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THE FAO BLUE GROWTH INITIATIVE: STRATEGY FOR THE DEVELOPMENT OF FISHERIES AND AQUACULTURE IN EASTERN AFRICA

THE FAO BLUE GROWTH INITIATIVE: STRATEGY FOR THE DEVELOPMENT OF FISHERIES AND AQUACULTURE IN EASTERN AFRICA

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The FAO Blue Growth Initiative: Strategy for the Development of Fisheries and Aquaculture in Eastern Africa, by Ana Menezes, Devin Bartley, Rebecca Metzner and Yaw Ansah. FAO Fisheries and Aquaculture Circular No. 1161, Rome, Italy.

ABSTRACT

As part of FAO's Blue Growth Initiative (BGI) the FAO Member Countries of the Eastern Africa Sub-Region met to agree on a strategy for the Development of Fisheries and Aquaculture within the Blue Growth Initiative in Eastern Africa (BGI Strategy). The BGI is an FAO flagship initiative that aims at supporting more productive, responsible and sustainable fisheries and aquaculture sectors by improving the governance and management of the aquatic ecosystems, by conserving biodiversity and habitats, and by empowering communities. The BGI is the sustainable growth and development emanating from economic activities in the oceans, wetlands and coastal zones that minimize environmental degradation, biodiversity loss and unsustainable use of living aquatic resources, and maximize economic and social benefits.

The Strategy includes 11 over-arching development objectives that are common to fisheries and aquaculture in marine and freshwater environments:

1. To enhance governance and management of fishery resources and aquatic ecosystems
2. To improve global and intra and inter trade and marketing of fish and fisheries products
3. To enhance production efficiency with reduced impacts on the environment
4. To create an enabling environment for the private sector and social support
5. To facilitate people involved in fisheries and aquaculture to utilize resources and to also play an active role in protecting and safeguarding these resources for the benefit of future generations
6. To conserve aquatic biodiversity and critical habitat
7. To empower communities and make them resilient to natural and human induced impacts
8. To enhance information and knowledge sharing, dissemination, collection and management
9. To develop Intra-regional synergies in management of transboundary resources and transfer of technology
10. To strengthen intra and inter regional collaboration
11. To enhance research and innovation

In addition the Strategy contains specific objectives and actions to achieve them for inland fisheries, marine fisheries and aquaculture. The actions were chosen to also address the four streams of the BGI: i) capture fisheries; ii) aquaculture; iii) ecosystem services contributing to livelihoods; and iv) trade, markets, post-harvest and social support. The actions further embrace the principles of the Green Economy and will lead to Blue Production, Blue Communities and Blue Fora.

Implementing a BG Strategy in Eastern Africa will require partnerships, collaboration with a variety of organizations. No one group has the full suite of needed knowledge and expertise in fisheries, aquaculture, trade, community development and maintenance of biodiversity and ecosystem services to implement the BG Strategy alone. Partners will include fisherfolk, national development agencies, governing bodies, regional economic commissions, regional fishery bodies, regional trade portals, intergovernmental organizations, non-governmental organizations and international development banks.

Sub-regional coordination and communication in awareness raising, project development, out-reach, extension, and engaging the private sector will be essential for the implementation of the BG Strategy. Policy and decision makers are encouraged to establish mechanisms to adapt the Blue Growth Strategy to the national priorities and opportunities.

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ABBREVIATIONS AND ACRONYMS

ADB	African Development Bank
AEM	African Eco-labelling mechanism
ARSO	African Standardization Organisation
AU	African Union
AU-IBAR	Interafrican Bureau for Animal Resources of the African Union
BG	Blue growth
BGI	Blue Growth Initiative
CAADP	Comprehensive Africa Agriculture Development Programme
CCRFA	Code of Conduct for Responsible Fisheries and Aquaculture
COFI	Committee on Fisheries
COMESA	Common Market for Eastern and Southern Africa
CORDIO	Coastal Oceans Research and Development
CPF	Country Programme Frameworks
CPUE	Overfishing and decreased catch per unit effort
CSO	Community Service Organizations
EA	ecosystem approach
EAC	East African Community
EDF	Environmental Defense Fund
EFMIS	Electronic Fish Market Information Service
EU	European Union
FAO	Food and Agriculture Organization
FIPs	fishery improvement projects
GEF	Global Environment Facility
GIZ	German Society for International Cooperation
GNI	Gross National Income
ICN	International Conference on Nutrition
ICZM	integrated coastal zone management
IDB	Islamic Development Bank
IFAD	International Fund for Agricultural Development
IGAD	Intergovernmental Authority on Development
INFOPECHE	Intergovernmental Organization for Marketing Information and Cooperation Service for Fishery Products in Africa
INFOSA	Marketing Information and Technical Advisory Services for the Fisheries Industry
IGAD	Intergovernmental Authority on Development
IGO	Inter-governmental Organisation
ILRI	International Livestock Research Institute
INGO	International Non-Governmental Organization
IOC	Indian Ocean Commission
IORA	Indian Ocean Rim Association
IOTC	Indian Ocean Tuna Commission
IUCN	International Union for Conservation of Nature
IUU	illegal, unregulated and unreported fishing
IWRM	integrated water resources management
JICA	Japan International Cooperation Agency
LVFO	Lake Victoria Fisheries Organization
MCS	monitoring control and surveillance
MMA	marine management area
MSP	marine spatial planning
NAqS	national aquaculture strategy
NEPAD	New Partnership for Africa's Development
NGO	non-Governmental Organization
PERSGA	Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden
PES	Payment for Ecosystem Services

R&D	Research and Development
RFB	Regional Fisheries Bodies
RFMO	Regional fisheries management organizations
UN	United Nations
SADC	Southern African Development Community
SARNISSA	Sustainable Aquaculture Research Networks for Sub-Saharan Africa
SDG	Sustainable Development Goal
SIDS	small island developing States
SSF	sustainable small scale fisheries
SWIOFC	Southwest Indian Ocean Fisheries Commission
TNC	The Nature Conservancy
UNFCCC	United Nations Framework Convention on Climate Change
USA	United States of America
USAID	United States Agency for International Development
VGGT	voluntary guidelines for responsible governance of tenure of land, fisheries and forests
WB	World Bank
WIOMSA	Western Indian Ocean Marine Science Association
WWF	World Wildlife Fund

1 INTRODUCTION

The Blue Growth Initiative (BGI) is an outcome of the Rio+20 discussions and is based on the concept of the Green Economy¹ and on the principles of the Code of Conduct for Responsible Fisheries. The BGI is an FAO flagship initiative that aims at supporting more productive, responsible and sustainable fisheries and aquaculture sectors by improving the governance and management of the aquatic ecosystems, by conserving biodiversity and habitats, and by empowering communities. The initiative has four streams to achieve responsible fisheries and aquaculture:

- Capture fisheries;
- Aquaculture;
- Ecosystem services contributing to livelihoods; and
- Trade, markets, post-harvest and social support.

The BGI has received recognition and support from various international fora, and most notably by FAO Member States at the 31st Session of FAO's Committee on Fisheries in June, 2014.

As part of the BGI that is being initiated in various regions around the world,² the Sub-Regional Office for Eastern Africa (FAOSFE) and the FAO Member Countries of the Eastern Africa Sub-Region agreed on the development of a Blue Growth (BG) Strategy for the Development of Fisheries and Aquaculture in Eastern Africa within the Blue Growth Initiative.³

The Eastern Africa Sub-Region is an extremely diverse sub-region in terms of fisheries and aquaculture capacity, natural resources and habitats, and in terms of economic development. The sub-regions population is steadily growing (Figure 1) and economic growth has been uneven (Figure 2).

¹<http://web.unep.org/greeneconomy/>; https://en.wikipedia.org/wiki/Green_economy² www.fao.org/fishery/en

² www.fao.org/fishery/en

³ The BGI Strategy was developed by participants of the Consultative Meeting on the “Blue Growth Strategy for the Development of the Fisheries and Aquaculture Sectors in Eastern Africa” Addis Ababa, Ethiopia, 29–31 March 2017.

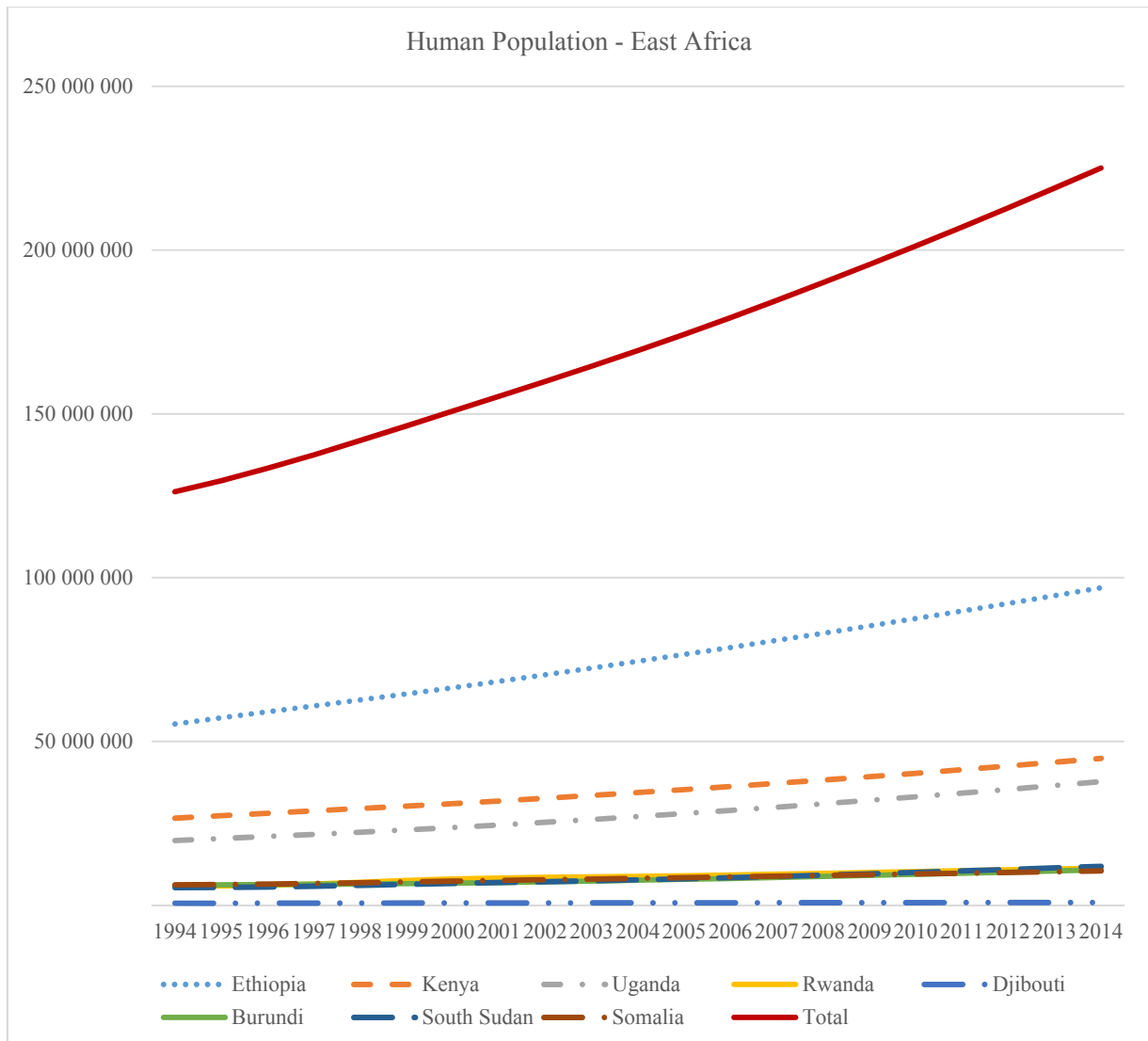


Figure 1. Human population growth in Easter Africa⁴

⁴http://databank.worldbank.org/data/reports.aspx?Code=SP.POP.TOTL&id=af3ce82b&report_name=Popular_indicators&populartype=series&ispopular=y#

