacity for adaptation to climate change (SDG target 2.4).

Integrated agriculture–aquaculture: Rice-fish farming

35. Agroecology is another holistic development in the Blue Growth sphere. A successful example of FAO’s work in this area is the rice-fish farming project in the Lao People’s Democratic Republic from 2015 to 2019. The intervention helped to diversify paddy-field farming for sustainable improvements in food and nutrition security among the country’s poor communities.

Box 3. Case study 3: Integrated agriculture-aquaculture – food and nutrition security in the Lao People’s Democratic Republic

Observing continued, significant declines in wild fauna catches (fish, crab, eel, etc.) in their rice-field aquatic ecosystems, local elders in the Lao People’s Democratic Republic were becoming concerned about the future food and nutritional security of their poor, rural communities. Although rice-fish culture was an appropriate intervention to help address climate change effects, few target communities adopted it in a sustained manner. The process of local engagement and transferring ownership to the targeted beneficiaries was flawed.

FAO and the Department of Livestock and Fisheries collaborated to develop a multi-sectoral approach to the promotion of rice-fish culture, including the participation of women and children, and create opportunities for farming families to learn and experiment with the technique from planning to implementation. Promotional trials with 250 farming families were enthusiastically received and built the confidence and motivation necessary for participants to take control of their community’s development process.

Over time, the benefits of this agroecological rice-fish approach became apparent to rural farming families. Small hand-dug ponds acted as a “poor man’s fridge” for storing the new, additional crop of farmed fish. It reduced the time women and children traditionally spent foraging for naturally occurring aquatic food sources (which were becoming depleted). It gave families convenient access to a nutritious protein source – particularly during the dry season – which required only on-farm inputs, with minimal downside risk. It also encompassed the keeping of fish brood-stock for the following season’s supply of seed fish, making it a self-sustaining model.

The method successfully made communities aware of biological approaches to farming, as they witnessed improvements to rice-field soil and came to understand the benefits of recycling farm nutrients and building healthy soil. They realized that rice-fish farming was a water-efficient way of producing animal protein and started to envision intensified food production in their rice-field environments.

Compared with more prescriptive solutions developed by centralized agencies, the trialing process significantly reduces the upscaling costs of development interventions and can accelerate overall efforts to address poverty reduction, food and nutrition security.

This agroecological initiative has helped the Lao People’s Democratic Republic to address several of its SDG goals. It has mitigated the impending threats of malnourishment in poor, rural communities (SDG target 2.2) and helped considerably to ensure sustainable food production systems, by implementing resilient agricultural practices that help maintain ecosystems and strengthen farmers’ capacity for adaptation to climate change (SDG target 2.4). In the process, it has also contributed to SDG target 13.2 (integrate climate change measures into national policies, strategies, and planning) and should double productivity and incomes for small-scale fishers (SDG target 2.3).

For more, see: <https://www.youtube.com/watch?v=XVaow8ewqAw>.

2.5 Introducing and developing a new aquatic sector

Launching a new aquaculture sector – sea cucumbers in the United Republic of Tanzania, Zanzibar

36. Sustaining a traditional aquatic livelihood in the face of significant external changes is sometimes not practicable. Declining stocks mean that disproportionate amounts of human effort and economic resources are expended to secure food, nutrition and/ or income. Remedial action can often involve the introduction and development of an entirely new aquatic species – a complex, high-risk, long-term intervention that few organizations can deliver. FAO, however, successfully launched a sea-cucumber sector for women fisher groups in the United Republic of Tanzania, Zanzibar in 2016–2019.

Box 4. Case study 4: Pioneering a new aquaculture sector – sea cucumbers in the United Republic of Tanzania, Zanzibar

When the United Republic of Tanzania, Zanzibar's seaweed industry went into decline in the 2000s due to disease and climate change, FAO was called upon to develop solutions to safeguard the livelihoods of the mainly coastal women fishers and farmers who relied on the sector.

From 2016 to 2019, FAO piloted an innovative integrated solution, mobilizing financial support from the Korea International Cooperation Agency (KOICA), global technical support from FAO consultants and knowhow and inputs from a specialist international social enterprise company (Blue Ventures, Madagascar) and local women-led producer groups to establish the infrastructure for a pioneering sea-cucumber industry. This was a direct follow up action to the Aquaculture Development Strategy FAO had developed with the Government in 2016 and sought to turn what might have been considered a transitional failure into a new economic sector.

FAO's unique positioning, credibility and bond of trust with the diverse actors involved enabled this high-risk, step-change intervention to take place. The project built a multispecies hatchery, established demonstration farms and trained local people, supplying them with the necessary startup resources – appropriately low tech, but with potentially high socioeconomic impact – to kick-start the venture.

The project had fertile ground on which to build: vibrant local women's producer groups; the informal, but unsustainable practice of retrieving sea cucumbers from the open seas and "fattening" them; the existing aquaculture capabilities of three national universities (State University of Zanzibar, University of Dar es Salaam, University of Dodoma); strong global market demand for sea cucumbers; and the commitment and vision of the Government of Tanzania to grow and diversify its aquaculture sector.

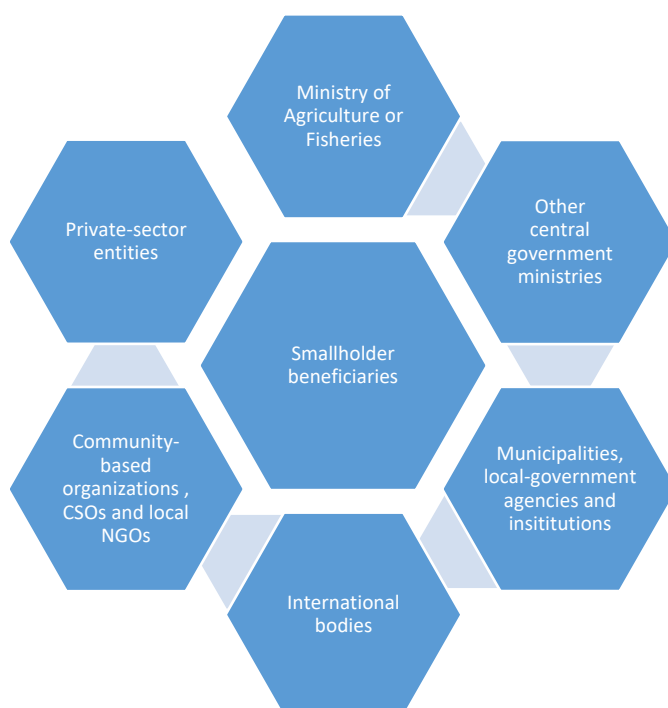
This action is the first, but most critical step on the road to creating alternative sustainable pathways for viable fisher/farmer livelihoods. It has expedited the ability of the Government of Tanzania to attain its SDG 2 goals, in particular SDG target 2.3 (increasing income for small-holder women fisher/farmers) and SDG target 2.4 (ensure sustainable food production systems and implement resilient practices).

This ground-breaking FAO initiative has also contributed to SDG target 2.a (increase in rural infrastructure, research and extension services, technology development) by building the multi-species hatchery. The project aims to attract further investment from the private sector (and others) to realize the full commercial potential of this newly established aquaculture sector.

For more, see: <https://www.youtube.com/watch?v=zjl78yPddBM>.

