



Food and Agriculture  
Organization of the  
United Nations

# Global Blue Growth Initiative and SMALL ISLAND DEVELOPING STATES (SIDS)



Three-quarters of the Earth's surface is covered by oceans and seas which are an engine for global economic growth and a key source of food security. The global ocean economic activity is estimated to be USD 3–5 trillion. Ninety percent of global trade moves by marine transport. Over 30 percent of global oil and gas produced is extracted offshore. Expanding knowledge of marine biodiversity has provided breakthroughs in sectors such as pharmaceuticals, food production and aquaculture. Over 3.1 billion of the world's population lives within 100 kilometers of the ocean or sea in about 150 coastal and island nations.

At the same time, inland ecosystems and their aquatic resources are vital contributors to world food security, as well as supporting the livelihoods of fish producers, processors and sellers. Fisheries and aquaculture provide 4.3 billion people with more than 15 percent of their annual animal protein consumption and are a vital source of micronutrients and essential lipids.

Global fish production has grown steadily in the last five decades with supply increasing at an average annual rate of 3.2 percent, outpacing world population growth at 1.6 percent. Per capita fish consumption increased from an average of 9.9 kg in the 1960s to an estimated 19.2 kg in 2012. This impressive development has been driven by a combination of population growth, rising incomes and



urbanization. It has also been facilitated by strong expansion of fish production and more efficient distribution channels. Marine, coastal and inland capture fisheries and aquaculture provide valuable sources of nutrition, commerce, recreation and employment to people throughout the world.

Small Island Developing States (SIDS) have a high level of intrinsic vulnerability related to external factors as they tend to be small, remote, exposed to environmental challenges and have a narrow resource base. Despite this, they have higher incomes than other least developed and landlocked developing countries. By virtually any measure, SIDS are among the world's hot spots in terms of sustainable development. However, there are concerns that the recent development progress made by SIDS might be jeopardized by major ongoing shocks. Their vulnerability has increased due to climate change and was most recently demonstrated by the global financial crisis of 2007–2010, the food and fuel crises of 2007–2008 and the large-scale natural disasters in 2009–2010. For example the food crisis has had a severe impact on the poor in SIDS, most of which are net food importers.

## SMALL ISLAND DEVELOPING STATES

SIDS are a group of countries that share similar sustainable development challenges, including small populations, limited resources, susceptibility to natural disasters, vulnerability to external shocks and excessive dependence on international trade. Their growth and development is often further blocked by high transportation and communication costs, disproportionately expensive public administration and infrastructure due to their small size, and little or no opportunity to create economies of scale. The Earth Summit in Rio de Janeiro in 1992 marked the first time that the special characteristics of SIDS were given significant attention and they were recognized as a distinct group. In 1994, the first Global Conference on the Sustainable Development of SIDS was held in Barbados under the auspices of the United Nations. It resulted in the adoption of the Barbados Programme of Action (BPOA) which recognized the unique and particular vulnerabilities of SIDS and identified the sustainable development challenges they face. The BPOA identified key areas requiring urgent action. In 2005, the high level international meeting in Mauritius reviewed the BPOA and adopted the Mauritius Strategy for its further implementation.

SIDS have placed sustainable development prominently on their agenda for twenty years and the BPOA and the Mauritius Strategy of Implementation have clearly outlined the way forward. The outcome document of Rio+20 reaffirms the special case of SIDS for sustainable development and calls for continued and enhanced efforts to assist SIDS in

implementing the BPOA and the Mauritius Strategy. Member States, in conjunction with other stakeholders, have identified several areas for priority attention for SIDS. These are, *inter alia*: Tourism, Water, Energy, Waste and small-scale Fisheries and Aquaculture.

Given this focus, the Blue Growth Initiative (BGI) for SIDS is a shared opportunity and responsibility and is expected to create a new sense of ownership of oceanic and island spaces, so that fisheries and aquaculture will be developed sustainably.

## FISHERIES, AQUACULTURE AND THE FAO GLOBAL BLUE GROWTH INITIATIVE

Fisheries and aquaculture make a significant contribution to food security and livelihoods of millions of people along the world's seashores and waterways. Global production was estimated at 153 million tonnes in 2012, supplying around 18.4 kg/capita per year and 16.5 percent of global animal proteins and essential micronutrients. Vulnerable populations in Low Income Food Deficiencies Countries rely even more on fish for their intake of animal proteins.