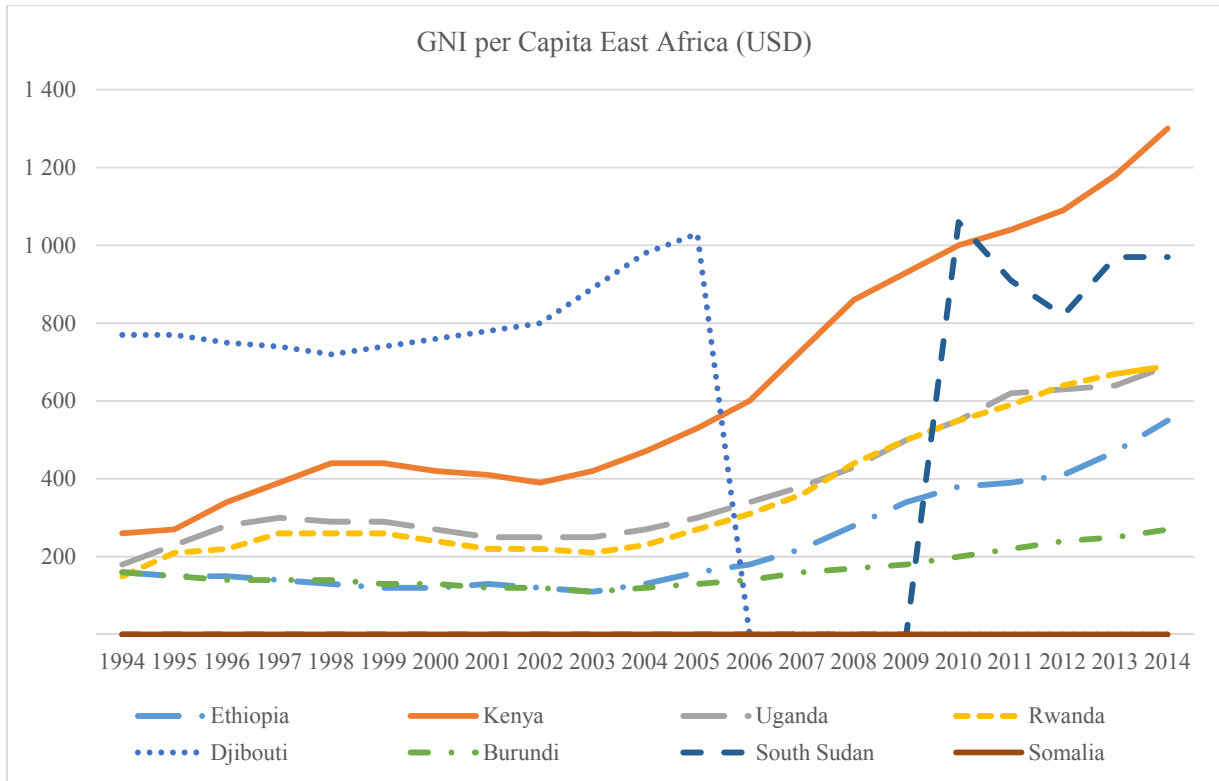


Figure 2. Gross National Income in Eastern Africa (USD)

The sub-region contains diverse tropical and subtropical aquatic habitats including xeric wetlands, swamps, large lakes, major river systems, high montane lakes, closed basins and coastal rivers as well as the marine coastal habitats of the Red Sea and Gulf of Aden and the Indian Ocean.⁵ The fishery resources of many of these habitats are poorly known.

The inland capture fisheries sector is growing and is the major producer of fish for the sub-region. (Figures 3 and 4). Production from marine fisheries has not increased in decades and aquaculture is increasing slowly, and only one country reported marine aquaculture for this workshop. Small-scale fisheries employ the majority of fishers and fish workers in the East African region and contribute substantially to food security and livelihoods through their role in providing nutritious food and generating local and national incomes.

There are many aquatic resources that are shared by two or more countries and consequently, the sub-regional and transboundary aspects of the strategy and small-scale fisheries are important.⁶

⁵ www.feow.org/globalmap

⁶ East Africa Consultation Workshop on Improving Small-Scale Fisheries in the Context of Food Security and Poverty Eradication – www.fao.org/3/a-i6751e.pdf

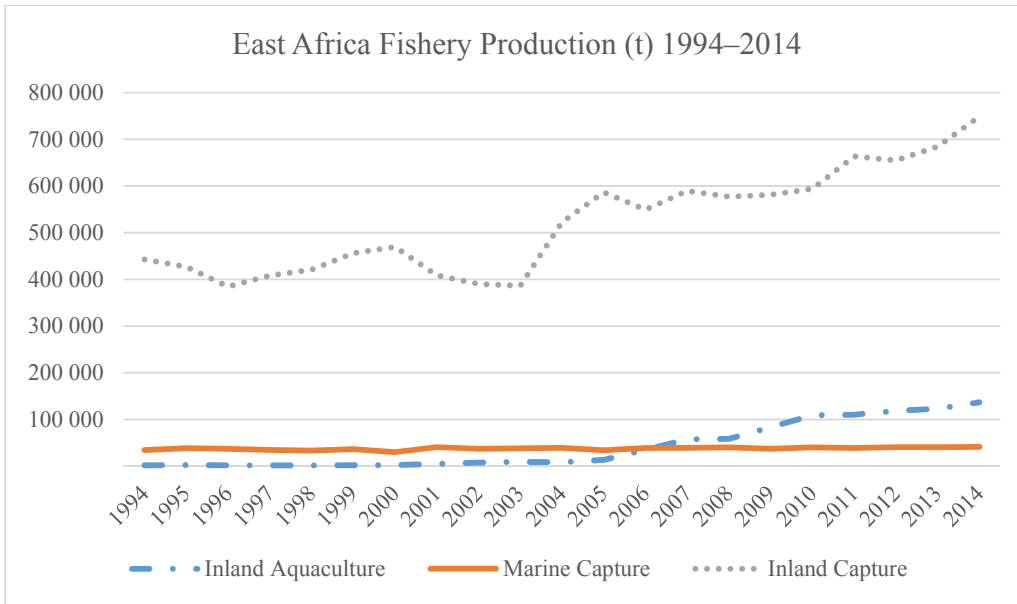


Figure 3. Fish production in Eastern Africa

Production by country further reveals the diversity of the sub-sectors in the sub-region (Figure 4).

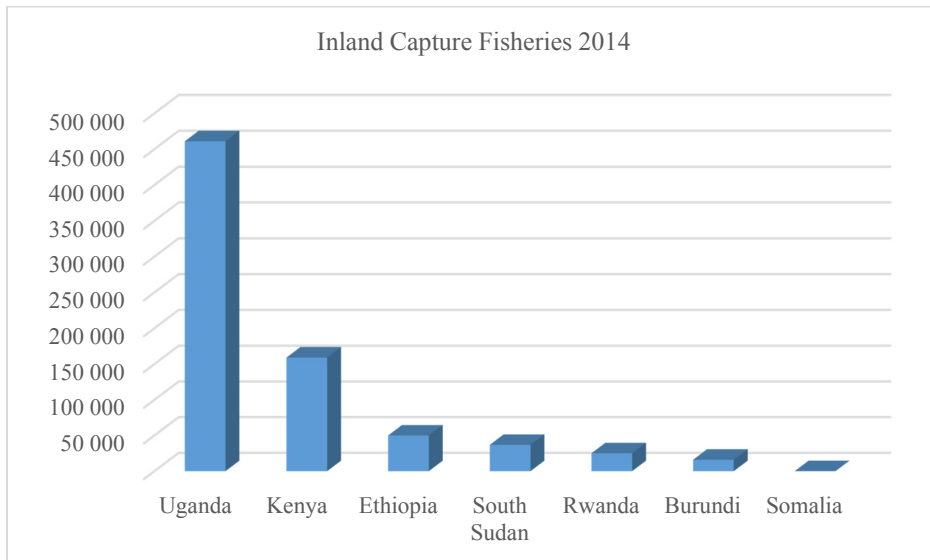


Figure 4. Fishery production in Eastern Africa by country

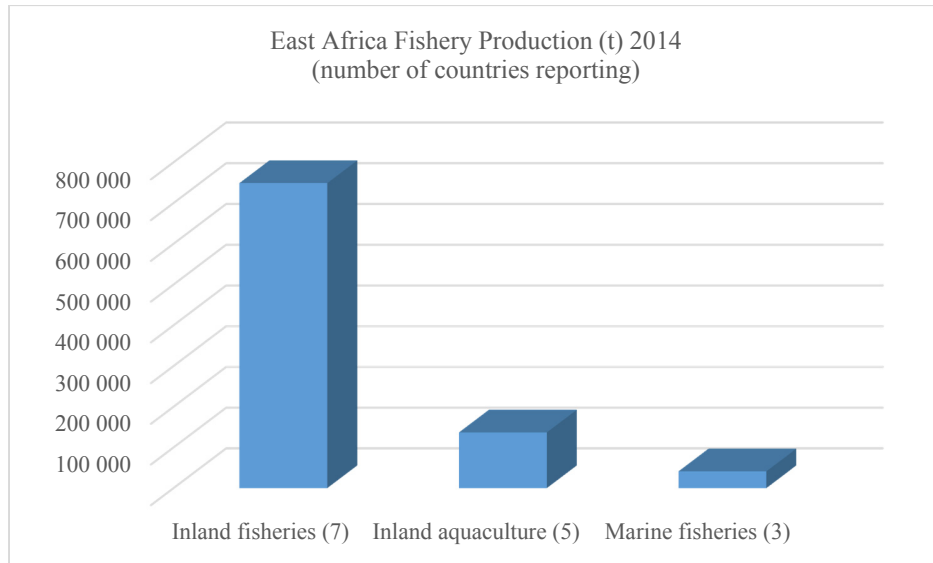


Figure 5a. Fishery production in Eastern Africa

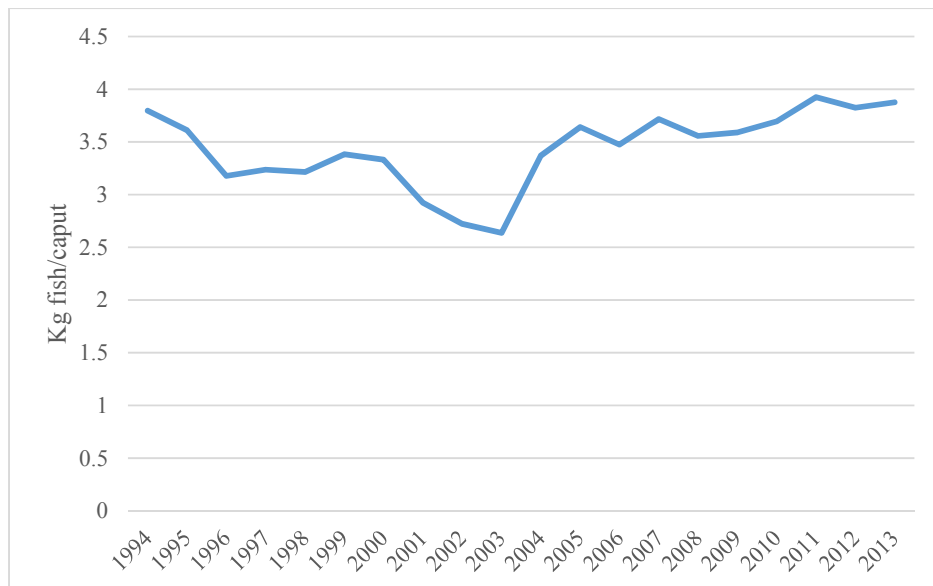


Figure 5b. Per capita fish supply in Eastern Africa (FAO Stat [www.fao.org/faostat/en] based on supply of crustaceans demersal fish, freshwater fish, marine fish and pelagic fish; supply of molluscs was negligible)

Fish supply (a proxy for fish consumption) in the sub-region has declined in some areas, but has remained relatively constant over the last 10 years at between 4–5 kg/person/year (Figure 5a and Figure 5b). However, given general projections for increased wealth and the awareness of fish as an excellent and affordable source of nutrition, demand for fish and fish products is expected to increase.

2 THE BG STRATEGY IN EASTERN AFRICA

The goals of the BG Strategy are to raise the profile of the fisheries and aquaculture sectors and to improve the sector's contribution to Eastern Africa's i) food and nutrition security; ii) poverty reduction; iii)

economic growth; iv) balance of trade; and v) the conservation and stewardship of biodiversity and aquatic habitats.

The BG Strategy is based on the general principles of FAO's Blue Growth Initiative, the FAO Code of Conduct for Responsible Fisheries, the Strategic Objectives of FAO, the UN Sustainable Development Goals⁷ and several recent regional and international instruments.⁸ BG Strategy promotes sustainable development and growth from economic activities in the fisheries and aquaculture sector that minimize environmental degradation, biodiversity loss and unsustainable use of resources, whilst maximizing economic, cultural and social benefits. The BG Strategy covers capture fisheries and aquaculture in marine and freshwater habitats. The BG Strategy strives to address the diversity of the sub-region by further promoting inter and intra-regional collaboration.

The BG Strategy includes over-arching development objectives that are common to fisheries and aquaculture in marine and freshwater environments (Box 1) as well as specific objectives for each sub-sector. The actions identified to achieve the objectives further address the four streams of the BG: i) capture fisheries; ii) aquaculture; iii) ecosystem services contributing to livelihoods; and iv) trade, markets, post-harvest and social support.