2.6 Implementation partners

37. The partners involved in implementing these initiatives with FAO are diverse and can be grouped as shown in Figure 1. They each have potentially important roles to play in making project implementation a success, bringing their own skills, resources and networks to bear in jointly delivering the initiative.
38. The challenges FAO is tackling are multidimensional, typically involving social, environmental and economic dimensions. Its considerations increasingly involve the full scope of the value chain and associated food systems – from food production (agriculture/aquaculture) to food consumption. As FAO seeks to act at scale to sustain the transformational processes needed to help achieve the SDGs, it needs to broaden its reach and engagement to include suitable, capable actors from all of these categories.



Ministries of agriculture

39. Ministries of agriculture are FAO's main conduit to Member governments. In some countries, the original agricultural ministry remit has been enlarged to include other functions, such as the environment, food production or land. Fisheries are usually included in this ministry, but often as a poorly resourced subsection. Therefore, ministries of agriculture are seen as the principal government partners in implementing FAO-sponsored initiatives. This is true for FAO's aquaculture and Blue Growth offering and all of the cases reviewed included the successful participation of the ministries of agriculture.
40. As FAO's service offering becomes increasingly holistic and complex, there is a need to expand the size and scope of its involvement to other government ministries and agencies to ensure that projects are properly designed, with broader engagement.
41. However, FAO must also be cognizant of how it is perceived as an Organization by those it is seeking to work with as stakeholders. Some interview feedback indicated that some parties consider FAO's domain to reside exclusively in "agriculture". This will have implications for FAO's

delivery of more holistic solutions – environmental, social and economic – to increasingly complex problems related to food production and consumption.

42. The capabilities and capacity of the ministries of agriculture need to be better appreciated in a local context. In many developing countries, while lip service may be paid to the importance of agriculture as a national sector, it is not unusual for it to be treated poorly from a budgetary perspective, reflecting perhaps its lack of prestige within ministerial echelons. A ministry of agriculture's ability to leverage support from other ministries is poor; its financial resources are limited and its reach and influence on localized settings, such as remote rural areas, tends to be weak.
43. FAO is aware of such limitations, which curb expectations to some extent. Recent developments in SIDS present the opportunity for FAO to better achieve its holistic goals through wider engagement beyond the reach of the traditional ministry of agriculture. The Blue Growth initiative requires a broad-based, multifaceted approach, and the increasing interest shown by SIDS, for example, in the blue economy paradigm provides an excellent springboard for FAO to position itself with other government ministries.
44. Lastly, COVID-19 is exposing the frailties of many economies with regard to food security, as well as the need to invest more in local food production, both agricultural production and processing to prolong shelf life. Time will tell whether these concerns translate into remedial action, including a much-needed bump up in investment in local food and agriculture.

Other central government ministries

45. As mentioned, there is an increasing need for FAO to engage with other ministries beyond the traditional ministries of agriculture. These could potentially include ministries of environment, finance, health, industry, commerce, trade and tourism. FAO expanded its reach in this regard as part of the Cabo Verde Blue Growth initiative, which culminated in the creation of a new government ministry – the Ministry of Maritime Economy. FAO thereby demonstrated its ability to widen its sphere of influence to contact with other central ministries.

Local municipalities, agencies and institutions

46. In the Lao People's Democratic Republic, FAO experienced challenges in getting central government ministries involved, apart from the Ministry of Agriculture and Forestry's Department of Livestock and Fisheries. Local district health and educational officers, in contrast, were enthusiastic participants in the integrated agriculture-aquaculture initiative. The Living Aquatic Resources and Research Centre was also instrumental in successfully delivering the project.
47. In the United Republic of Tanzania, Zanzibar, the country's three universities – the State University of Zanzibar, the University of Dar es Salaam Institute of Marine Sciences and the University of Dodoma – worked with representatives of the Ministry of Agriculture, Natural Resources, Livestock and Fisheries (Marine Development Department) to develop human-resource capacity and capabilities for piloting sea-cucumber farming.
48. In the Philippines and Bangladesh, important institutional support was supplied by the Bureau of Fisheries and Aquatic Resources and the Bangladesh Fisheries Research Institute.

International bodies

49. Two main types of international actors tend to be associated with FAO Blue Growth projects:
 - i. financial contributors, such as donor governments, development banks and funding agencies; and
 - ii. international agencies and bodies, such as those of the UN.

Funders

50. Adequate and timely financial contributions are essential for FAO actions to succeed, especially as it seeks to implement larger, scaled-up programmatic interventions to bring about transformational change. FAO's promotion of aquaculture and Blue Growth has been instrumental in securing financing from diverse parties:
 - i. development banks – such as the AfDB and World Bank in Cabo Verde; and
 - ii. donor governments – such as the Korean International Cooperation Agency (KOICA) in the United Republic of Tanzania, Zanzibar.
51. The successful climate-resilient tilapia farming initiative in Bangladesh went on to apply for more than USD 5 million in Global Environment Facility (GEF) funding for a scaled-up programme with a total value of more than USD 20 million (GEF, n.d.).
52. FAO has been making great progress in assisting Members to access global funds, such as the GEF and the Green Climate Fund (GCF) through its Climate and Environment Division (CED). These have been primarily medium-sized funds (USD 50–150 million) and totalled USD 470 million as of December 2019 (FAO, n.d.c.). The overlap and interconnections between green causes and blue opportunities is considerable and worth synergizing to acquire funding to support scaled-up programmatic interventions, for example, through the National Designated Commitment (NDC) process. Another route is through the GCF Readiness Programme. FAO is already assisting countries in applying for such grants, which are smaller in size, at less than USD 1 million (FAO, 2018f).
53. Lastly, FAO is a channel for the Global Agriculture and Food Security Program (GAFSP) fund, which should be tapped to finance Blue Growth initiatives. The fund aims to link assistance to both the private and public sectors in a new replenishment model announced in late 2019 (Chadwick, 2019).

International agencies

54. Other international agencies (some under the UN umbrella) are sometimes involved, directly or indirectly, in FAO's Blue Growth service offering. The UN reform should see national resident coordinators becoming the focal points for all UN activities in a given country. A common system of monitoring and reporting, aligned with the SDG framework, is also being established in each UN office. It is still too early in the reform process for practical, evidentiary examples.

Community-based organizations, local nongovernmental organizations (NGOs) and civil society organizations

55. Community-based stakeholders need to be prominently featured in the execution of FAO's Blue Growth projects for their impact to take root and be sustained. Successful case study examples include:
- i. Women Fisherfolk Associations (United Republic of Tanzania, Zanzibar) – trained in rearing and harvesting sea cucumber; and
 - ii. Family Farmers in Communities (the Lao People's Democratic Republic) – involved from the design phase of the project.

Private-sector entities

56. The appropriate involvement of the private sector – through entities such as business associations, chambers of commerce, trade bodies or even individual private companies – as stakeholders in Blue Growth initiatives could bring about greater success, especially in follow-up upscaling actions. It could spur innovation in products and services and boost market demand, catalysing large-scale, self-sustaining transformation.
57. Aquaculture is defined as the farming of aquatic organisms in coastal and inland areas involving interventions in the rearing process to enhance production (FAO, n.d.b.). There are two main types – commercial aquaculture and rural community-based aquaculture. FAO's focus has, appropriately, been on the latter, whereas (larger) private-sector companies are more interested in the former. It was perhaps unsurprising, therefore, that there was no significant private-sector involvement in the Blue Growth projects reviewed for this report. Sections 3, 5 and 6 address this matter further.