While fish production from capture fisheries has stagnated at around 88 to 90 million tonnes over recent years, the demand for fish and fishery products has continued to rise. This increasing demand has been steadily met by a robust increase in aquaculture production.

Around 56 million people are directly employed in fisheries and aquaculture and a further 140 million are employed along the value chain from harvesting to distribution. The livelihoods of some 880 million people depend on the sector. Employment in the fisheries and aquaculture sectors has grown faster than the world's population and faster than employment in traditional agriculture. Fish and seafood are one of the most traded food commodities. About 38 percent of the world production is involved in international trade, generating USD 134 billion in 2012. Over 53 percent of this trade originates in developing countries.

There is a strong framework for fisheries and aquaculture already in place with the FAO Code of Conduct for Responsible Fisheries (CCRF) and its related international agreements, guidelines and plans of action. The challenge is to provide incentives and adequate resources to adapt and implement this framework at local, national and regional level in order to secure political commitment and governance reform. This includes building effective institutions that result in the adoption of ecosystem approaches to fisheries and aquaculture with fair and responsible tenure systems.

Promoting responsible and sustainable fisheries and aquaculture is central to FAO's work and purpose. We

recognize that the health of our planet and our own health and future food security depend on how we treat the blue world. To provide wider ecosystem stewardship and improved governance of the sector, FAO is advancing the Blue Growth Initiative as a coherent framework for the sustainable and socio-economic management of our aquatic resources. Anchored in the principles set out in the benchmark Code of Conduct for Responsible Fisheries in 1995, Blue Growth focuses on capture fisheries, aquaculture, ecosystem services, trade and social protection. In line with FAO's Reviewed Strategic Framework, the initiative focuses on promoting the sustainable use and conservation of aquatic renewable resources in an economically, socially and environmentally responsible manner. It aims at reconciling and balancing priorities between growth and conservation, and between industrial and artisanal fisheries and aquaculture, ensuring equitable benefits for communities.



As a flagship programme of FAO, the Blue Growth Initiative has received wide recognition and enthusiastic support at various international fora, notably by Member States at the recent 31st Session of FAO's Committee on Fisheries in June 2014.

The FAO Global Blue Growth Initiative is composed of four key components: (i) marine and inland capture fisheries; (ii) aquaculture; (iii) livelihoods and foods systems; and (iv) economic growth from ecosystem services. These components are further described below, with particular consideration being paid to their relevance for SIDS.

## Marine, Coastal and Inland Capture Fisheries

This component aims at economic growth, food security and poverty reduction through strengthened fisheries management, reduced fishing capacity and proportion of overfished stocks, as well as improved aquatic ecosystems and habitats.

The substantive work would be based on implementation of the FAO Code of Conduct for Responsible Fisheries, the related International Plans of Action (IPOAs) (e.g. IPOA for managing fishing capacity, for IUU fishing), International Agreements and Guidelines, the Ecosystem Approach to Fisheries, the International Guidelines on Securing Sustainable Small-Scale Fisheries, the Committee on World Food Security (CFS), and the Voluntary Guidelines on Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security.

Implementation will be through cooperation with Regional Fisheries Bodies (RFBs), other multilateral organizations, other Initiatives, Member States, academia, the private sector, CSOs and other stakeholders. It will support strengthening and reform of policy and legislative framework at the national and regional levels providing policy, technical and capacity building support needed to Governments, RFBs and industry to ensure that an adequate institutional, scientific and legal framework is in place for introducing, supporting and enforcing tenure rights that respect the rights of present and future generations, addresses broader human rights principles when defining and allocating rights, and supports empowerment of fishing communities through social inclusion and capacity building.