Many – if not all – of the actions relevant achieving these objectives will be as relevant for inland fisheries as for marine fisheries, and, maintaining or rehabilitating habitats and ecosystem services will in many cases also benefit aquaculture as well as capture fisheries.

Box 1. Over-arching objectives for the Blue Growth Strategy in Eastern Africa

1. To enhance governance and management of fishery resources and aquatic ecosystems;
2. To improve global, intra- and inter-regional trade and marketing of fish and fisheries products;
3. To enhance production efficiency with reduced impacts on the environment;
4. To create an enabling environment for the private sector and social support ;
5. To facilitate the people involved in fisheries and aquaculture to utilize resources and to also play an active role in protecting and safeguarding these resources for the benefit of future generations;
6. To conserve aquatic biodiversity and critical habitat;
7. To empower communities and make them resilient to natural and human induced impacts;
8. To enhance information and knowledge sharing, dissemination, collection and management;
9. To develop intra-regional synergies in the management of transboundary resources and transfer of technology;
10. To strengthen intra- and inter-regional collaboration; and
11. To enhance research and innovation.

2.1 Blue Growth Strategy for Inland Capture Fisheries in Eastern Africa

The inland capture fisheries sector provides most of the sub-region's fishery production. However, because of the many small-scale fishers operating seasonally and in remote areas, information is difficult to collect on what is being harvested, making the sector a challenge to manage. The eleven over-arching objectives of the BG Strategy (Box 1) apply to Inland Fisheries.

Objectives specific to inland fisheries address i) fishery production, ii) information, iii) governance and management, iv) marketing and trade, and v) community development.

⁷ www.undp.org/content/undp/en/home/sustainable-development-goals.html

⁸ See background paper.

Objectives related to responsible inland fish production are:

- Increase production and productivity with reduced environmental impacts through appropriate fishing gear and practices
- To improve adaptation to and mitigation of climate change through innovative technology
- To improve research and innovation for improved production
- To improve the management and trade in ornamental aquatic species

Specific objectives related to governance and management are:

- To engage land and water users outside the fishery sector for improve management of watersheds to provide food, maintain biodiversity and preserve ecosystem services
- To establish functioning co-management programmes
- To strengthen sub-regional corporation on trans-boundary issues
- To manage and control non-native and invasive species in the watershed

Specific objectives for marketing and trade are:

- To improve the quality of fish and fish products through improved and harmonized sanitary and phyto-sanitary measures
- To develop and improve trade and marketing of ornamental aquatic species

Specific objectives related to information are:

- To increase fisheries resource monitoring to guide management decisions
- To promote fish consumption for improved nutrition
- To incorporate indigenous knowledge in fisheries management and processing

Specific objectives for community development are:

- To promote behavioral changes in fishing communities for responsible fisheries
- To promote recreational fishing and ecotourism
- To develop effective Public Private Partnerships

The actions to implement the above objectives are all aligned with the four streams of FAO's Blue Growth Initiative as shown in Table 1. The actions in the far left column are grouped into broad categories. Each action can address several of the over-arching and specific objectives of the BGI Strategy and one or more of the Blue Growth Initiative streams. Policy and decision makers can use Table 1 to see how each of the actions meets the objectives of the BG Strategy as well as how the action aligns with the streams of FAO's Blue Growth Initiative.

Table 1. Actions for Blue Growth in inland fisheries

Actions to support implementation of the BG Strategy for Eastern Africa	Streams within the FAO Blue Growth Initiative			
	Capture Fisheries	Aqua-culture	Ecosystem services contributing to livelihoods	Trade, markets, post-harvest and social support
Responsible inland fish production				
Production from inland capture fisheries will be based on an ecosystem approach that considers the status of the fish stocks and appropriate fishing technologies. Often there is over capacity on many of the sub-region's fisheries that reduces the fish stocks and reduced economic gains from the fishery. Stock enhancement through aquaculture and/or habitat improvement will help, but fishing capacity may need to be reduced in some areas.				

Actions to support implementation of the BG Strategy for Eastern Africa	Streams within the FAO Blue Growth Initiative			
	Capture Fisheries	Aqua-culture	Ecosystem services contributing to livelihoods	Trade, markets, post-harvest and social support
<p>How: Government resource managers, researchers and development agencies will work together to identify priority fisheries and to develop best fishing practices based on the status of the stock. Fishery management plans will be developed and stock enhancement activities can be undertaken once the implementation of a management plan is underway to monitor and assess the fishery and any enhancements. An economically viable fishery that is sustainable both environmentally and economically will serve as a model for further Blue Growth.</p>				
1. Conduct stock enhancement for appropriate species	X	X		
2. Train fishers in good fishing practices	X			X
3. Implement buy-out schemes to reduce fishing capacity and illegal gears	X		X	
Governance and Management				
<p>Governance is the overarching mechanism coordinating environmental well-being, i.e. conservation of habitats, ecosystem services and biodiversity, and human well-being, i.e. economic, social and cultural development. Management of fisheries and importantly for inland fisheries, water and land management will depend on effective governance and the ability to enforce regulations and policies.</p> <p>How: Often good policies and management exist, but are not communicated to the appropriate level or to all involved sectors. Governments and development agencies should strengthen cross-sectoral communication and understand the needs of fishers and fish workers through stakeholder engagement/participatory processes. Fishing associations and civil society organizations will be especially useful in information exchange and further in assisting with on-the-ground fishery management and enforcement. Guidelines on small scale fisheries and on governance and tenure will further help the transition to Blue Growth.</p>				
4. Create or improve mechanisms at various levels of governance for planning, policy harmonization and info exchange	X		X	X
5. Harmonize fisheries management regulations	X			X
6. Strengthen co-management structure and intra and interagency collaboration,	X			
7. Create Fishery Management Bodies where needed	X			X
8. Develop Standard Operating Procedures and laws to enforce them	X	X		X
9. Develop policy for biodiversity conservation	X	X	X	X
10. Review fisheries biodiversity for potential listing under CITES and IUCN	X	X		X
11. Invest in habitat rehabilitation and conservation	X	X	X	
12. identify and protect critical habitat and migratory routes	X	X	X	
13. Develop and disseminate guidelines for managing aquatic ecosystems.	X	X	X	
14. Conduct valuation studies on ecosystem services	X	X	X	
15. Integrate fisheries into dam and irrigation planning and design	X	X	X	
16. Establish MCS strategy and systems	X			
17. Conduct fish stock assessment on key species	X		X	X
18. Monitor and control invasive species and develop guidelines	X	X	X	X
19. Harmonize policies on species introduction within the region	X	X	X	X

Actions to support implementation of the BG Strategy for Eastern Africa	Streams within the FAO Blue Growth Initiative			
	Capture Fisheries	Aqua-culture	Ecosystem services contributing to livelihoods	Trade, markets, post-harvest and social support
Marketing and Trade				
Trade in fish and fishery products from inland fisheries is important at local, sub-regional, regional and international levels. However, few fish products are traded within the sub-region. Trade is often constrained by lack of fish quality assurance, value addition. However, increased trade within the sub-region and the region has been identified as a means for greater economic returns from inland fisheries.				
How: Government and private industry will work with traders, fish quality assessors and certification schemes to analyze markets and trade opportunities. Promotion of certification and eco-labelling schemes and facilitating access to them by small scale fishers and business will help ensure the small holder sector are included in development and understand how to increase economic returns from trade.				
20. Conduct physical /chemical assessment of traded fish and fish products and standardize protocols for the assessments	X	X	X	X
21. Develop guidelines and standards for product development along the value chain	X			X
22. Create traceability program for regional trade	X			X
23. Create or improve fishing associations along the value chains	X			X
24. Support eco-labeling scheme for regional trade	X		X	X
25. Develop new and improved products	X			X
26. Conduct market and trends analysis	X	X		X
27. Conduct national and regional SPS meetings for developing and harmonizing SPS protocols and building capacity	X	X		X
28. Establish SPS infrastructures such as laboratories and testing kits	X	X		X
29. Establish cold chain facilities	X	X		X
30. Establish processing facilities	X	X		X
31. Provide inspection services	X	X		X
32. Conduct aquarium fish trade analysis to assess viability.	X	X		X
33. Identify and support business incubation centers	X			X
Information				
Blue growth requires accurate and up to date information on all components of the fishery sector. However, knowledge on the catch and economic value of inland fisheries is often incomplete due to the nature of many inland capture fisheries that are small-scale, seasonal, bartered rather than sold in the formal economy, and are often dispersed over large areas with few standardized landing sites, The value of inland fisheries as an inexpensive source of good nutrition and as an activity with a low carbon footprint is unappreciated by many governments and development agencies.				
How: Members of FAO have agreed to provide fishery statistics and FAO and other development agencies will work with countries to develop or improve fishery assessments and monitoring using practical information technologies and informed fishery resource managers. Local fishers will also be involved to provide indigenous knowledge. Additionally, novel technologies such as fishery modelling of habitats, food consumption surveys and remote sensing will be used to improve information on inland fisheries.				
34. Establish a database of fishers	X			X
35. Undertake research in appropriate technologies for climate change mitigation and adaptation	X		X	

Actions to support implementation of the BG Strategy for Eastern Africa	Streams within the FAO Blue Growth Initiative			
	Capture Fisheries	Aqua-culture	Ecosystem services contributing to livelihoods	Trade, markets, post-harvest and social support
36. Advocate, create awareness of inland fishery as a low carbon footprint activity	X		X	X
37. Conduct an assessment of the indigenous knowledge base on fishing and processing and integrate into management and processing as appropriate	X		X	X
38. Disseminate knowledge among stakeholders	X		X	X
39. Conduct socio-economic surveys on the value of inland fishery products to society and nature	X	X		X
40. Develop and implement communication strategy	X	X	X	X
41. Address the stigma and poor attitude toward fish that exists in some areas	X	X		X
42. Conduct research on fish consumption for example by household surveys	X	X		X
43. Map and demarcate watershed and buffer zones	X	X	X	X
44. Assess potential Ramsar sites within the sub-region	X	X	X	X
45. Develop community and school awareness programme.	X		X	
46. Identify aquarium fish species for the aquarium trade	X	X	X	X
47. Conduct frame surveys, catch assessment, hydroacoustic surveys on key fisheries	X			
48. Identify existing centres of excellence on fishing issues	X	X		X
49. Establish a BGI network within the sub region	X	X	X	X
50. Facilitate expertise exchange and study tours within sub region	X	X	X	X
51. Establish intraregional forum to share information	X	X	X	X
52. Assess recreational fishing potential	X		X	
53. Create awareness on potential role of recreational fishing as an alternative livelihood	X		X	X
Community development				
<p>Strong and resilient communities are essential to long-term blue growth. The contribution of women, children, seasonal and full-time fishers and fish workers are essential, but often over-looked or under-appreciated components of fishing communities. To achieve sustainable fisheries, fishing capacity may need to be reduced in some areas and these fishers will need to find alternate employment in the community and the community will need to develop coping strategies.</p> <p>How: Government, development agencies and the private sector will work together to evaluate the needs and capabilities of fishing communities. Improved education, especially for women, will help communities take advantage of new opportunities and transition to Blue Growth. Additional training in fish handling, value addition to fish products and marketing will further help communities develop.</p>				
54. Conduct gender and equity analysis along the fish value chain	X	X		X
55. Identify stakeholders to undertake needs and capacity assessment	X			X
56. Conduct vulnerability assessments of fishing communities	X			X
57. Develop livelihood coping mechanisms and alternative livelihoods	X	X		X
58. Address and correct traditional practices preventing women from working in fisheries	X	X		X

Actions to support implementation of the BG Strategy for Eastern Africa	Streams within the FAO Blue Growth Initiative			
	Capture Fisheries	Aqua-culture	Ecosystem services contributing to livelihoods	Trade, markets, post-harvest and social support
59. Support/develop day care facilities	X	X		X
60. Develop policies to enable PPP	X	X		X
61. Develop joint investment plans with communities, government and investors	X	X		X
62. Develop credit and loan facilities and guarantees	X	X		X
63. Provide social protection subsidies, insurance	X	X		X
64. Develop education/literacy programmes	X	X	X	X
65. Support community demand driven initiatives	X	X	X	X
66. Provide training on financial management-loans and credit	X	X		X
67. Train communities in fish collection, breeding and transport and marketing	X	X		X
68. Organize fishing communities to link with existing tourism agencies and if appropriate establish tourism facilities, including selling fishing products and gear	X			X

2.2 Blue Growth Strategy for Marine Capture Fisheries in Eastern Africa

Although the inland capture fisheries sector provides most of the sub-region's fishery production, the marine sector is comprised of both small-scale and large-scale fisheries and fishing operations. The marine capture fisheries of the sub-region thus provide key food security and nutrition to both remote and developed and urban areas. They also provide livelihoods to the range of small and remote to large communities. Moreover, the seasonal and migratory nature of many of the fisheries, coupled with the remote nature of much of the coastline, information is difficult to collect on what is being harvested.