3. Effectiveness and relevance to SDG 2

3.1 FAO's aquaculture and Blue Growth contribution to SDG 2

SDG target 2.1

58. By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious, and sufficient food all year round.

SDG target 2.2

59. By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons.
60. It is widely accepted that the shortfall between the food produced and consumed by the world's growing population will require increased and improved production of aquatic life forms. FAO's aquaculture and Blue Growth activities are, therefore, a potential key contributor to SDG 2.
61. As mentioned, in the Lao People's Democratic Republic, the elders in many rural villages were becoming increasingly concerned at the noticeable decline in naturally growing aquatic life forms in rice paddies, which constituted part of the local diet (snails, crab, fish, eels, etc.). They were, therefore, keen to participate in FAO's integrated aquaculture farming systems initiative, implemented from 2015 to 2019, with a view to reversing the trend. The integrated aquaculture rice-fish models piloted and adopted in the country led directly to the avoidance of hunger among the rural poor and reduced the prospect of malnutrition in those communities.

SDG target 2.3

62. By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.
63. Activities to promote climate-resilient aquaculture have helped countries such as the Philippines and Bangladesh to combat the reduction in fish production arising from adverse climate change actions. FAO trained small-scale fish farmers in Bangladesh and the Philippines in skills and techniques to institute practical fish-farm management measures to counter increased mortality and loss of yield in their fishponds. This has increased both productivity and income.
64. Likewise, traditional women seaweed producers in the United Republic of Tanzania, Zanzibar benefited from the FAO-led project to supplement their income by introducing a new aquatic crop – sea cucumbers – and were trained in farming and developing this new sector.
65. FAO has also worked with small-scale fishers in the Mediterranean to bolster declining incomes with the introduction of a new "pescaturism" business model, under the FAO Blue Hope initiative. The model aims to increase fishers' income by incorporating a tourism dimension (and a tourist income stream) into their fishing activities with the hosting of tourists on their fishing expeditions.

SDG target 2.4

66. By 2030, ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that

strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters and that progressively improve land and soil quality.

67. FAO has promoted aquaculture as a means of boosting capacity for climate change adaptation, as evident in its projects to scale up climate-resilient tilapia pond culture practices in Bangladesh and the Philippines in 2018–2019. These two projects demonstrated practical actions that rural communities could take to safeguard against declines in tilapia stocks due to increased ambient temperatures, droughts and flooding. Although data gathering was not routinely done and there was a paucity of baseline data, the positive feedback by beneficiary fish farmers suggests progress in this area.
68. In addition, in the Lao People’s Democratic Republic, the local management of rural rice-field ecosystems was central to FAO’s integrated agriculture–aquaculture intervention.

SDG target 2.a

69. Increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development and plant and livestock gene banks in order to enhance agricultural productive capacity in developing countries, in particular least developed countries.
70. In the United Republic of Tanzania, Zanzibar, FAO’s Blue Growth project attracted proof-of-concept funding from KOICA. Since the project’s completion, KOICA has indicated its willingness to extend funding for the next phase, to commercialize the production and sale of sea cucumbers, both domestically and internationally.
71. This FAO Blue Growth initiative in Cabo Verde was successful in securing funding from the AfDB – a first for Blue Growth financing in Africa. Although it is still in the early stages, the indications from the AfDB are favourable that it will continue to fund such actions, either directly or indirectly.
72. FAO’s Blue Growth initiative in Cabo Verde led to the development of the country’s National Investment Plan for the Blue Economy, aimed at attracting technical assistance and investments from national, regional and international resource partners through different financial mechanisms, including blue bonds. Such funding will be required for the 60-plus projects that have been submitted by different stakeholders from the islands of the archipelago in different areas, such as aquaculture, fishery infrastructure, coastal fishery enhancement, fishery and tourism, and applied research (among African SIDS, the Seychelles has already set an example by issuing successful blue bonds in a debt swap to raise funding for its marine protected area).

3.2 Addressing specific SDG targets

73. In addition to the aforementioned SDG 2 targets, FAO’s Blue Growth and aquacultural initiatives contribute to the achievement of several other SDGs:

SDG 14

74. FAO’s Blue Growth initiative contributes substantially to SDG 14 by improving the use of aquatic resources and conserving biodiversity through the CCRF, which takes into account the economic, nutritional, social, environmental and cultural importance of fisheries and aquaculture.

SDG 13

75. FAO's aquaculture and Blue Growth work has important ties to SDG 13 (climate action), as it has been shown that the health and state of the world's oceans, marine ecosystems and life forms have a direct impact on the composition of the atmosphere (through carbon dioxide absorption rates, for example) and resultant weather patterns (such as the strength and frequency of hurricanes, typhoons and monsoons). It has been estimated that the oceans absorb one-third of humanity's CO₂ emissions and 90 percent of the excess heat generated by increased greenhouse gas emissions; it is the largest carbon sink on the planet (Woody, 2019).
76. Equally, climate change actions can lead to disruptions in food supply and the destruction and loss of habitats (such as mangroves and coral reefs), negatively impacting food-production capabilities and capacity. This two-way interdependency and interconnectedness of marine and aquatic ecosystems with climate change actions means FAO is well positioned to play a prominent role in contributing to SDG 13 and SDG 14 through its aquaculture and Blue Growth initiatives.
77. FAO's tilapia projects in the Philippines and Bangladesh contribute to SDG targets 13.1, 13.2 and 13.3 by making rural communities (especially disadvantaged groups and women) resilient to climate-related hazards and integrating aquacultural actions into national policy, strategies and planning. The sustainable management of marine and aquatic ecosystems is a prerequisite to future food security and livelihoods, as well as regulating the climate, moderating extreme weather events and supporting life cycles.

SDG 15

78. FAO's work to promote aquaculture includes all aquatic environments – marine, brackish and fresh water. Its integrated agriculture–aquaculture (rice-fish farming) initiative makes a significant contribution to SDG 15 targets on inland freshwater ecosystems. Local farming communities are engaged and trained to become active custodians of their environment as they seek to earn a livelihood and grow their food – rice and fish – in harmony with freshwater ecosystems, in the face of increasing climate challenges.

SDG 12

79. Aquatic foods are among the most consumed and traded food types globally and are becoming an increasingly important component of a nutritious human diet. FAO has estimated that approximately 35 percent of all fish is lost or wasted during the production and consumption cycles. FAO's aquaculture and Blue Growth work makes an important contribution to SDG 12 by incorporating responsible consumption and production policies and practices.

SDG 17

80. FAO has forged many partnerships through its Blue Growth and aquacultural work, including the public sector, private sector, international organizations, community-based organizations, funding agencies and research institutions. Some countries have also expressed an interest to share their new-found Blue Growth and aquacultural know-how, experience, expertise and resources with other countries through South–South and triangular cooperation.

3.3 Links with the key principles of the 2030 Agenda

81. The Blue Growth initiative has been explicitly developed by FAO to put into practice the key principles of the 2030 Agenda (FAO, 2017a). The initiative closely aligns with 16 of the 17 SDGs (all except SDG 6 on clean water and sanitation). The key principles of the 2030 Agenda are:

- i. acting at scale;
- ii. holistic view and interconnectedness; and
- iii. social inclusion (“leaving no one behind”).

3.3.1 Acting at scale: Influencing national economies by working with multiple stakeholders

82. Promoting aquaculture and Blue Growth has involved working with multiple stakeholders to try and effect the desired transformation in national economies.