Capture fisheries are the wealth of most SIDS and play a major role in many national economies, especially in the Pacific SIDS, where capture fisheries can contribute as much as 10 percent of GDP. Fish consumption there accounts for 50–90 percent of animal protein in the diet of coastal communities while national fish consumption can be as much as 3–4 times higher than the global average per capita. Many SIDS are heavily dependent on their fisheries resources for economic development, government revenue, food security and livelihoods, and are vulnerable to any change in the status of these resources. The future potential for economic development and government revenue within the fisheries sector is dominated by the harvesting of oceanic fish, particularly tuna. At the same time, more emphasis will need to be placed on coastal fisheries to supply fish for local consumption. In the Pacific region, for example, forecasts of the fish required in 2030 to meet recommended per capita fish consumption, or to maintain current consumption, indicate that even well managed coastal fisheries will only be able to meet the demand in 6 of 22 Pacific island countries.

## Aquaculture and the Global Aquaculture Advancement Partnership (GAAP)

The expected outcome of this component is economic growth, food security and poverty reduction through increased global aquaculture production to meet the greater demand for fish from a growing population.

The component will contribute to this aim by providing technical and capacity building support to governments and farmers to develop national strategies for aquaculture development, disseminate and adopt better management and governance policies and best practices that increase productivity and reduce environmental and disease risk to stimulate investment. In addition, the support provided through this component would help adoption of improved technologies including improved feed production, developing more resource efficient farming systems, developing and disseminating new strains and breeds for production, advancing regulatory reforms to enable better disease surveillance and enforcement at an ecosystem scale, including proper site selection, production density and avoidance of externalities on capture fisheries, as well as better water management. Public-private partnership will be actively explored.

Such measures would also be of relevance to the many developing countries where aquaculture is expanding rapidly, but where regulatory frameworks, including aquatic animal health services, are weak or inexistent. Opportunities that integrate aquaculture with agriculture and other resource users in the watershed will be encouraged. This includes, for example, aquaponics systems which are highly relevant for SIDS as they address issues of resource scarcity, especially water, support the sustainable intensification of agriculture and promote family farming. Results will be channeled through national projects in selected countries to demonstrate their efficacy and scaled-up.

For many SIDS, the promotion of aquaculture development for food security will be crucial. In the Caribbean, a recent paper on fisheries and aquaculture suggests that a Caribbean Blue Revolution is needed and possible. Aquaculture development can increase total fish production in the CARICOM states by 30 percent within 10 years if essential investments are made in enabling aquaculture policy and legal frameworks, supported by applied research, capacity building and information. Similarly, aquaculture has been proposed as a way to provide food security for Pacific SIDS. Legal and technical support for aquaculture development under the BGI is currently provided by the establishment of the Network for Aquaculture in Micronesia (MASA), and a similar regional and networking approach may be suitable for other regions.

## Livelihoods and Food Systems

The expected outcome of this component will be food security, sustainable livelihoods and social protection through strengthened trade and improved economic performance.

Despite the importance of fisheries and aquaculture for trade, consumption and employment significant inefficiencies still characterize these value chains, particularly in coastal and



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developing island nations. This is often due to a lack of skills, technology and infrastructure. These can cause significant post-harvest losses and reduce access to markets. A balance between fish export and food security objectives is also vital as those involved in small-scale fishing and fish farming are the most vulnerable and the poorest in many developing countries.

Within the context of the Blue Growth Initiative, fish utilization and trade will be integrated into government policies and the corporate social responsibility policies of industry encompassing sustainability, environmental and social protection.

This component of the Blue Growth Initiative will assist members and industry organizations to develop policies for value addition and trade promotion which integrate economic performance, food security, sustainability and social protection. Support would be provided to develop science-based standards for fish and fisheries products and to help Members and industry adopt and implement them (including for example, CODEX, eco-labelling, sustainability and traceability to combat IUU). Advice would be provided on prices and market trends, and capacity building would aim to improve handling practices, reduce fish losses and improve quality. For small-scale fisheries, support would target policies and capacity to secure fishing, social rights and welfare, access to microcredit and social protection programmes, reduce child labour and gender inequity. Improved livelihoods and enforced secured user rights should reduce the risk of expansion of fishing efforts.

Activities to support communities in promoting ecotourism and recreational fishing in coastal areas of SIDS in the Indian Ocean, as well as the Pacific and Caribbean regions would be targeted.