This diversity means that the eleven over-arching objectives of the BG Strategy (Box 1) all apply to marine capture fisheries.

For marine capture fisheries the five highest priority objectives in the BG Strategy for Eastern Africa are to:

1. Ensure the sustainable exploitation of the marine fishery resource through responsible governance and management, through:
 - a. Ecosystem based management EAF biodiversity, environment, etc.
 - b. Equitable sharing of current and future benefits
 - c. development of policies, legal frameworks and their implementation for an enabling environment
 - d. Strengthening inter and intra-regional collaboration
2. Deliver food security and nutrition, through:
 - a. Promotion of fish consumption
 - b. Increased production
3. Operate responsible fisheries, by:
 - a. Incorporating the responsibility and accountability of relevant stakeholders
 - b. Minimise pressure on the resource
4. Facilitate sustainable trade, through:

- a. Improvements in quality assurance
- b. Facilitation of intra-regional trade
- c. Alignment with global and Inter-regional trade
- d. Improved value chains including logistics and infrastructure
- e. Increased accessibility to intra, inter, and global markets
5. Minimize post-harvest losses and food waste as a means of:
 - a. Minimizing economic losses and food waste through good fish handling practices
 - b. Ensuring long-term economic and social benefits from fisheries occur along value chain
6. Enable and facilitate information sharing, dissemination, collection, management

The actions to implement the above objectives are all aligned with the four streams of FAO's Blue Growth Initiative as shown in Table 2. The actions in the far left column are grouped into broad categories, and each action can address several of the over-arching and specific objectives of the BG Strategy and one or more of the Blue Growth Initiative streams.

Policy and decision makers can use Table 2 to see how each of the actions meets the objectives of the BG Strategy as well as how the action aligns with the streams of FAO's Blue Growth Initiative.

Table 2. Actions for Blue Growth in Marine Fisheries

	Streams within the FAO Blue Growth Initiative			
	Capture fisheries	Aqua-culture	Ecosystem services contributing to livelihoods	Trade, markets, post-harvest and social support
Actions to support implementation of the BG Strategy for Eastern Africa				
ENSURE THE SUSTAINABLE EXPLOITATION OF THE MARINE FISHERY RESOURCE THROUGH RESPONSIBLE GOVERNANCE AND MANAGEMENT				
How: Fisheries stakeholders – governments, fisherfolk, communities – and fisheries related stakeholders work together to bring the three pillars of sustainable development together using biological, economic and social best practices.				
1. Ecosystem (biodiversity, environment, etc.)	X		X	
2. Fishery valuation	X		X	
3. Undertake stock assessments	X			
4. Design and implement Fishery Improvement Projects (FIPs)	X	X	X	X
5. Undertake ecosystem improvements, e.g. mangrove restoration, coral planting etc.	X			
6. Awareness Creation of the links between fisheries, biodiversity, resilience, food security and social security	X	X	X	
7. Use Marine Management Area (MMAs)	X	X	X	X
8. Design Integrated Coastal Zone Management (ICZM)	X	X	X	X
9. Adopt Marine Spatial Planning (MSP)	X	X	X	
10. Use Best Management Approaches	X			
11. Explore Payment for Ecosystem Services (PES), Wealth-based Management	X			

Actions to support implementation of the BG Strategy for Eastern Africa	Streams within the FAO Blue Growth Initiative			
	Capture fisheries	Aqua-culture	Ecosystem services contributing to livelihoods	Trade, markets, post-harvest and social support
DELIVER FOOD SECURITY AND NUTRITION				
<p>How: Trade in fish and fish products from capture fisheries is important at local, sub-regional, regional and international levels. Trade is often constrained by lack of fish quality assurance, lack of value addition. However, increased trade within the sub-region and the region has been identified as a means for greater economic returns from capture fisheries.</p> <p>Government and private industry will work with traders, fish quality assessors and certification schemes to analyze markets and trade opportunities. Promotion of certification and ecolabeling schemes and facilitating access to them by small scale fishers and business will help ensure the small holder sector are included in development and understand how to increase economic returns from trade.</p>				
Promotion of fish as nutritious	X	X		
OPERATE RESPONSIBLE FISHERIES				
<p>How: Governments, intergovernmental organizations, fisheries stakeholders will work together to set up the necessary policy, institutional and legal frameworks <i>and</i> the necessary operational and management activities to ensure socially, environmentally and biologically responsible fisheries, taking into account existing international instruments, norms and guidance.</p>				
13. Follow the Voluntary Guidelines for Securing Sustainable Small-scale Fisheries for Securing Sustainable Small scale Fisheries (SSF Guidelines)	X		X	X
14. Follow the Voluntary Guidelines for Responsible Governance of Tenure of Land, Fisheries and Forests (VGGT)	X	X	X	
15. Use and ecosystem approach in the management of fisheries.	X		X	X
16. Enhance economic viability	X		X	X
17. Equitable (social) development of fisheries stakeholders	X			
18. Ensure access to resources (recognize tenure and user rights)	X			
19. Undertake Economic Valuation	X			X
20. Consider SDG-14b Access to resources	X		X	X
21. MCS (fighting IUU etc.)	X			X
22. Develop harmonized inspection procedures for MCS Port State inspections	X			X
23. Develop/review broad policies, legislation and fisheries management plans (2 way approach)	X			X
24. Trade markets, post-harvest and social support	X			X

	Streams within the FAO Blue Growth Initiative			
Actions to support implementation of the BG Strategy for Eastern Africa	Capture fisheries	Aqua-culture	Ecosystem services contributing to livelihoods	Trade, markets, post-harvest and social support
<p>FACILITATE SUSTAINABLE TRADE</p> <p>Trade in fish and fish products from marine capture fisheries is important at local, sub-regional, regional and international levels and occurs both formally and informally. Formal trade is often constrained by lack of fish quality and quality assurance, and frequently lacks value addition. Nonetheless, increased trade within the sub-region and the region has been identified as a means for greater economic returns from marine fisheries.</p> <p>How: Government, fisheries stakeholders and private industry will work with traders, fish quality assessors to analyze markets and trade opportunities, including certification schemes. Uptake of certification and ecolabeling schemes – accompanied with facilitated access to them by small scale fishers and business – will help ensure the small-scale sector are included in development and understand how to increase economic returns from trade. Improved access to markets and market information systems will help the distribution of benefits more evenly and to more stakeholders along the value chain.</p>				
25. Ensure Quality assurance of fish and fishery products	X	X		X
26. Development and promotion of harmonised minimal standards for inter and intra-regional trade	X			
27. SDG-14b access to markets for artisanal fishers	X			
28. Development of market information systems				
29. Improvements along the value chain, including logistics	X			
30. Increase accessibility to markets	X			
31. Increase physical access to markets	X			
<p>MINIMIZE POST-HARVEST LOSSES AND FOOD WASTE</p> <p>How: Governments, non-governmental institutions can work with fisheries stakeholders to reduce post-harvest losses through sharing information on best practices and essential infrastructure improvements. The benefits to stakeholders, both in terms of reduced losses and waste, will help to improve economic gains and reduce pressure on the resources.</p>				
32. Minimise economic losses	X			
33. Minimise pressure on the resource	X	X		
34. Improvement of cold chain infrastructure	X	X		
35. Development of standards	X	X		
36. Promotion of value addition	X	X		

	Streams within the FAO Blue Growth Initiative			
Actions to support implementation of the BG Strategy for Eastern Africa	Capture fisheries	Aqua-culture	Ecosystem services contributing to livelihoods	Trade, markets, post-harvest and social support
INFORMATION				
Blue growth requires accurate and up to date information on all components of the capture fishery sector <i>and</i> those sectors with which it directly and indirectly interacts. Frequently, knowledge on the catch and economic value of fisheries is often incomplete for a myriad of reasons, The value of capture fisheries, and particularly small-scale fisheries, as an inexpensive source of good nutrition and as an activity with a low carbon footprint is unappreciated by many governments and development agencies.				
How: Members of FAO have agreed to provide fishery statistics and FAO and other development agencies will work with countries to develop or improve fishery assessments and monitoring using practical information technologies and informed fishery resource managers. Local fishers should be involved to provide indigenous and traditional knowledge.				
However, information goes beyond statistics. Experience and knowledge sharing through social networks, exchanges and platforms will facilitate first hand learning and knowledge building from local to international levels.				
37. Strengthen Inter and Intra-Regional Collaboration	X			
38. Information: develop fisheries information system (Sharing; Dissemination; Collection; Management)	X	X		
39. Exchange programmes within and between stakeholder groups	X	X		
40. Create networks and connections (intra-regional)	X	X		
41. Strengthen the innovative capacity of the region	X	X		

2.3 Blue Growth Strategy for Aquaculture in Eastern Africa

The over-arching objectives of the BG Strategy (Box 1) equally apply to aquaculture:

The successful production of any agriculture sector including aquaculture requires the provision of inputs (such as finance, seed, feed, fertilizer, etc.), delivery of extension advice/information, upgrading management capacities, markets etc. This is true of policy and planning, sectoral promotion and extension/services delivery.

Aquaculture Development requires the work and coordination of several institutions, including Human Resources Development. While medium and large aquaculture can and shall develop on its own, small scale-farm aquaculture can only develop when integrated in the overall farming system. Hence, aquaculture actions in the BG Strategy address both the transformation of Aquaculture into business enterprises, and the aquaculture farming to create resilient communities without large-scale commercial objectives.

The actions to implement the above objectives are all aligned with the four streams of FAO's Blue Growth Initiative as shown in Table 3. The actions in the far left column are grouped into broad categories. Each action can address several of the over-arching and specific objectives of the BG Strategy and one or more of the Blue Growth Initiative streams. Policy and decision makers can use Table 3 to see how each of the actions meets the objectives of the BG Strategy as well as how the action aligns with the streams of FAO's Blue Growth Initiative.

Table 3. Actions for Blue Growth in Aquaculture

Actions to support implementation of the BG Strategy for Eastern Africa	Blue Growth Stream			
	Capture fisheries	Aqua-culture	Ecosystem services contributing to livelihoods	Trade, markets, post-harvest and social support
<p>INSTITUTIONS AND HUMAN RESOURCES DEVELOPMENT Build/ enhance Institutional capacity (infrastructural and human capital) and technical capacity and expertise of the different actors in the aquaculture sector</p> <p>How: Effective networking between teaching institutions, researchers and producers will be encouraged as a guarantee that curricula remain relevant and stay abreast of developments in aquaculture practice; this will include developing national, regional and international linkages with institutions involved in aspects of training for aquaculture. This will aim to ensure complementarity of opportunities and clear progression of education: Certificate → Diploma → Degree → Back to the job market.</p>				
<p>Good Education and Training on Aquaculture</p> <p>Curricula will be developed/ reviewed to provide a coherent progression certificate-diploma-degree, and cover an up-to-date range of aquaculture production techniques, aquaculture engineering and aquaculture economics</p> <p>Aquaculture training will be reinforced as a component of agriculture teaching, and included in agriculture education at technical and university levels, with a view to raising capacities of the unified extension service as well providing future farmers with an appropriately broad education;</p> <p>Regional and international opportunities for training will be explored, in particular for speciality and cutting-edge techniques training that cannot be undertaken at national level</p>		X	X	X
<p>2. Good Quality Extension Services</p> <p>Strengthen extension and information services including establishment of aquaculture centres of excellence for training (students, technical officers and farmers), research and development within the region</p> <p>Exchange programs with leaders in aquaculture</p>		X		X
<p>Strong producer Organizations</p> <p>The Private Sector stakeholders will work together to create a presence able to influence the direction of aquaculture development, including the creation and strengthening producer organizations</p>		X		
<p>Investment in Research Programmes</p> <p>Research for new/ indigenous breeding species;</p> <p>Maintenance of gene bank for fish farming species</p> <p>Develop new aquaculture products through value addition (seaweed soap, cosmetics, processing of fish skins, fish waste (bones, blood) as nutritional components, fertilizers, etc.</p>		X	X	X