Blue Growth

83. In its most advanced Blue Growth action, the pioneering of a blue economy model in Cabo Verde, FAO has worked with various government ministries to establish legislation, set up new Blue Growth-related entities and build institutional capacity, among other things (FAO, 2020a). The response from local-government entities has been positive, with the submission of about 60 municipal proposals for Blue Growth actions.
84. The response from the private sector has been more muted, which is, perhaps, not unexpected given the nature of the knowledge, expertise and technology required to embark on any commercial ventures arising from the wider Cabo Verde blue economy domain. Cabo Verde may not have such capabilities itself and will need to solicit interest from foreign parties through joint ventures, public-private partnerships, inward investment incentives, etc. This is also true for many other SIDS seeking to develop their Blue Growth potential. The recommended approach is to have private-sector representatives (associations, chambers of commerce, etc.) involved as early as possible in the process to achieve effective results, with mechanisms for engagement and participation and channels of communication established accordingly.
85. It is noteworthy that FAO’s Blue Growth action with the Government of Cabo Verde was successful in securing funding from the AfDB. This achievement should not be understated, and the AfDB may become an ongoing partner, providing further funding, brokering relationships with private-sector entities and furnishing other assistance to ensure the new economic model takes hold and spawns related sectors, services, products and industries to the benefit of all of Cabo Verde.
86. It is too early to gauge the success of other Blue Growth initiatives, as most are still in progress.

Promoting aquaculture

87. As the examples of climate-resilient tilapia farming (in the Philippines and Bangladesh), aquaculture diversification (in the United Republic of Tanzania, Zanzibar) and integrated agriculture–aquaculture (in the Lao People’s Democratic Republic) demonstrate, FAO has had varying degrees of success in promoting aquaculture at scale. Engaging with government agencies and local communities has proved highly positive and fruitful and, indeed, fundamental to achieving project objectives and goals.
88. Insofar as the end beneficiaries (smallholder farmers and fisherfolk) can said to be acting as micro, small and medium-sized enterprises (MSMEs), then a private-sector element has been incorporated into the model. In general, though, more consideration should be given to broader supply- and value-chain considerations – including possible routes to market – and other actors that should be involved.

89. For example, in the United Republic of Tanzania, Zanzibar, it is evident that the lucrative end-market opportunity for the sea cucumbers lies in their export. The local Tanzanian population does not have an appetite for the product historically, but this market could also be developed. However, the mechanisms for facilitating the development of export markets were not designed into the project and are not in place, posing a risk to the future success of this worthwhile project.
90. Stimulating food production and links to food consumption (market push and pull factors) are not in synch and were not designed into the original project. This is a common theme in several FAO projects, providing the opportunity for increased engagement with the private sector. Integrating food production and consumption requires appropriate business models and commercial ecosystems which, once established, could provide a self-sustaining “acting-at-scale” solution on a national level.
91. In the aforementioned examples, there was excellent engagement with targeted third parties to facilitate acting at scale. However, a number of things need to be accomplished to take FAO’s aquaculture and Blue Growth work to the next level and influence national economies, as we discuss.

Size and scope

92. The scope and size of aquaculture and Blue Growth actions needed to influence national economies require a minimum “critical mass”. The structure of the FAO budget and its divisional operations dictate that many projects are short in duration and small in scope. Such projects – funded, for example, through TCPs and the Unilateral Trust Fund (UTF) – have their place as pilots, proofs of concept, prototypes, etc. and can be most useful in initiating change. Unless some projects form part of integrated, longer-term, larger-scale programmatic interventions, however, they will only ever achieve limited objectives.
93. FAO’s integrated rice-fish project in Bangladesh, for instance, led to a follow-on, scaled-up programme worth USD 21 million, with the support of GEF. However, in the case of the Lao People’s Democratic Republic initiative, a similar application to GEF for scaled-up activity was not so favourably received.
94. FAO’s CBC division is having commendable success in helping Members apply for large-scale funding from GCF and GEF. This can be leveraged and, together with FAO’s Hand-in-Hand Initiative, create more opportunities to realize scaled-up Blue Growth and aquaculture interventions (see Section 6 for more).

Multidimensional approaches

95. In many cases, FAO is successfully working with numerous stakeholders – both directly and indirectly – but it typically confines itself to working with ministries of agriculture and associated government agencies. This seems partly down to historical reasons and partly down to third-party perceptions of where FAO’s capabilities and competencies lie and with whom it should be liaising.
96. It has also been noted that FAO is restricted by Host Country Agreement rules, which constrain its ability to work directly with third-party government stakeholders (ministries etc.) beyond its agricultural remit without first clearing its engagement with the ministry of foreign affairs of the country in question.²

² FAO Country Case Study Report – Turkey 2020: 4.1 Strategic Partnerships and Collaborative Work.

97. It is also true perhaps that FAO has not been as proactive as it could have been in redefining its image and brand. By its very name, FAO addresses agriculture and food as an integrated domain, yet many Members still treat the two as separate domains – the former falling under the ministry of agriculture and the latter covered by other ministries, such as industry, commerce or trade.
98. Solutions to the challenges of attaining the SDGs in today's world, will require multifaceted approaches. These must consider the environment, trade agreements, finance and industry, to name but a few. Ways will need to be found to address these realities (see Section 6 for more).

Continuity of purpose

99. The ability to act at scale can also be thwarted by a lack of continuity of purpose (and/or action) on the part of key stakeholders – including Members, funding agencies and FAO itself. This is compounded by organizational “memory loss”, whereby knowledge is lost or dissipated over time due, for example, to poor institutional record-keeping or retention measures, the loss of key personnel and project “champions”, a shift of focus to other areas or changes to donors financing priorities. Major transformational change can only be achieved if activities are sustained over time.
100. It is not unusual, and perhaps understandable, that a disconnect sometimes exists between central government and municipalities. The latter are closest and most in tune with the circumstances on the ground, where end beneficiaries are located. As one interviewee put it, “confidence in (central) government’s abilities is somewhat mistakenly placed, in many cases, by FAO”.
101. FAO’s aquaculture and Blue Growth work in the Lao People’s Democratic Republic and Bangladesh both illustrate the benefits of good engagement with local authorities. Likewise, the Cabo Verde Blue Growth initiative got the best responses on project proposals from municipalities.

3.3.2 Holistic views and interconnectedness

102. Most of FAO’s Blue Growth and aquaculture activities are limited to engagements with Member ministries of agriculture. Some FAO personnel interviewed for this review said that engaging with other relevant ministries was challenging.
103. Blue Growth initiatives need to secure financial resources and budgetary commitments from ministries of finance, as well as input from ministries with affiliated interests (environment, industry, trade, commerce, infrastructure, land use, planning, habitat, transport, tourism and energy, to name a few) to implement the necessary changes. This has led to central government involvement on an unprecedented scale for FAO.
104. The promotion of aquaculture and Blue Growth are highly interconnected. FAO takes a holistic approach, as detailed in case studies provided in Boxes 1–4, in Section 2.3 of this report. There are other ways that FAO can extend its reach into other government domains, for example, by capitalizing on the ongoing United Nations reform initiative and/or through arrangements with municipalities or regional authorities.

3.3.3 Gender and social equity considerations

Blue Growth

105. FAO’s Blue Growth programme has been specifically designed to ensure that neglected and disadvantaged groups, such as women, indigenous communities and youth, are incorporated into its activities. These groups frequently dominate fishing communities (FAO, 2018b).

106. In the Blue Growth initiative in Cabo Verde, the criteria for project approval include women's participation and gender mainstreaming, the inclusion of coastal communities and the creation of decent employment. The requirements are detailed and documented in Cabo Verde's Blue Charter (República de Cabo Verde, 2015).