## Economic Growth from Ecosystem Services

The expected outcome of this component will be food security, sustainable livelihoods and social protection through the continued provision of ecosystem services and adaptation to climate change.

Oceans and waterways play a key role in atmospheric and climate regulation, while coastal areas provide flood protection, erosion control for low lying communities, and act as a sink for waste and nutrient disposal especially from agriculture. Several key coastal habitats, such as sea grasses and mangroves fix carbon at a much higher rate than land based systems. These 'blue carbon' sinks can sequester up to five times the amounts of carbon absorbed by tropical forests. They present an important opportunity for ecosystem based climate mitigation (known as 'blue carbon') which also preserves the essential ecosystem services of these habitats. Given the value of oceans in the context of restoring/protecting the carbon sequestration capacities of coastal habitats there is a viable market that could be created for carbon trading. However, significant efforts are required to develop this into reality. Blue carbon could be traded and handled in a similar way to green carbon (such as forest carbon under the UN collaborative initiative on Reducing Emissions from Deforestation and forest Degradation, UN-REDD) and entered into emission and climate mitigation protocols along with other carbon binding ecosystems.

Vital coastal habitats include those that provide breeding grounds and nurseries for fisheries, have strong biodiversity values and offer opportunities for sustainable human uses such as ecotourism and recreational fishing. Restoration of habitat and biodiversity may require protection measures including creating new Marine Protected Areas (MPAs) or a change of use to allow key values, including sustainable use, to be protected. In collaboration with other initiatives the Blue Growth initiative would assist in developing national regulatory regimes and approaches that include economic instruments (pollution taxes, payment for ecosystem services, etc.), the creation and dissemination of research, tools, capacity building, buy-in from industry and transition towards a blue economy. Ultimately, however, despite the best efforts of the global community, responsibility for the protection and restoration of vital coastal habitats will require action by Member States, as these habitats generally fall within national jurisdictions.

The Blue Growth Initiative would contribute expertise to SIDS in order to conduct and disseminate national and regional studies on carbon binding possibilities in sea grass beds, mangroves as defence against coastal erosion and storm and wave damage, fish-crop (rice, etc.) systems, seaweed cultivation and other possibilities.

## THE FAO BLUE GROWTH INITIATIVE AND SMALL ISLAND DEVELOPING STATES (SIDS)

Implementation of the four components of the Blue Growth Initiative is particularly important in SIDS which cover much of the tropical and subtropical Pacific Ocean, Indian Ocean and the Caribbean. The physical, biological and social diversity of SIDS; the demography of the regions; the nature of local economies and limitations to economic development; and the importance of oceanic, coastal and freshwater fisheries and aquaculture to economic development and government revenue all provide opportunities for fisheries, aquaculture, livelihoods and food systems economic growth from ecosystem services to be further developed. At the same time, it is essential for the SIDS to protect, restore and improve the health, productivity and resilience of oceans, coastal and inland ecosystems and to maintain their aquatic biodiversity. This will enable countries to sustainably use and manage aquatic resources for present and future generations.

Fish and fisheries are the mainstay of food security and the wealth of most SIDS. Many SIDS are heavily dependent on their oceanic and coastal fisheries resources for economic growth and development, as well as food security and livelihoods, and are vulnerable to any change in the state of these resources. The waters of the Pacific Islands region cover around 40 million square kilometres, or over 10 percent of

the Earth's surface (equivalent to about one third of the area of the Earth's land surface). These waters hold the world's largest stocks of tuna and also important stocks of sharks, billfish, marine mammals and turtles. The Pacific SIDS are custodians of a big part of this area which falls under their national jurisdiction. Tuna are a highly migratory fish and they travel vast distances across the Pacific, passing through the Exclusive Economic Zones of the Pacific SIDS, but also crossing areas Beyond National Jurisdiction, the so called High Seas. Of the 2.4 million tonnes of tuna caught in the Western Pacific Ocean, 1.4 million tonnes (58 percent) were taken in the waters of Pacific SIDS with a value of USD 2.8 billion. This provides a significant opportunity for Pacific SIDS to generate revenue and improve livelihoods. It also creates greater opportunities for future generations including higher levels of economic self-reliance. Within that total volume of catch, the share actually taken by SIDS domestic fleets and/or processed in SIDS facilities remains relatively small. Although this share has grown substantially in the past decade, it could be increased in line with principles of equity and SIDS development aspirations. At the same time, the importance of fish, especially from small-scale coastal fisheries, for food security and livelihoods of rural communities cannot be overestimated. Key challenges for the future are the need for an increased supply of fish from different sources to feed growing populations. Even well-managed coastal fisheries will only be able to meet the increased demand in some SIDS.