Actions to support implementation of the BG Strategy for Eastern Africa	Blue Growth Stream			
	Capture fisheries	Aqua-culture	Ecosystem services contributing to livelihoods	Trade, markets, post-harvest and social support
<p>LEGAL FRAMEWORK AND IMPLEMENTATION MECHANISMS</p> <p>Aquaculture operations rely on land, water, fertilizers and feeds and legislation dealing with these can either hinder or promote the sector. Aquaculture development is also part of a number of regional and international protocols that address common environmental concerns and trade matters.</p> <p>How: All branches of governments at national level and regional organizations will work to bring appropriate legislation into line with the National Strategy expressed in the NAqS, with the AU – Fisheries and Aquaculture Policy, the FAO CCRFA.</p> <p>The regulatory framework will seek to provide a positive balance between controlling external impacts – such as on the environment, biodiversity and other agricultural/ industries activities – on the one hand, and on the other hand provide protection for fish farmers operating legally including on touristic areas.</p> <p>The regulatory framework will also address matters concerning the development of the aquaculture sector as business including Investment bills, taxation, loans, etc.</p>				
<p>Ensure sustainable use and management of land and water resources</p> <p>Adopt the (Ecosystem Approach to 1) capture fisheries and 2) aquaculture to mitigate possible negative impact of aquaculture.</p> <p>Develop legal instruments to effectively regulate importation and translocation of live non-indigenous aquatic organisms;</p> <p>Regulate and monitor use of alien and genetically modified aquatic organisms (in order to conserve the genetic diversity of indigenous species)</p> <p>Develop and enforce biosecurity measure (transfer/introduction of species across ecosystems and across border – quarantine);</p> <p>Enforce biosafety measures (use of hormones, fish feed additives, disinfectants)</p> <p>Governments apply and enforce the appropriate international codes to which government prescribes (e.g. Code of Conduct for Responsible Fisheries) and collaborate with regional and international bodies addressing issues related to aquaculture development;</p> <p>Develop guidelines for environmental pollution control measures in aquaculture (Public sector / private sector to work together).</p> <p>Support capacity development of national stakeholders to identify, formulate, implement, monitor and evaluate innovative investment strategies in particular with respect to fisheries, river basin management and ecosystem services</p>				
<p>Harmonize the roles of different institutions in aquaculture governance:</p>	X	X	X	

Actions to support implementation of the BG Strategy for Eastern Africa	Blue Growth Stream			
	Capture fisheries	Aqua-culture	Ecosystem services contributing to livelihoods	Trade, markets, post-harvest and social support
<p>Establish clear and secure user rights to land and water favourable to aquaculture investment;</p> <p>Advocate for improved land tenure security for small-scale producers and women in particular;</p> <p>Consultation among line sectors on legislation relating to land, water, environment and feeds affecting aquaculture;</p> <p>Promote an awareness campaign to publicize existing (and new) legislation which affects small-scale operators, farmer investors and other stakeholders – concerning environmental, land, water issues;</p> <p>Preparation of legislation relating to Aquaculture Development Zones specially the Zoning/Suitability mapping/conflict management</p>				
<p>Fostering an enabling business environment</p> <p>Tax breaks: for new investment in production, input supply, processing: Provide incentives for development of subsidiary industries (equipment, feed manufactures, fish transportation, etc.)</p> <p>Direct investment in infrastructure for use by farmers: such as land/water including hatcheries, cold storage and feed production including on establishment of Irrigation Schemes</p> <p>Develop/review/enforce aquaculture policies, legislation, strategies and guidelines</p> <p>Establish business incubation centers to boost youth participation in aquaculture entrepreneurship</p>		X	X	X
<p>Direct Investment and funding mechanisms</p> <p>Identify sources of finance;</p> <p>Promote international investment;</p> <p>maintenance of a permanent dialogue with funding institutions, including local commercial banks;</p> <p>Identify farmers with access to samples of ‘business plans’ for the creation of bankable commercial aquaculture operations,</p> <p>Guarantee tax breaks for new private investment for first years of exploitation</p> <p>Establish special funds to facilitate Youth/ Women enterprise development</p>		X		X

Actions to support implementation of the BG Strategy for Eastern Africa	Blue Growth Stream			
	Capture fisheries	Aqua-culture	Ecosystem services contributing to livelihoods	Trade, markets, post-harvest and social support
<p>IMPROVE AQUACULTURE PRODUCTION EFFICIENCY</p> <p>The new approach of development of commercial aquaculture for small medium and larger farmers requires greater emphasis on the economics of aquaculture and the address of several market failures in Africa. It will be essential to improve the packages offered to farmers and priority should be on improved seed production, improved feed formulations using cheap local vegetal ingredients, improved use of on-farm nutrition for small-scale rural farmers.</p> <p>The expansion of the sector requires research into improved technologies as well as commitment and investment across the full private/public spectrum. Mechanisms for carrying out research in partnership with the commercial farmers will be put in place; these might include farmer input into government research stations, private finance for station work, or contracting individual farmers to carry out specific priority research</p> <p>How: Government and Development partners facilitate development of the private sector, and PPP as engines for aquaculture growth. Public and private sectors will work together to foster an enabling environment within which the sector can successfully develop with production inputs to be accessible to farmers at national and sub-regional level. New lines of research will be opened with the support of the appropriate specialists/structures on fish processing, and development of new products</p>				
<p>Invest in Essential Inputs for Production</p> <p>Invest in seed production, produce good quality specialized fish feed; Develop feeds, based on locally grown plant-based ingredients, that are appropriate for small and large scale commercial operators producing attractively priced fish for the local markets Develop Physical/ Engineering inputs with public investment support – pond construction, cage construction, nets, pumps, transport equipment, hormones, pharmacological chemicals, lab analysis capacity, etc. Facilitate access and adoption to technology and innovations Promote good management practices on the use of new technologies to reduce potential negative environmental impacts Enhance start-up aqua business opportunities for new entrants</p>		X		X
<p>Support the development of Infrastructure in a broad sense, bringing agricultural development to suitable rural areas with the creation of communication, electricity, markets, social structures etc.</p>		X		X

Actions to support implementation of the BG Strategy for Eastern Africa	Blue Growth Stream			
	Capture fisheries	Aqua-culture	Ecosystem services contributing to livelihoods	Trade, markets, post-harvest and social support
<p>Promote aquaculture as livelihood diversification for creation of resilient communities and farmer Small-scale non-commercial farmers require the regular support currently provided through agriculture/fisheries extensions personnel in the field; but also need access to technological updated packs to become resilient and non-dependable. How: Government and non-government institutions will work together with farmers to develop Aquaculture Climate Smart systems for food and nutrition security. Farmers will receive updated technological packs suitable for their agriculture climate zones as well as economic power.</p>				
<p>Promote resilient farmers and communities: re-introduction of integrated aquaculture (fish, poultry, vegetables) for food and nutrition security; Promote aquaponic systems specially in dry areas; Facilitate access to micro-credit and insurance schemes for farmers</p>		X	X	X
<p>Minimize post-harvest losses through use of good practices in production, handling , processing and marketing Provision of training on Fish Postharvest techniques and best practices Facilitation of first startup pack for the construction of post-harvest structures</p>	X	X		X
<p>Climate Smart Aquaculture Assess water-related climate change impact for different scenarios, and develop elements for climate change adaptation strategies within the integrated water resources management (IWRM) for the Eastern Africa countries (along the Lakes and coastal cities); Undertake a gender sensitive studies on the socio-economic impact of climate change on natural resource utilization and management; Identify activities /initiatives for climate proofing in coastal areas: Design and formulate a climate proofing implementation strategy, including practical mainstreaming guidelines for the fisheries/ aquaculture and agriculture sector specially in transboundary water bodies; Increase knowledge of water basins to coral reef ecosystem services supporting food, nutrition and livelihood security, the drivers of change affecting these services and their values, and technical and management options to improve ecosystem services</p>		X	X	
MARKETS AND MARKETING				

Actions to support implementation of the BG Strategy for Eastern Africa	Blue Growth Stream			
	Capture fisheries	Aqua-culture	Ecosystem services contributing to livelihoods	Trade, markets, post-harvest and social support
<p>No agriculture sector develops without proper markets in place. However, special attention should be put on the improving the quality product for local, regional and international markets.</p> <p>How: Development of production and processing minimum standards are crucial. Along the value chain, efforts must be made to create awareness and appreciation of aquaculture products in order to increase consumer demand at local and national levels, including for new fisheries/ aquaculture products. Processing and Marketing initiatives will be offered similar short term fiscal advantages as production investments.</p>				
<p>Enhance farmers access to both inputs and markets</p> <p>Minimum quality standards in production and processing will be established and producers/ processors assisted to reach those standards; Export standards will be established where appropriate; in anticipation of any proposed investment in aquaculture production/processing for export, New local and regional markets will be studied and developed Minimize post-harvest losses through use of good practices in production, handling, processing and marketing. Develop new aquaculture products through value addition (seaweed soap, cosmetics, processing of fish skins, fish waste (bones, blood) as nutritional components, fertilizers, etc. Establish appropriate processing and value addition infrastructure</p>		X		X
<p>Facilitate private sector engagement in aquaculture trade and marketing at intra/ inter regional/ global level):</p> <p>Negotiation to open new export markets: Investment in bringing national standards (hygiene, veterinary control, packaging etc.) to the level required to obtain export licenses to overseas markets e.g. EU, USA, etc., Establish standards (fish products and related inputs (seeds, feeds), Develop certification systems including traceability, eco-labeling (quality assurance); Develop regional fish market information system Enhance capacity of regional organizations and member countries</p>		X	X	X
<p>INFORMATION MANAGEMENT Aquaculture Development shall be based on sound decisions based on good information, which will be supported by up-to-date sectoral databases.</p> <p>How: Governments will provide good quality and timely information to farmers and investors. Hence, resources will be put in place to this end. Appropriate structures and mechanisms will ensure Information flow from research to farmers, farmer progress to farmers, FFS to farmers and back to the decision makers</p>				

Actions to support implementation of the BG Strategy for Eastern Africa	Blue Growth Stream			
	Capture fisheries	Aqua-culture	Ecosystem services contributing to livelihoods	Trade, markets, post-harvest and social support
Produce baseline data for informative decision making, program formulation and management Conduct baseline environmental and social assessment; Establish data capture mechanism; Conduct (census) livelihood and social capital surveys in fishing/farmer communities		X	X	X
Develop communications tools (info graphics, fact sheet) to communicate scientific and regulatory information to the general public and targeted audiences	X	X	X	X
Enhance access to ICT for aquaculture development – Make available to client farmers husbandry information for the fish supplied, detailed instructions for use of feed, veterinary supplies, hormones, etc.		X		X

3. PARTNERS IN BLUE GROWTH

Implementing a BG Strategy in Eastern Africa will require partnerships and collaboration with a variety of organizations (Table 4). No one group has the full suite of needed knowledge and expertise in fisheries, aquaculture, trade, community development and maintenance of biodiversity and ecosystem services to implement the BG Strategy alone.

Some, but not all, of the types of partners and stakeholders from various sectors who will need to be involved are shown in Table 4.

Table 4. Key partners, stakeholders and sectors in implementing the BG Strategy in Eastern Africa
SMALL SCALE, SEMI-INDUSTRIAL, AND LARGE-/INDUSTRIAL SCALE PRODUCERS AND PROCESSORS

Fisherfolk – small <ul style="list-style-type: none"> • Fishermen • Boat owners • Women • Middlemen • Traders • Processors
VILLAGE, LOCAL, REGIONAL/PROVINCIAL/COUNTY, NATIONAL AND REGIONAL GOVERNANCE INSTITUTIONS Governing bodies <ul style="list-style-type: none"> • Communities • Elders • Opinion leaders

<ul style="list-style-type: none"> • National and local government • Conservation Groups
<p>REGIONAL AND CONTINENTAL ENTITIES</p> <p>Regional Economic Communities</p> <ul style="list-style-type: none"> • East African Community (EAC) • Common Market for Eastern and Southern Africa (COMESA) • Intergovernmental Authority on Development (IGAD) • Southern African Development Community (SADC) <p>Regional Fisheries Bodies/Regional fisheries management organizations (RFMO)</p> <ul style="list-style-type: none"> • Lake Victoria Fisheries Organization (LVFO) • Indian Ocean Commission (IOC) • Southwest Indian Ocean Fisheries Commission (SWIOFC) • Indian Ocean Tuna Commission (IOTC) • Regional Organization for the Conservation of the Environment of the Red Sea and Gulf of Aden (PERSGA) <p>Regional Fisheries Trade Portals</p> <ul style="list-style-type: none"> • Intergovernmental Organization for Marketing Information and Cooperation Service for Fishery Products in Africa (INFOPECHE) • Marketing Information and Technical Advisory Services for the Fisheries Industry INFOSA • Electronic Fish Market Information Service (EFMIS) <p>African Union</p> <ul style="list-style-type: none"> • New Partnership for Africa's Development (NEPAD) Agency • Interafrican Bureau for Animal Resources of the African Union (AU-IBAR)
<p>UNIVERSITIES AND ACADEMICS</p> <ul style="list-style-type: none"> • Western Indian Ocean Marine Science Association (WIOMSA) <p>Inter-governmental Organisations (IGOs)</p> <ul style="list-style-type: none"> • FAO • International Union for Conservation of Nature (IUCN) <p>International Non-Governmental Organizations (INGOs)</p> <ul style="list-style-type: none"> • World Wildlife Fund (WWF) • The Nature Conservancy (TNC) • Blue Ventures • Coastal Oceans Research and Development (CORDIO) • Environmental Defense Fund (EDF) <p>Community Service Organizations (CSOs)</p> <ul style="list-style-type: none"> • World Forum of Fish Harvesters and Fish Workers • Indian Ocean Rim Association (IORA) <p>Development Banks</p> <ul style="list-style-type: none"> • World Bank • African Development Bank (ADB) • International Fund for Agricultural Development (IFAD) • Islamic Development Bank (IDB) <p>Development Partners</p> <ul style="list-style-type: none"> • European Union (EU) • Japan International Cooperation Agency (JICA) • German Society for International Cooperation, Ltd (GIZ) • United States Agency for International Development (USAID) • Global Environment Facility (GEF)

Fisheries Standards and certification

- African Standardization Organisation (ARSO)
- African Eco-labelling mechanism (AEM)
- National Bureaux of Standards
- Marine Stewardship Council
- Natureland

4 THE WAY FORWARD

Implementing the BG Strategy will involve sub-regional coordination and communication in awareness raising, project development, out-reach, extension, and engaging the private sector. A beginning of a network for the BG Strategy has been established and will further help promote the strategy.⁹

As a start, the BG Strategy can be promoted with potential key partners and stakeholders from a variety of sectors (Table 4). The strategy can be shared and discussed at:

- international fora, such the meetings of the African Union and its subsidiary bodies, African regional economic commissions, regional fisheries bodies, regional fishery trade portals,
- industry associations such as the World Aquaculture Society and Sustainable Aquaculture Research Networks for Sub-Saharan Africa (SARNISSA),
- international development banks, and
- the statutory fishery bodies of FAO such as the Committee on Fisheries (COFI) and its sub-committees on trade and aquaculture.