Promoting aquaculture

107. Equity considerations feature heavily in any actions to promote aquaculture. For example, women who traditionally grew seaweed were the primary focus of new sea-cucumber sector development in the United Republic of Tanzania, Zanzibar. The project was designed with them as core beneficiaries.
108. In the Lao People's Democratic Republic, the government specified that the project should start with the least well off – poor rural rice farmers. The project took a community-wide consultation approach in its design and implementation, using the Department of Livestock and Fisheries promotion trial process to optimize benefits to farmers and their families – including women and children, who made up most of the workforce.

3.4 Factors contributing to successful projects

109. In reviewing the specific examples of Blue Growth and the promotion of aquaculture referenced in this report, there are several factors that stand out as being crucial to the success of FAO's work.

Attracting and securing long-term finance for partnership projects

110. A committed and secure source of longer-term funding to finance next stages, post-project follow-up, expansion or upscaling is key to ensuring the success of FAO's aquaculture and Blue Growth projects. FAO lends credibility, assurance and a sense of security to funders that their resources will be properly utilized. Equally, FAO is seen as an "honest broker" by government officials and target beneficiaries.
111. The participation of FAO in the aquaculture diversification project in the United Republic of Tanzania, Zanzibar secured it a strong funding commitment from KOICA. It did so through a bilateral arrangement with the government and it is understood that KOICA has expressed a willingness to continue financing the next phase, to develop commercial markets for the sea-cucumber produce (post COVID-19).
112. Initially, KOICA commissioned a study to establish the technical feasibility of seeding, growing and farming sea cucumber in a new multi-species hatchery in the United Republic of Tanzania, Zanzibar. This was followed by the successful proof-of-concept stage, in which FAO supported the construction of the Korea-Tanzania Friendship Marine Hatchery Centre, educating and training mainly women fisherfolk. Although the COVID-19 pandemic has now interrupted activities, KOICA has offered to provide bridge financing to assist with the disruption prior to taking the sector to the commercialization stage.
113. Another example is the AfDB's financing of the Blue Growth initiative in Cabo Verde. There are also favourable indications that the bank will continue its involvement in funding approved projects, with proposals currently being submitted for evaluation.

Committed and competent FAO leadership

114. Another key contributor to the success of FAO's work on aquaculture promotion and Blue Growth is the quality of FAO personnel in the field – their know-how, dedication, technical ability and

interpersonal skills. The regard in which they are held was evident from stakeholder interviews in the case-study countries. Despite demanding local conditions, sometimes challenging stakeholder relationships and limited resources, these FAO personnel have delivered the outcomes and outputs expected of their projects.

Beneficial ownership (custodianship) for continuity

115. FAO's aquaculture and Blue Growth projects transfer know-how, develop processes and procedures and build infrastructure, among other things, all of which are part of its local capacity-building work.
116. Success will only be ensured by secure and adequate backstopping support to ensure continuity after a project ends. While interventions can end "successfully", having achieved their limited outputs and outcomes, in the absence of continued support and local ownership, practices can revert to the pre-project status quo, with no potential for upscaling or wider dissemination.
117. Experience shows two key components in successfully embedding a transition process. One is ownership by locals, who have bought into the change through their actions, passion, commitment and know-how and whose livelihoods are vested in its continuity. The other is local institutions, staffed by professionals with a vested interest in the area (for instance, it is their area of study, research and training), who have the human resources to sustain it.
118. For example, the involvement of the Institute of Marine Science (University of Dar es Salaam) and two other tertiary institutions as partners in the aquaculture diversification sea-cucumber project will assist with this custodianship function, as will the women's producer groups in the United Republic of Tanzania, Zanzibar, whose future livelihoods depend on it.
119. Equally, with the integrated agriculture–aquaculture rice-fish project in the Lao People's Democratic Republic, the successful engagement of local farmers from the project's initial design to its execution and their newly created roles as qualified farmer trainers have ensured custodianship of the change process by embedding the know-how directly in the community itself. It also has the support of local municipalities and the commitment of the Living Aquatic Resources Research Centre to provide "backstop" ownership.
120. Interviewees confirmed the view that, in most cases, while ministerial support is essential and valued, ministries are not well placed to ensure continuity or custodianship once implementation has ended. They are typically too cash-strapped, remote, unqualified or unempowered to take ownership of such projects.
121. Research and tertiary institutions, in contrast, have greater ability to house and carry forward the change process. A regular stream of students can provide cost-effective manpower; faculty can transmit knowledge and act as a repository of knowledge generated; while an institutional campus can safely house infrastructure and equipment on site, if necessary.

Assembling and managing an effective partnership

122. Section 2.4 describes the different categories of stakeholders typically involved in implementing FAO's aquaculture and Blue Growth projects. A common ingredient in their success has been their commitment to fulfilling their designated roles, with the partnership facilitated by FAO for the most part. Time constraints did not permit in-depth exploration of this aspect. Section 6 explores the possible future role of FAO as facilitator, orchestrator, leader and director.

Building on an established livelihood ecosystem – capitalizing on local strengths

123. In the United Republic of Tanzania, Zanzibar, women fishers already had a well-established livelihood from the marine environment – growing and harvesting seaweed. By engaging beneficiaries who were already in related livelihoods and building on their existing skills, socioeconomic structures, institutional aquatic knowledge and commercial ecosystems, the risk of diversifying into another aquatic sector was mitigated.
124. In addition, it was said that wild sea cucumber had already been a source of livelihood for some women fisherfolk to partially supplement the more widespread seaweed sector, but that the population of wild sea cucumber was in decline. People were taking the wild sea cucumber from the open seas for “fattening” in their farm-zoned areas closer to shore, but this practice was unsustainable.
125. The participation of women’s producer groups as beneficiary stakeholders increased the Blue Growth initiative’s chances of success. Likewise, in the rice-fish initiative in the Lao People’s Democratic Republic, FAO drew on the established rice-paddy ecosystem and existing consumption practices of rural communities (crabs, eels, fish, etc.) as the basis for the formal intervention. As with the sea-cucumber initiative, the Organization recognized that the opportunity for change was not radical (not high-tech or totally new) and could incrementally leverage the capabilities and strengths of local communities.

Having options mitigates the risk of failure

126. The new multi-species hatchery in the United Republic of Tanzania, Zanzibar was also designed with risk reduction in mind, in that it enables the spawning of diverse aquatic organisms (including sea cucumber) in huge numbers, which are then supplied to the women’s producer groups to grow in their controlled, natural settings. This multi-species approach offers a greater likelihood of a successful outcome in what was essentially a proof-of-concept project. The same facility that can produce sea cucumbers can also spawn milk fish and mud crabs.
127. In addition, several domestic partners were engaged by the project for their dissemination of know-how and capacity-building, notably students and faculty up to PhD level at the State University of Zanzibar, the University of Dodoma and the Institute of Marine Sciences (University of Dar es Salaam). This provides some degree of risk management in relation to knowledge transfer during project implementation and rollout.

Market demand – crucial to aquaculture and Blue Growth success

128. For FAO’s activities to have any chance of success, market forces must exist, such that private, community and social enterprises embrace and adopt it. Success will come when one or more player (entrepreneur, SME, family operation) can see the socioeconomic benefits (apparent or latent) associated with the project, thus forming the basis of project sustainability. In the case of the private sector, this requires appropriate business models and a conducive commercial ecosystem to facilitate supply and value chains, the innovation of products and services, and trading mechanisms.
129. The existing business model in the United Republic of Tanzania, Zanzibar was seaweed farming, operated by family units or community cooperatives, many of them women. These seaweed production operations were faltering, so the businesses welcomed an alternative. It was a fairly easy process to add sea cucumber cultivation to seaweed cultivation, or even to change over entirely.