Aquaculture contributes to the economies of some SIDS, provides employment and improves livelihoods. Governments receive revenue from income taxes of people employed in the sector and from other charges. For example, for many years, French Polynesia imposed a tax on the export of black pearls. Other governments, e.g. Solomon Islands, have also benefited in a modest way from export duties on commodities such as bêche-de-mer, trochus, finfish, aquarium products and seaweed. Progressive development of small pond aquaculture occurs in areas with sufficient availability of fresh water, e.g. in Melanesia. Tilapia production provides substantial quantities of fish for household nutrition. Culture of Nile tilapia in ponds of 450–500 m<sup>2</sup> in Fiji can yield up to 500 kg of fish every 4–5 months, equivalent to about 25 tonnes per hectare, per year. Aquaculture is currently playing a crucial role in supplying fresh food and high quality proteins, as well as in increasing livelihoods in remote, isolated coastal and atoll communities in most Pacific countries. More than 500 farmers are involved in seaweed farming in the Solomon Islands, more than 15 000 tilapia farmers are operating in PNG and three are more than 1 000 seaweed farmers in seaweed and giant clam farming in Kiribati.

In the area of food security, trade and marketing within the Blue Growth Initiative, SIDS provide opportunity for household income, employment and food security. In

the Pacific SIDS, fish is a cornerstone of food security. The average annual consumption of fish (including shellfish) by coastal rural populations ranges from 30–118 kg per person in Melanesia to 62–115 kg in Micronesia and 50–146 kg in Polynesia. Even in urban centres, fish consumption usually greatly exceeds the global average of 16–18 kg per person per year. Throughout the Pacific SIDS, people are involved in the chain supplying fish and aquaculture commodities to local and export markets. Full-time jobs have been created through the development of domestic industrial tuna fleets and tuna processing operations within the region. Aquaculture in general, such as aquaculture of marine ornamental commodities (e.g. 'live rock', giant clams and corals), freshwater aquaculture (Nile tilapia and freshwater prawns) and seaweed farming also provide opportunities to earn income in several SIDS. In most cases, the artisanal and small-scale fisheries and aquaculture operations do not provide full-time employment for many people. However, they help diversify the income earned by households.

Another component of the Blue Growth Initiative that might be developed further in SIDS is the economic growth from ecosystem services such as tourism. The diverse SIDS economies and their typical oceanic island characteristics, particularly their geographic isolation, provide large potential for marine tourism development. Fiji in the Pacific SIDS, for example, has shown large marine tourism potential by combining tourist resort development with traditional coastal fishing villages. Aquaculture sites and traditional cultures have been combined with various marine tourism activities such as snorkelling, diving, fishing, sailing and surfing.

## THE WAY AHEAD

The implementation of the four components of the FAO Blue Growth Initiative is feasible in SIDS and should receive increasing attention. Fisheries, aquaculture, livelihoods and food system and ecosystem services can be initiated or further pursued in an integrated way in targeted pilot areas. Areas and regions for potential Blue Growth Initiative implementation should be selected. SIDS, together with Indonesia, Iran, Algeria and Morocco, may propose targeted pilot areas to be included in the FAO Blue Growth Initiative Implementation programme. The ongoing Blue Growth implementation in Lombok Island, Indonesia may be used as a reference and can be replicated for the Blue Growth implementation in SIDS. It includes the activities of tuna fisheries, shrimp culture, pearl oyster culture, seaweed culture, processing and marketing, salt ponds, rice-fish farming, mangrove forests, marine tourism and industrial estates; all supported by harbours, roads and energy supply infrastructures. A joint FAO-SIDS Conference may facilitate interaction in the future and serve as a platform for agreeing on joint implementation and discussing progress made.

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