FAO maintains a Blue Growth blog¹⁰ where information and questions can also be posted in regard to uptake of the BG in Eastern Africa and elsewhere.

Policy and decision makers are encouraged to take up this sub-regional strategy and establish mechanisms to adapt the Blue Growth Initiative and this Blue Growth Strategy to national priorities and opportunities.

In doing so, an essential first step is for countries in the sub-region to update and revise as soon as possible their respective Country Programme Frameworks (CPFs) which are the national policy documents FAO uses in formulating development projects for members.¹¹ Quite often the national CPFs were created by stakeholders from terrestrial agriculture sector and do not include priorities for fisheries and aquaculture development or the conservation of aquatic ecosystems.

The fisheries and aquaculture sector should continue to identify partners and supporters of the BG Strategy. The collection of case studies on success stories that have embraced the principles of blue growth and have improved food and nutritional security, reduced poverty and conserved biodiversity and fishery resources will further help communicate the advantages of strong and coherent strategy that addresses the aquatic resources in Eastern Africa.

FAO and others are convening fora for the further development of the BG; FAO stands ready to assist the sub-region and other member states of FAO in moving forward with Blue Growth.

⁹ The participants of the Consultative Meeting on the “Blue Growth Strategy for the Development of the Fisheries and Aquaculture Sectors in Eastern Africa,” Addis Ababa, Ethiopia, 29–31 March 2017 agreed to establishing a network for the promotion of the Blue Growth Strategy in Eastern Africa.

¹⁰ www.fao.org/blogs/blue-growth-blog/en/

¹¹ www.fao.org/tc/policy-support/types-of-support/country-programming-framework/en/

DEVELOPMENT OF FISHERIES AND AQUACULTURE WITHIN THE BLUE GROWTH INITIATIVE IN EASTERN AFRICA:

BACKGROUND PAPER FOR DISCUSSION

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EXECUTIVE SUMMARY

The Blue Growth Initiative

As part of the Food and Agriculture Organization of the United Nations' (FAO) Blue Growth Initiative (BGI), the Sub-Regional Office for Eastern Africa (FAOSFE) has prepared this background document for the Development of Fisheries and Aquaculture within the Blue Growth Initiative in Eastern Africa. The BGI is an FAO flagship initiative that aims at supporting more productive, responsible and sustainable fisheries and aquaculture sectors by improving the governance and management of the aquatic ecosystems, by conserving biodiversity and habitats, and by empowering communities. The BGI is the sustainable growth and development emanating from economic activities in the oceans, wetlands and coastal zones that minimize environmental degradation, biodiversity loss and unsustainable use of living aquatic resources, and maximize economic and social benefits.

The BGI has four main components to achieve responsible fisheries and aquaculture:

- Capture fisheries;
- Aquaculture;
- Ecosystem services contributing to livelihoods; and
- Trade, markets, post-harvest and social support.

Based on the concept of the Green Economy, the principles of BGI are:

Use Existing Instruments;
Sustainable Development;
Inclusive;
Justice;
Ecosystem Stewardship;
Resilience;
Engage the Private Sector;
Innovation and Technology.

Status and Trends in a Diverse Sub-Region

The countries comprising the Eastern Africa sub-region are: Burundi, Djibouti, Ethiopia, Kenya, Rwanda, Somalia, South Sudan and Uganda. The sub-region displays many of the same qualities as the rest of Sub-Saharan Africa, for example:

- Africa has the youngest population in the world.
- Africa has the highest proportion of people living in rural areas, but the fastest rate of urbanization with significant migration.
- Urban, peri-urban and rural food systems are increasingly important for food security and nutrition of cities, as well as for environmental services.
- Imports have grown faster than exports.
- Enhancing intra-African trade through strengthened regional integration arrangements that transcend national and sub-national borders is thought to be able to play a key role in overcoming food import dependency and food insecurity problems.
- Per capita fish consumption in Sub-Saharan Africa was estimated to be 6.6 kg/ca/year and expected to decline to 5.6 kg/ca/year by 2025. This is in contrast to the overall estimate that fish consumption will increase in 2025 globally.
- Demand for fish however, is expected to increase from 10.8 to 15.1 in the region by 2025.

Several global trends are expected to impact the fisheries and aquaculture sector in Africa and the sub-region, including transboundary aquatic diseases, urbanization and migration, changing agrarian structures, globalization, food demand, energy demand, increased competition for resources, knowledge and innovation dominated by the private sector, governance, protection of tenure and fishing rights, and increased vulnerability of communities to disasters.

The sub-region varies greatly in regards to the development and management of fishery resources. Uganda and Ethiopia are landlocked countries whereas Djibouti relies almost exclusively on the coast for fishery resources. Several of the countries are recently recovering from or are still involved in armed conflict and civil unrest, whereas other countries have had relatively longer periods of peace. Stability of governments, populations and markets all impact the development and management of fishery resources. In 2014, Uganda had the highest catch from inland capture fisheries with 748 940 t and had the highest aquaculture production with 111 023 tonnes. Somalia produced the most from marine capture fisheries with 29 800 tonnes in 2014. Kenya was the only country reporting marine aquaculture production.

Kenya and Uganda have lucrative export markets for Nile perch, although fish production is mostly consumed locally. Aquaculture has developed unevenly in the sub-region and in many countries is practically non-existent. However, most countries have aquaculture development identified as a priority for future food production.

Thus a strategy for Blue Growth will need to have general elements that each country can modify and adapt to national circumstances and priorities. Analyses of common constraints and opportunities can help identify general elements of a strategy for Blue Growth.

Common constraints to implementing BGI include:

- Lack of information/ timely and accurate data collection;
- Trade constraints;
- Post harvest losses;
- Decreasing fish consumption;
- Competition with other sectors for land and water;
- Policies and regulations (governance) hard to enforce;
- Non-interest of youth to replace current farmers or to become fishers.

Fisheries specific constraints include:

- IUU fishing;
- Overfishing and decreased catch per unit effort (CPUE);
- Commercial vs small scale fisheries conflicts.

Aquaculture specific constraints include:

- Lack of resources especially seed and feed;
- Lack of capacity and extension;
- Competition with capture fisheries.

Common opportunities for implementing BGI include:

- Rich aquatic biodiversity;
- Urbanization and increasing wealth in general will promote more fish consumption;
- Increasing demand from increasing human population and changing of cultural eating habits;
- Technical capacity for aquaculture exists in some areas, and needs to be developed more widely in the sub-region;
- Improved and less expensive communication technologies;

- Ecosystem approaches becoming accepted;
- Other agriculture sectors also need partners in development;
- Recent international decisions to support livelihoods and development;
- Young workforce, but may not be interested in agriculture or fisheries/aquaculture;
- Recent international convention(s) on sustainable production.

Advice from other international fora

The sub-regional consultation for East Africa identified five priority areas and related actions to: (i) promote sustainable use and management of natural resources to address the root causes and impact of drought and climate change; (ii) facilitate agricultural transformation, taking advantage of the youth dividend; (iii) increase agricultural production, productivity of crops, livestock and fisheries sectors; (iv) support the design and revision of sub-regional policies and frameworks; (v) provide technical support for the Intergovernmental Authority on Development (IGAD) Drought Disaster Resilience Sustainability Initiative and the Comprehensive Africa Agriculture Development Programme (CAADP) regional investment plan.

CAADP regional investment plans and economic commissions throughout Africa, although facing area specific priorities, provided further guidance including:

- Strengthen institutional capacity of regional organizations;
- Ensure effective linkages between sectors;
- Articulate the national-regional nexus;
- Ensure continuing engagement with Non-State Actors;
- Promote alignment and harmonization of development partners.
-

Furthermore, three global initiatives will frame national and regional action and FAO's work in food and agriculture in the future: 1) the 17 Sustainable Development Goals, 2) the Paris Agreement adopted as an outcome of the UN Global Climate Change and 3) The Rome Declaration on Nutrition and the Framework for Action.

The draft strategy for BGI in East Africa should include the guidance and principles set down in the above instruments and mechanisms.

The draft strategy

The strategy will involve several well-established approaches to fisheries and aquaculture development and management including the ecosystems approach and the precautionary approach, and will build on recent relevant guidelines such as the Voluntary Guidelines on the Responsible Governance of Tenure, the Small Scale Fisheries guidelines and the Rome Declaration's 10 steps to responsible inland fisheries. The strategy will also address fisheries improvements through the four pillars of food security: i) availability, ii) accessibility, iii) utilization and iv) stability.

FAO's Blue Growth Development Objectives are:

- to create an enabling environment for people involved in fisheries and aquaculture to utilize resources but also play an active role in protecting and safeguarding these natural resources for the benefit of future generations;
- improved governance and management of aquatic-ecosystems;
- conserve biodiversity and habitats; and
- empower concerned communities (in particular small-scale fisheries communities).

To achieve the Development Objectives, the following action items could be considered in a strategy:

- Improve the utilization efficiency of fishery resources;
- Improve production efficiency with reduced impacts on the environment;
- Increase the resilience of fishers, fish farmers and the sector to natural and human induced impacts (e.g. climate and conflict);
- Strengthened private sector through public/private partnerships, enabling business environment and other;
- Improve the equity and efficiency along the value chain;
- Improve the governance of the sector;
- Improve the integration of fisheries and aquaculture into other food production, water management and land use sectors;
- Manage aquatic ecosystems to provide for food, biodiversity and ecosystem services;
- Improve trade in fish and fish products both within the sub-region and abroad;
- Improved information production and dissemination;
- Improved opportunities for youth and women along the fish production change.

Action items specific to capture fisheries to consider include:

- Improve data collection and processing on the production, social and economic impact of capture fisheries;
- Decrease IUU fishing and unsustainable fishing methods;
- Improve or establish MCS regimes;
- Reduce conflicts between industrial and small scale fisheries.

Action items specific to aquaculture to consider include:

- Develop capacity through extension and other means;
- Develop zones for aquaculture development;
- Improve access to quality seed and feed resources;
- Improve access to established technologies (e.g. fish health, genetics and system design).

Action items specific to ecosystem services to consider include:

- Improve the knowledge on the full range of ecosystem services relevant to livelihoods and fishery resources;
- Document the value (monetary and non-monetary) of ecosystem services to rural and fish dependent communities.

Action items specific to trade, markets, post-harvest and social support could be:

- Reduce post-harvest loss of fish and fish products;
- Increase intra-regional trade of fish and fish products;
- Develop enabling environment within the sub-region for the development, management and growth of aquaculture and fisheries, and the people that use aquatic resources.