130. Similarly, with the rice-fish project in the Lao People’s Democratic Republic, market demand was needed to replace the dwindling fauna food sources that co-habited naturally in the paddy fields. With the careful introduction of new fish species, existing community members – themselves the consumer market for the produce – embraced the changes.
131. In contrast, in Cabo Verde, the Blue Growth project is still in the early stages, so the pull of market demand has not yet crystallized into specific products or services. In some instances, end-market demand lies outside the country or immediate area, so additional measures will be needed to stimulate engagement and delivery mechanisms.

Pilot and demonstration farms – learning through practical, locally designed examples

132. In most cases, the success of FAO’s aquaculture and Blue Growth initiatives can be attributed to the traction they gained with target communities through practical demonstrations and pilots, which make the proposed changes real and easy to understand. This has parallels with FAO’s successful farmer field school methodology.
133. In the United Republic of Tanzania, Zanzibar, demonstration sea farms were established in the target communities and seed sea cucumbers were planted for growing, harvest and processing. In the Philippines and Bangladesh, the changes required existing fishponds to be deepened for tilapia, to have more shade and take older fish fingerlings. This was done with local demonstration ponds. Likewise, in the Lao People’s Democratic Republic, rural farmers were engaged early on, in the project research, formulation and design phase, where they witnessed and were inspired by positive pilot results. These beneficiaries were directly involved in shaping a localized aquaculture solution, the DLF Promotion Trial Process, which greatly increased acceptance and saw the process embedded in rural farming communities. Success spread by word of mouth, which will greatly help the intervention to scale up of its own accord, though probably at a slow pace.

4. Contribution of aquaculture and Blue Growth to FAO's positioning

134. FAO's work to promote aquaculture and Blue Growth uniquely positions the Organization to take global leadership on matters pertaining to marine and aquatic food production, consumption and trading, particularly as they relate to SDG 2 (zero hunger) and SDG 14 (life below water).
135. Furthermore, the high degree of interconnectedness and interdependence of the marine environment, ecosystems and coastal communities in the food-systems paradigm also means that FAO's work could further position it for an overseer role on the broader blue economy, particularly in SIDS. As mentioned in Section 3.3, this extends to FAO playing an important role in overlapping areas under SDG 13 (climate action).
136. Many Members seeking to progress a blue-economy development approach for their countries are looking to FAO for tools and techniques, technical expertise, advice, knowledge, data and support for project implementation in the food and agriculture sectors. For FAO to avail of this opportunity, it must fully understand its current position in the aquaculture and Blue Growth domains – both real and perceived.

FAO as convener – initiating major transformational change

137. Although, technically speaking, FAO only acts in response to Member requests, its trusted partnership is fundamental to initiating large-scale transformation in areas of market failure.
138. In a rapidly changing world, faced with growing issues of population growth, rampant pollution, climate change, environmental degradation and ecological disasters, countries need to make radical changes to the traditional ways they provide food for their people. Some of these paradigm shifts in food production processes are highly risky and complex, requiring multifaceted, coordinated and timely, sequenced actions. They will typically not be initiated by commercial market forces through single actors – be they state or non-state.
139. Therefore, major transformation – be it establishing the foundations for a country's blue economy transition or introducing an entirely new food system – requires the unique convening power of FAO. This was evidenced in the Blue Growth initiative in Cabo Verde, where FAO was instrumental in bringing together the Ministries of Finance, Infrastructure, Land Use Planning and Habitat, Transport and Tourism, and Industry, Trade and Energy, as well as several municipalities, public and private universities and several private sector (producer) associations.
140. However, FAO's role as convener has sometimes, inadvertently, proved a double-edged sword. On occasion, there has been a high risk of discontinuity and loss of transformative effect once the initiative has been completed and FAO has "left the scene". The remainder of the assembled project coalition can weaken, hampering further progress and damping the positive change dynamic. Such a modus operandi is not conducive to acting at scale. Sustainability of transformation requires better management of project design and execution, as we note in the recommendations in Section 6.

Facilitator of a multi-sector, holistic and sustainable implementation

141. Having played a key role in assembling a coalition of stakeholders to design, plan and initiate an initiative, FAO is also well positioned to facilitate implementation of the change process, which involves many diverse actors, from community agents and public agencies to technical experts and NGOs.

142. Acknowledging its valued role as facilitator, several municipal organizations in Cabo Verde recently recommended that FAO partner with the National Association of Municipalities to engage more universally at the decentralized level, across the country, under the Blue Growth initiative.
143. In the United Republic of Tanzania, Zanzibar, FAO's role was pivotal in accessing hatchery know-how and seed stock from a Madagascar social enterprise – Blue Ventures, the first and only other large-scale operation growing sea cucumbers in Africa – for the benefit of women's producer groups.
144. Local NGOs made very favourable comments about FAO's role as a mediator under the Blue Hope initiative (in Turkey, Algeria and Tunisia) in conveying their views to ministerial level. They further said that FAO's presence on projects brought a systematic approach to consultations and that its good reporting mechanisms ensured learning was shared and retained. These same NGOs have requested that FAO establish a platform to bring together NGOs and appropriate public authorities (especially central government bodies) to facilitate further, ongoing dialogue (FAO, 2020f).

Mobilizer of resources and finance

145. FAO's leading role lends credibility to initiatives, attracting and securing funds from diverse international agencies (AfDB for Cabo Verde) and donor countries (KOICA for the United Republic of Tanzania, Zanzibar). This was the first time that the AfDB supported a Blue Growth project in Cabo Verde.
146. The scale and scope of green funds need to be replicated for the blue economy. Indeed, there are overlaps between SDG 13 and SDG 14 initiatives. Certain Blue Growth actions will lead directly to positive green, environmental outcomes and there is a case to be made for designing joint blue/green proposals for large-scale, long-term programmatic interventions.
147. Many of the current Blue Growth and aquaculture interventions are relatively small-scale projects, funded through traditional FAO TCPs, national trust fund or UTF programmes. However, the same FAO capability that has led to unprecedented success of late in helping countries develop project proposals for substantial GCF funding (hundreds of millions of USD in value) could be used to apply for large-scale green or blue funds. Blue funding is a relatively new and evolving area; the Seychelles Conservation and Climate Adaptation Trust (SeyCATT) fund stands out as a prime example of good practice, as we note in Section 6.
148. FAO is well positioned to lead the design and development of programmes and project proposals for Members to secure largescale funding for transformational aquaculture and Blue Growth initiatives.

Coordinating South–South and Triangular cooperation

149. FAO has an existing role as a facilitator of South–South cooperation, matching country demand and supply, securing resources for delivery, ensuring the quality of the exchange and raising the visibility of results (FAO, 2015). There are well-defined processes in place, within an established South–South cooperation gateway framework, with access to South–South cooperation trust funds to finance approved actions.
150. FAO could capitalize on this role by promoting its aquaculture and Blue Growth work to a specific subset of Members, then acting as a South–South and triangular cooperation coordinator. The Governments of Turkey and Cabo Verde have offered to act on the supply side of such an

arrangement. The challenge appears to lie on the demand side, where more promotional and educational activities are needed.

Gateway to integrated United Nations coordination

151. Within the Blue Growth agenda (and the blue economy), FAO is uniquely placed to provide individual Members with a coordinated, joined-up approach that integrates the many areas impacted by such a socioeconomic development pathway. Cabo Verde is the first country to be assisted by FAO in this transition, which has involved many government ministries and other domestic stakeholders.

152. As the United Nations seeks to implement its country reform programme, with Resident Coordinators acting as focal points, there is an opportunity for FAO to promote its Blue Growth initiative as a roadmap for countries (such as SIDS) seeking to make the paradigm shift to a blue economy. This could establish the foundation for integrated United Nations coordination in some countries.

5. Lessons, challenges and limitations

5.1 Potential challenges and ideas for scaling/replicating/adapting at scale

153. FAO's work to promote aquaculture and Blue Growth over the years has risen to the challenges of evolving contexts, be they natural or man-made or both. However, the way the FAO budget is structured is limiting the scale of its interventions (to TCP projects worth less than USD 2 million, for example) when large-scale transformations require a more programmatic approach.
154. The Organization's current Blue Growth and aquaculture projects are important – typically initiating change with pilot schemes and proofs of concept – and largely achieve what they are designed to do. However, opportunities are being lost to progress these interventions to the next stage and scale them up to major national or regional transformations. Some of the reasons are organizational issues that lie in the origins of FAO – structure, budget, culture and human resources, for instance – which need to evolve to better meet the increasing complexity of the Organization's remit, which encompasses other domains.

Building on first-stage project initiatives

155. Certain aquaculture and Blue Growth initiatives reviewed have shown that funding can be secured for follow-on, larger-scale transformations. For example, additional KOICA funding has been offered to commercialize the sea-cucumber sector in the United Republic of Tanzania, Zanzibar, upon completion of the first-stage project, which was treated as a technical feasibility study (The Citizen, n.d.).
156. However, the issue here, as is usually the case, is a lack of continuity to the scaling-up phase, as a second stage was not designed as part of the initiative from the outset. The concept of a "semi-commercial" hatchery operation for the United Republic of Tanzania, Zanzibar was talked about, but was not detailed. The hope now is to forge a way forward to developing a viable market model.
157. If upscaling is not treated as part of a wider, long-term programme, there is a strong possibility that the effort put into these TCP projects might dissipate. To mitigate the risk of disruption between initial intervention and subsequent upscaling, the transition from an initial, fairly small intervention to larger-scale action must be planned from the outset and sequenced in as first-phase implementation progresses. The process needs to be more joined up and seamless to have a greater chance of success.
158. Furthermore, FAO will need to engage different types of experts (beyond its traditional technical experts), with relevant experience and skillsets, making them responsible for activities such as planning and implementing the scaling-up process. These people will have knowledge and experience of the "consumption side" – market dynamics, private-sector ethos, business models, commercial ecosystems and change management, among other things. They will be able to converse and negotiate with other actors from the private sector and elsewhere.
159. Such experts can take a "helicopter" view of the connection between the initial project phase and how it might be scaled-up, replicated or shared nationally, regionally or globally. As far as the review could ascertain, this does not appear to be an existing role or responsibility among FAO personnel. The focus is on achieving project objectives, goals and targets, not on what could happen afterwards.

160. The routes to upscaling are many and cannot be prescribed, but the engagement of other potential stakeholders, such as social enterprises and/or the private sector, to leverage market dynamics is a potential option.

Private sector involvement

161. From the design stage, all projects should involve third parties with the capability, motivation and resources to potentially scale up such interventions. These should include stakeholders from the private sector (or technical experts with private-sector expertise) who understand commercialization, innovation, product development, market development and financing, among other things.
162. Such private sector representation should preferably be from business associations, trade bodies or chambers of commerce (not private companies) to maintain commercial neutrality and provide insights into areas such as value addition, supply chains, market development, new products and services and export potential. They could even be engaged as part of an advisory board from project outset.
163. When it came to diversifying aquaculture in the United Republic of Tanzania, Zanzibar, there was a sense that FAO's priority was to prove what was technically possible with such produce, potentially without adequate consideration of commercial market consumption thereafter. There is a need to consider appropriate business models for smallholder fishers and the supporting commercial ecosystem to scale up and sustain food production. (For example, FAO was advised that local people do not traditionally eat sea cucumber, so there is no domestic "fall-back" market should the export market take longer to develop).
164. In summary, most FAO Blue Growth and aquaculture projects are viewed as one-offs and, therefore, treated as such by those working on them. This has been accompanied by a lack of budgetary commitment and responsibility for potential follow-on scaled-up actions. So, while projects are successfully piloted to achieve limited objectives, there is no "navigator" to chart the course of a longer-term journey of upscaling and major transformation.

5.2 Use of innovation and digital technologies

165. FAO's Blue Growth and aquacultural interventions demonstrated the use of various technologies and innovative practices:
- i. hand-held devices used by rural farmers in the Philippines;
 - ii. early-warning weather-forecasting systems to adapt fish-farming practices to climate change; and
 - iii. GPS technology in the United Republic of Tanzania, Zanzibar sea-cucumber initiative.

5.3 Applicability in addressing shocks and stresses

166. The FAO Blue Growth and aquacultural interventions reviewed were designed specifically to respond to impacts of climate change. For example, the climate-resilient tilapia farming initiative in the Philippines and Bangladesh assisted rural local farmers with farm practices and methods to mitigate fish yield losses. The need for the project in the United Republic of Tanzania, Zanzibar was precipitated by climate change effects that negatively impacted the seaweed sector. Sea cucumber was specifically selected as a hardier food source that would cope with the increasing stresses and shocks of climate change on marine ecosystems.

6. Recommendations

The aquaculture sector in all its forms will continue to grow and play an important role in food supply and consumption for developing states. This applies to community-based and commercial aquaculture, both marine based and inland aquatic. The Blue Growth model and the blue economy are featuring more prominently in the socioeconomic strategies and planning of many developing countries (SIDS and coastal states). In response, FAO is providing an increasingly comprehensive Blue Growth and aquacultural service offering to support Members that could benefit from such an approach.

Opportunities to act at scale

FAO has traditionally offered “discrete” support actions that are “packaged”, staffed and financed as such. To have large-scale national economic effects, however, requires a programmatic sequence of interrelated actions over a prolonged period. This has implications for the way in which such programmes are funded, how FAO’s budget is structured and disbursed, and the expertise and experience required of FAO personnel – all of which need to be aligned to such a way of working.

Recommendation 1. Develop programmatic aquaculture and Blue Growth interventions to supplement TCP projects and bring about “joined-up” design and strategy. FAO’s Project Clearance Mechanism should include post-project proposals in its initial TCP scoping. The Hand-in-Hand Initiative could facilitate such a pathway for larger-scale interventions.

Human resources – types of non-technical expert

Technical experts are core to FAO’s success, yet many appear to be engaged on a project-by-project basis, which is not conducive to the long-term, transformational change through a programmatic approach (see above).

Recommendation 2. FAO could benefit from the expertise of other professionals to deliver its increasingly multifaceted, multidisciplinary, holistic Blue Growth and aquaculture projects, particularly in relation to commercial markets, business models, innovation, new products and service development.

Recommendation 3. FAO should take a broader, longer-term approach in its Blue Growth and aquaculture interventions. The Organization should establish and resource a specific Blue Growth and aquaculture unit that is responsible for distilling down the lessons of FAO’s interventions and ensuring that active follow-on, upscaling actions are conducted, where feasible, in coordination with TCP project completion.