Major areas of work regarding sub-regional initiative to consider include:

- Identifying options for addressing key governance issues in achieving responsible fisheries and aquaculture;
- Establishing cross-sectoral linkages, institutions and venues for communication and joint policy making;
- Increase farmers' and fishers' adaptability to climate change impact and resilience to natural disasters and socioeconomic risks;
- Reduce negative environmental and social impacts of fisheries and aquaculture;
- Define and promote elements of an ecosystem approach to fisheries and aquaculture specifically for Eastern Africa;

- Develop a strategy for intra and inter regional trade in fish and fish products;
- Improving the access of poor rural fish farmers to quality production inputs, sustainable production technology and markets;
- Support studies on the kinds and value of ecosystem services that impact on livelihoods of rural and fishing communities;
- Develop and support innovative and novel means to improve information on fishery production, including household surveys, remote sensing, habitat mapping and modelling approaches;
- Develop private-public partnerships to address new technologies such as biotechnological and information technologies;
- Vulnerability studies on communities that rely on aquatic ecosystems to determine best means to improve food production and resilience in the face of changing climates;
- Develop a communication plan to promote Blue Growth as an economically viable, environmentally sustainable and socially acceptable strategy to alleviate poverty and enhance food security in Eastern Africa.

Transiting to Blue Growth

FAO has used a Theory of Change analysis to identify the building blocks and the sequence for creating them to support countries to transition from concept to achieve desired outcomes. The Blue Growth Theory of Change is based on three broad phases:

1. Enabling conditions;
2. Intervention for transformational outcomes and outputs;
3. Mainstreaming into policies and action plans.

The work is organized around three linked platforms for transformational change focused on efficient resource use, decent work, energy efficiencies and innovation:

1. Blue Communities;
2. Blue Production and
3. Blue Fora.

FAO and other Key Partners

Implementing a BGI in Eastern Africa will require partnerships and collaboration with a variety of organizations. Potential partners along with FAO and national governments could include:

- African Union Commission;
- African Union International Bureau on Animal Research
- International Livestock Research Institute (ILRI);
- United Nations Economic Commissions for Africa;
- WorldFish Center;
- Global Aquaculture Alliance Platform;
- Regional Fishery Bodies;
- World Wide Fund for Nature;
- Ramsar Convention on Wetlands of International Importance;
- IUCN and species survivalist groups;
- Academia;
- International Development Banks.

Concluding section

Member countries in the East Africa Sub-Region will review this background paper and finalize a BGI strategy for Eastern Africa in accordance with inter alia, national priorities and capacities, the guidance of the regional initiative, the Code of Conduct for Responsible Fisheries and other relevant instruments.

I. INTRODUCTION

The Blue Growth Initiative (BGI) is an outcome of the Rio+20 discussions that took place in 2012; it is based on the concept of the Green Economy¹² and on the principles of the Code of Conduct for Responsible Fisheries. The BGI promotes the sustainable management of natural aquatic resources while emphasizing efficient resource use in capture fisheries and aquaculture. By promoting sustainable growth and development from economic activities in aquatic systems that minimizes environmental degradation, biodiversity loss and unsustainable use of resources can be limited whilst economic, cultural and social benefits can be maximized.

In the near term, FAO's Blue Growth Objectives are:

- to create an enabling environment for people involved in fisheries and aquaculture to utilize resources but also play an active role in protecting and safeguarding these natural resources for the benefit of future generations;
- to improve governance and management of aquatic ecosystems;
- to conserve biodiversity and habitats; and
- to empower concerned communities (in particular small-scale fisheries communities).¹³

The BGI spans across fisheries and aquaculture sectors and is gaining momentum worldwide as countries, donors and institutions such as the World Bank and the Africa Development Bank focus on developing countries transitioning to a new economy. FAO will provide the technical expertise to support countries' efforts in implementing BGI through policy and programme.

Box 1. Based on the concept of the Green Economy, the principles for BGI are:

1. Use Existing Instruments – Blue Growth actions should take into account and where possible build on existing fisheries instruments including the Code of Conduct for Responsible Fisheries, Small-scale Fisheries Guidelines, and Ecosystem Approach to Fisheries and Aquaculture and others as appropriate.
2. Sustainable Development – Blue Growth actions contribute to the achievement of the three pillars of sustainable development – social, economic and environmental.
3. Inclusive – Fair and inclusive actions that provide social and economic benefits for both current and future generations and facilitate participation and engagement of all stakeholders, from the local to global level.
4. Justice – Supports equity, human rights, gender equality, cultural diversity as well securing sustainable tenure and benefit sharing.
5. Ecosystem Stewardship – Promotes investment in the present and the future by prioritizing long-term, scientifically-sound decision making geared towards good governance and efficient use of our aquatic natural resources while increasing the value of the goods and services from aquatic systems

¹²<http://web.unep.org/greeneconomy/>; https://en.wikipedia.org/wiki/Green_economy¹³ From unpublished FAO discussion papers.

¹³ From unpublished FAO discussion papers.

6. Resilience – Contributes to economic, social and environmental resilience by supporting sustainable, diverse economies and building on local skills to improve and diversify livelihoods and employment opportunities.
7. Engage the Private Sector – Engage the private sector through investment incentives which enable communities to make the necessary changes to undertake Blue Growth actions.
8. Innovation and Technology – Prioritizes the use of innovation and technology to ensure that resources are used efficiently, incorporating social and environmental externalities into economic valuation and minimizing any negative impacts.

As part of BGI, the Sub-Regional Office for Eastern Africa (FAOSFE) has prepared this discussion paper for the Development of Fisheries and Aquaculture within the Blue Growth Initiative in Eastern Africa. The BGI is an FAO flagship initiative that aims at supporting more productive, responsible and sustainable fisheries and aquaculture sectors by improving the governance and management of the aquatic ecosystems, by conserving biodiversity and habitats, and by empowering communities. The BGI has received wide recognition and enthusiastic support at various international fora, notably by Member States at the latest (31st) Session of FAO's Committee on Fisheries in June 2014.

The BGI is set within the context of overall increasing fish¹⁴ production and wealth. 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 20 kg in 2013. This development has been driven by a combination of population growth, rising incomes and urbanization.

While fish production from capture fisheries has leveled off at around 88 to 90 million tons over recent years, the demand for fish and fishery products has continued to rise. This increasing demand has been steadily met by increases in aquaculture production in many parts of the world.¹⁵

Over 3.1 billion (a bit less than 50 percent) of the world's population lives within 100 kilometers of the ocean or sea in about 150 coastal and island nations; about 90 percent of the world lives within 10 km of a source of surface freshwater.¹⁶ Aquatic ecosystems and their biotic 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.

Although there are positive global trends, in the Eastern African Sub-Region however, growth in fisheries and aquaculture production has been uneven and has not developed as in the rest of the world. The BGI provides a framework to help develop the sector and address the issues specific to the Eastern Africa Sub-Region.

II. Components of the BGI

Blue Growth is the sustainable growth and development emanating from economic activities in the oceans, wetlands (wetlands here include all freshwater bodies, e.g. lakes, rivers, reservoirs and swamps) and coastal zones that minimize environmental degradation, biodiversity loss and unsustainable use of living aquatic

¹⁴ "Fish" as used here includes amphibians, reptiles, invertebrates and aquatic plants that are harvested for food, recreation and aquaculture.

¹⁵ www.fao.org/in-action/globefish/fishery-information/resource-detail/en/c/379558/

¹⁶ www.ncbi.nlm.nih.gov/pmc/articles/PMC3110782/

*resources, and maximize economic and social benefits.*¹⁷ At the Country Level, the BGI aims at development and implementation of national policies and strategies through its regional, sub-regional and national offices.

The initiative has four components to achieve responsible fisheries and aquaculture:

- Capture fisheries;
- Aquaculture;
- Ecosystem services contributing to livelihoods; and
- Trade, markets, post-harvest and social support.

However, several issues, constraints and challenges are facing the success of the BGI at a global level:

1. Resources and environment: Degradation and habitat destruction, loss of biodiversity, overexploited fish stocks, biosecurity (disease outbreak and invasive species), and climate change with severe weather conditions.
2. Socio-economics and governance: Overfishing, illegal, unregulated and unreported fishing (IUU), bycatch and discards, capital and other financial matters, equity (poverty, forced labour, child labour, empowerment of women, etc.) and the public image of fisheries and aquaculture.
3. Status of stocks: FAO reports that as of 2011 almost 30 percent of major marine stocks are overfished, 70 percent are fished within biologically sustained levels, 61 percent fully fished, 10 percent under-fished and constant increase in the rate of fully fished stocks since 1990. The status of inland fisheries has not been assessed at a similar global level.
4. FAO's strategic goals: Eradicate hunger, food insecurity and malnutrition, eliminate rural poverty through socio-economic development, sustainable management and utilization of natural resources will provide context for the BGI.

Overarching all of the above is the need for accurate and up-to-date information on points 1–3 above and how well FAO and the international community are meeting their strategic goals, point 4.

III. Trends and Drivers in Africa

With almost 200 million people aged between 15 and 24, Africa has the youngest population in the world. According to the World Bank the number of young people in Africa will double by 2045. The share of youth in the labor force in Africa is the highest in the world: approximately 35 percent in Africa, versus 30 percent in India, 25 percent in China and 20 percent in Europe.

Africa has the highest proportion of people living in rural areas, but the fastest rate of urbanization. Urban, peri-urban and rural food systems are increasingly important for food security and nutrition of cities, as well as for environmental services. Migration from rural areas remain an important challenge to address, particularly due to migration of youth and adult males of working age, which undermines food security and nutrition in rural area. Women, children and the elderly are often left behind in an environment that lacks adequate opportunities to make a living from smallholder farming or rural employment.

Although agriculture and agri-food systems represent a strategic and growing sector for African development, they elicit a negative perception with most young people. The situation stems from a growing divide between the aspirations of young people and the economic, social and lifestyle opportunities, or lack thereof, available to young people in rural Africa. New information systems, better transportation infrastructures, and the possibility of travel and migration offer a window on other ways of life for the young in which big cities and rich countries represent access to the images displayed by the media.

¹⁷ www.fao.org/in-action/globefish/fishery-information/resource-detail/en/c/379558/

Climate extremes such as drought, flooding, heat stress and tropical cyclones will become more intense and more frequent: Africa's Small Island Developing States (SIDS), the Sahelian and Horn of Africa region are some of the most vulnerable. Rising sea levels will threaten Africa's large coastal population.

Africa continues to record progress on gender equality and women's empowerment. Many countries are progressing well, especially on gender parity in primary school education and numbers of women in government. Promoting women in paid employment outside agriculture; cultural practices such as inequitable inheritance practices, early marriage and household power dynamics; coupled with unequal economic opportunities, continue to pose challenges. More educated mothers have the skills to compete for high-skilled and well-paid jobs and will therefore be in a better position to feed, care for and educate their children. Empowering women and girls through education also allows them to be involved in decisions at all levels and influence the allocation of resources in a gender-sensitive manner.

According to FAO data, since 1980, Africa's food import has grown consistently faster than export and reached a record high of around USD50 billion in 2008, at the height of the global economic crises, representing a deficit of about USD32 billion. Although food imports declined a year later, they have continued to rise steadily and this trend is expected to continue under a business as usual scenario. On a more positive note, due to the impetus provided by the New Economic Partnership for African Development (NEPAD) and The Comprehensive Africa Agriculture Development Programme (CAADP), it is now widely agreed that enhancing intra-African trade through strengthened regional integration arrangements that transcends national and sub-national borders holds a key role for overcoming Africa's food import dependency and food insecurity problems. The preferred strategy rests on the common notion that African food and agricultural markets are extremely fragmented along sub-regional, national and even sub-national levels, resulting in segmented markets of sub-optimal size, which does not ensure profitability of sizeable private investment in the different stages of the commodity chain.

African governments could pursue changes on several fronts: physical infrastructure must be improved and opportunities expanded for regional value chain development and market access, including by strengthening the legal and regulatory framework. The best way to create a favourable environment for agricultural trade growth will, however, vary from country to country and each should formulate its plan in terms of its own poverty reduction and growth strategy. The focus should be on tackling supply-side constraints and responding to shifting regional and global demand.

The following global trends and issues are expected to have direct or indirect impacts on the food and agriculture sector and will shape the development agenda in the near future:

- a. Control and response to transboundary plant and animal pests and diseases;
- b. Urbanization, migration and impacts on food systems, food security and nutrition;
- c. Changing agrarian structures;
- d. Globalization of agriculture and food systems;
- e. Evolution of trade policies and trade flow patterns ;
- f. Changing structure of food demand and food price volatility;
 - i. Global food demand is expected to increase by 70 percent by 2050, a trend that is increasingly driven by population, economic growth and urbanization, particularly in developing countries. At the same time dietary patterns are changing towards more livestock products, including fish, vegetable oils and, to a lesser extent, sugar; a trend that is accentuated by the increasing homogeneity of life habits between urban and rural population facilitated by communications technology. The new consumption patterns also imply a larger role for processed foods which can create new opportunities for value-added and income-generating activities.