Accessing financing for larger programmes

TCP and UTF-type projects are important, but are limited in scope, budget size and, therefore, impact. As mentioned, the green economy and blue economy domains have several areas of overlap and interconnectedness. FAO (CBC, in particular) has achieved considerable success in assisting Members in developing proposals to access large-scale funding from the GCF. Such applications require complex information gathering and data processing (for example, through vulnerability and resilience assessments), while bid proposal pre-requisites include demonstrating compliance with gender-balance, indigenous, biodiversity, ecosystem and environmental considerations.

Among its other capabilities, FAO has a tool to measure vulnerability, data sets to quantify and forecast project impacts, strong gender-balance resource expertise (the ESP-ADG Gender Unit) and widespread credibility on project development and implementations with large funding institutions. FAO has also become an Accredited Entity with the GCF, positioning it to assist Members in applying for large-scale funding resources (more than USD 100 million).

Recommendation 4. FAO should leverage its credibility and success with large, programmatic green funding (CBC mainly) and replicate this within the Blue Growth domain to develop large-scale proposals.

This could be done by combining green and blue initiatives into joint integrated proposals or seeking innovative blue bond financing.

FAO's reach with governments ministries

Blue Growth provides FAO with access to a wider government platform from which to execute its increasingly holistic, integrated – environmental, social and economic – service offering. The Cabo Verde action involved the Ministries of Finance, Infrastructure, Land Use Planning and Habitat, Transport and Tourism, Industry, Trade and Energy. This contrasts sharply with most interventions, which only involve ministries of agriculture at central-government level.

Recommendation 5. FAO should capitalize on the precedent set by the Cabo Verde Blue Growth intervention to shape and actively promote FAO's evolving, holistic role among stakeholders, who may have a more limited appreciation of FAO's capabilities and reach.

Recommendation 6. FAO's work on aquaculture and Blue Growth could be leveraged to progress United Nations Country Reform for SIDS (and some coastal states), with broader blue economy domains coalescing around a Blue Growth-based strategy for these Members.

Third-party perspectives on FAO

Interviews feedbacks suggested that some third parties consider FAO to be a "donor rather than a partner" and FAO's domain to be exclusively agricultural, with a limited food purview. This has implications for the way in which FAO can deliver more holistic Blue Growth solutions – environmental, social and economic – to increasingly complex problems related to production and consumption value chains and food systems.

Recommendation 7. FAO should conduct research (including focus groups with diverse third parties) to better inform itself on how best to progress its positioning with third parties.

In some countries (even SIDS), fisheries are currently a low-level priority within the ministry of agriculture, carrying limited clout within the central government apparatus. There is now an opportunity – as we saw with the Cabo Verde Blue Growth initiative – to promote the interests of the fisheries domain under the blue economy banner and perhaps even create a new, more empowered ministry (like Cabo Verde's Ministry of Maritime Economy).

Recommendation 8. The Cabo Verde experience of transitioning to a blue economy should be used as a roadmap in assisting other SIDS with their blue-economy transformations.

FAO's role as convenor, facilitator and honest broker is a view widely held by diverse third parties in these Blue Growth and aquaculture initiatives. This is commendable, but may inadvertently result in FAO being seen as the "indispensable glue" holding a transforming coalition together. Once a project ends and FAO's direct involvement stops, the change process can lose momentum, risking all of the positive gains and scuppering upscaling opportunities. We discuss a re-evaluation of FAO's role further below.

South–South and triangular cooperation

FAO has an existing role as a facilitator of South–South cooperation (SSC) – matching country demand and supply, securing resources, ensuring the quality of the exchange and raising the visibility of results. Blue Growth is rich in transferable capacity and capability under the SSC programme.

Recommendation 9. FAO should consider developing a fast-track procedure to expedite SSC matchmaking, specifically focused on promoting Blue Growth within the existing SSC Gateway. It could start with the supply-side offers of Turkey and Cabo Verde.

Private-sector engagement

FAO is actively seeking to widen its engagement with the private sector in many forms, where there are shared values and goals. There will understandably be challenges with private sector concepts, such as

the “profit motive” and “free market forces”. However, there are suitable avenues for joint venture and ways to avoid conflicts of interest that should be explored to expedite and enlarge FAO’s Blue Growth impact.

Recommendation 10. Vetted private-sector entities with shared FAO values (such as social enterprise models, private foundations, farmers’ cooperative groups, chambers of commerce and private sector associations) should be invited to serve on advisory panels of FAO Blue Growth interventions to brainstorm on innovation and optimize downstream market potential.

Recommendation 11. To scale up and gain greater impact from proof-of-concept TCP-type Blue Growth initiatives, FAO’s project partnerships could involve private-sector representatives from the outset. They could then become involved, after due process, in any post-project upscaling actions.

Partnerships and relationship building

Feedback has recommended that FAO’s Blue Growth and aquaculture interventions were more successful when beneficiaries were involved in the early stages of researching, planning and designing the action – in other words, prior to their customary, later involvement in its implementation.

For example, in the Lao People’s Democratic Republic, it was noted that pre-packaged solutions imposed by outside parties (be they central government or external consultants) had not historically led to sustainable change. However, the early involvement of rice farmers and their wider local community gained their buy-in and long-term commitment at the local, grassroots level.

Also, in Cabo Verde, a number of municipalities and the National Association of Municipalities were revealed to be the key agents of change and central to the progression of the country’s blue economy transition, responding with the most follow-up Blue Growth project proposals.

Recommendation 12. End beneficiaries and local authorities should be front and centre in the research, design and development of FAO Blue Growth and aquaculture initiatives and FAO should incorporate methods to facilitate this when customizing such initiatives for Members.

FAO’s role – facilitator or orchestrator?

Some see FAO’s role as a “laissez-faire” facilitator and consider it insufficiently productive, being somewhat passive or constrained at local level, in particular. FAO typically relies on governments to approach them with specific requests, though it is increasingly taking a role in formulating national strategies and policies in relevant spheres of influence and assisting with NDCs. This is understandable, given the traditional “diplomatic” dimension to intergovernmental discourse.

Some governments have constraints, such as changes in key political personalities and discontinuity of action due to changes of government and various internal distractions, that can slow the process of identifying, initiating and effecting the required food and agricultural transformation processes and thwart follow-on actions to scale up interventions that could benefit the national economy.

Time is against the achievement of many SDG 2 targets globally, and FAO’s Blue Growth and agricultural offerings are required for additional impetus and to catalyse and scale up current initiatives and programme interventions. The question is, how can FAO lead in a diplomatic way?

Recommendation 13. FAO’s role should be expanded, so that it can become less of a passive facilitator and more of an orchestrator on certain issues.

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Appendix 1. People interviewed

Last name	First Name	Organization/Division	Position
Barange	Manuel	FIA	Director
Halwart	Matthias	FIAA	Key lead contact
Kafeero	Fred	FAO Tanzania	FAO Representative
Menezes	Ana	FAO Africa, Department of Fisheries and Aquaculture	Aquaculture Officer
Miao	Weimin	FAO, NFIAT	Aquaculture Officer
Mmochi	Aviti John	Institute of Marine Sciences, Tanzania	Senior Lecturer
Risoli	Camillo	FAO, Cabo Verde	Country Consultant
Sirimanotham	Chanthaboun	Lao People's Democratic Republic, Department of Livestock and Fisheries	Deputy Director General
Taylor	Nick Innes	FAO	Consultant

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