- g. Energy security and scarcity;
 - i. Over 75 percent of the African population is without electricity and 81 per cent depend on solid traditional biomass fuels for cooking. Only about a quarter of the population in Africa has access to electricity, versus about half in South Asia and more than 80 percent in Latin America, the Middle East and North Africa. There is just enough electricity generated now to power one light bulb per person for three hours per day. The projections also posit that around 550 million people will remain without electricity in 2040 – the majority of them from Africa.
- h. Growing competition over the environment and resources ;
 - i. Trends for 2050 suggest growing scarcities of agricultural land, water, forest, fishery and biodiversity resources. This is driven by accelerated intensification of human activities with increasing pressure on natural agricultural resources which threatens to alter the earth's ecological functioning in a harmful way, and at the same time making more difficult overall economic sustainability. Utilization of cereals and oilseeds for the production of biofuels has increased, as well as other uses such as biomass as a substitute for petrochemicals. Strong governance mechanisms will be necessary at national, regional and international levels to strike the appropriate balance between conflicting needs and opportunities and to implement sound natural resources property rights frameworks.
- i. Knowledge and innovation are increasingly dominated by the private sector;
 - i. Although public investment in agricultural research and development (R&D) has grown worldwide, private sector investments have grown faster to around 48–50 percent of total research and development expenditure. About half of all investment in agricultural R&D is concentrated in a few countries: USA, Japan, China, India and Brazil, while over 90 percent of private investment is carried out in the developed countries. The emergence of biotechnology which is principally in the hands of the private sector is a major source of innovation in agriculture. Furthermore, over the past three decades, the world has witnessed tremendous progress in the area of information technologies and their application almost all of which are in the private sector. This has fostered labor productivity to a great extent, while at the same time magnifying opportunities to generate information flows and reduce the impact of physical distance. Beyond the impact that this is having in the economy, the increase in information flow and the decentralization of information sources brought about by the spread of computers and access to the internet has facilitated change in all aspects of societies. This trend may very well continue and accelerate in the future, exerting a large influence on the generation and the spread of collective knowledge and democracy.
- j. Governance and mutual accountability;
 - i. On one hand, at national and international levels a wide range of stakeholders, including the private sector, civil society, NGOs and foundations are increasingly recognized as having a legitimate voice in deliberations. Included here are efforts for the protection of tenure and fishing rights. New mechanisms are being put in place to involve their representatives in decision-making processes, as well as in the implementation of jointly developed activities. It is further recognized that in order to achieve global, regional and national development goals, and to achieve food and nutrition security and reduce poverty, the participation of actors well beyond the agricultural sector is required. A heightened focus on cross-cutting issues, such as gender and the environment adds further complexity calling for better and stronger governance and on building effective, efficient and accountable institutions fostering participation, equity, transparency and evidence based information and decision making. The commitment to good governance and

mutual accountability are well ground as one of the key commitments in the African Union’s Malabo Declaration.¹⁸

- k. Increased vulnerability due to natural and man-made disasters and crises;
 - i. Rural populations are most susceptible to disasters and have less coping mechanisms or options than communities in developed countries.

IV. POLICY CONTEXT FOR THE BGI IN EASTERN AFRICA

Several international policy instruments will guide the formulation of a BGI in Eastern Africa. These include:

- The FAO Code of Conduct for Responsible Fisheries – Guiding principles for fisheries and aquaculture that are sustainable, profitable, equitable and promote research and integration.¹⁹
- The United Nations’ Sustainable Development Goals (Annex 1) – Seventeen goals and associated indicators for sustainable development of all sectors.
- The World Trade Organization²⁰ – A global body overseeing international trade with associated instruments on Trade Related Intellectual Property, Sanitary and Phytosanitary Measures²¹, and non-tariff and technical barriers to trade²² that can impose sanctions on countries in violation of agreements.
- Convention on International Trade of Endangered Species of Fauna and Flora²³ – Global organization that helps protect endangered species through restrictions on international trade.
- Convention on Biological Diversity²⁴ – the convention with the most country signatures that covers the conservation and sustainable use of biodiversity and the fair and equitable sharing of benefits from that use.

Additionally, the African Development Bank (ADB) and the World Bank (WB)²⁵ along with FAO have developed an “African Package for Climate-Resilient Ocean Economies” for many coastal areas in Africa. FAO is planning additional conferences on Blue Growth in Africa²⁶ that can build on the outputs of this present workshop.

The Eastern Africa Sub-Region

The BGI is being initiated in various regions around the world.²⁷ The specific elements of those initiatives will depend on the particular strengths, opportunities and challenges present in the sub-region. For example SIDS will have completely different set of priorities for development than a land-locked country such as Uganda. However, there will also be similarities among countries as fishing plays a major role in food production in both Uganda and SIDS.

¹⁸ http://pages.au.int/sites/default/files/Malabopercent20Declarationpercent202014_11percent2026-.pdf

¹⁹ www.fao.org/docrep/005/v9878e/v9878e00.htm

²⁰ www.wto.org

²¹ www.wto.org/english/tratop_e/sps_e/sps_e.htm

²² www.wto.org/english/tratop_e/tbt_e/tbt_e.htm

²³ www.cites.org

²⁴ www.cbd.int/

²⁵ www.fao.org/3/a-i6441e.pdf

²⁶ Blue Growth and Economy: sharing African perspectives and experiences, to be held in Cape Verde May, 2017.

²⁷ www.fao.org/fishery/en

The countries comprising the Eastern Africa sub-region are: Burundi, Djibouti, Ethiopia, Kenya, Rwanda, Somalia, South Sudan and Uganda. According to the World Bank,²⁸ the population of the sub-region grew from 126 249 788 in 1994 to 225 068 617 in 2014 (Figure 1). Ethiopia is the most populated country with almost 97 million people whereas Djibouti has the fewest people with less than 900 000.

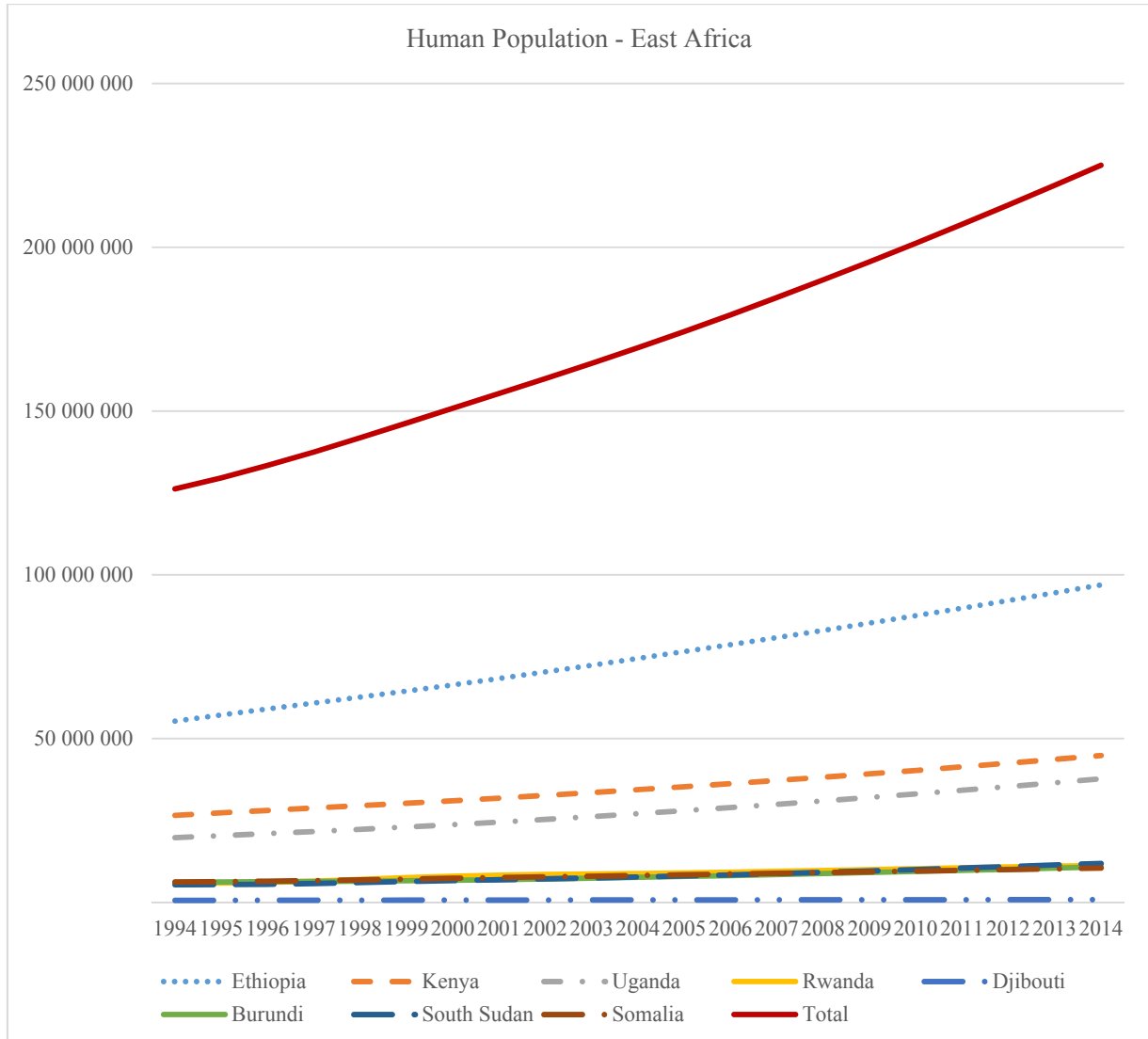
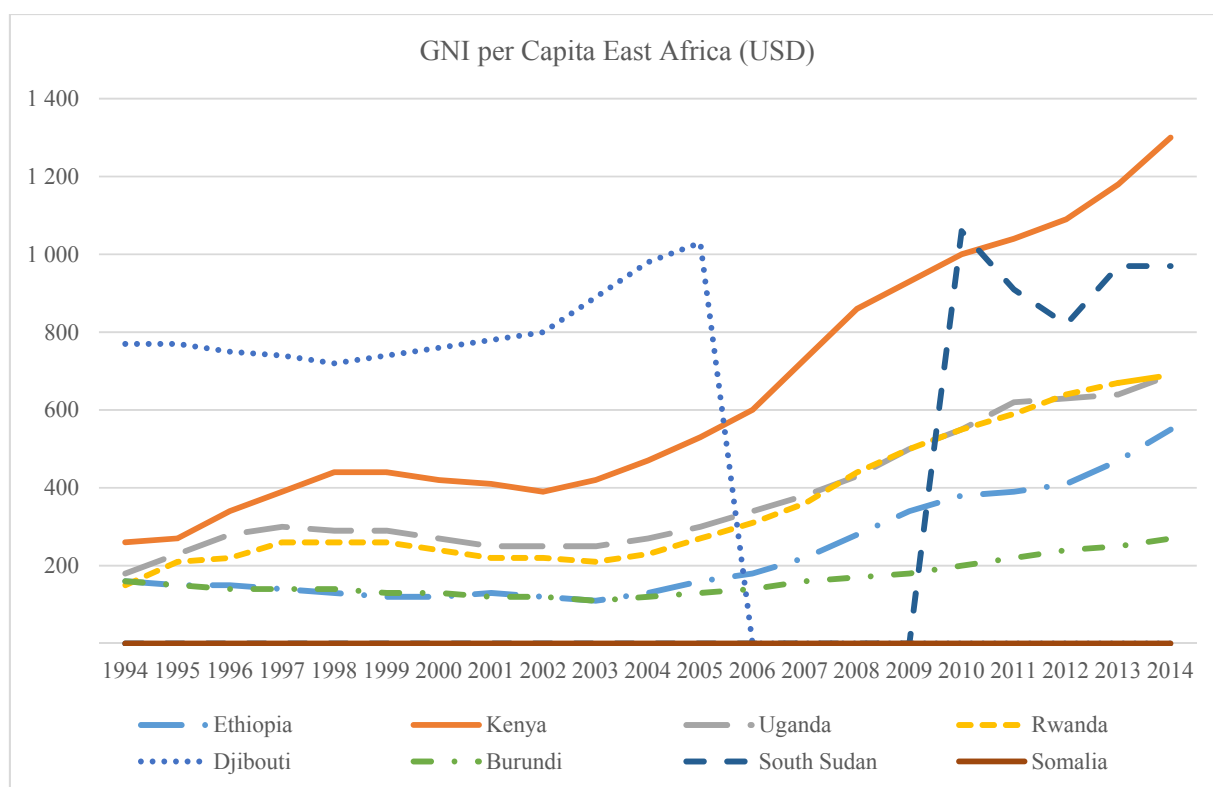


Figure 1

Economies in the sub-Region are generally growing, but at different rates (Figure 2). Gross National Income (GNI) per capita is comparatively low and ranges from around USD300 in Burundi to about USD1 300 in Kenya (Figure 2).

²⁸http://databank.worldbank.org/data/reports.aspx?Code=SP.POP.TOTL&id=af3ce82b&report_name=Popular_indicators&populartype=series&ispopular=y#



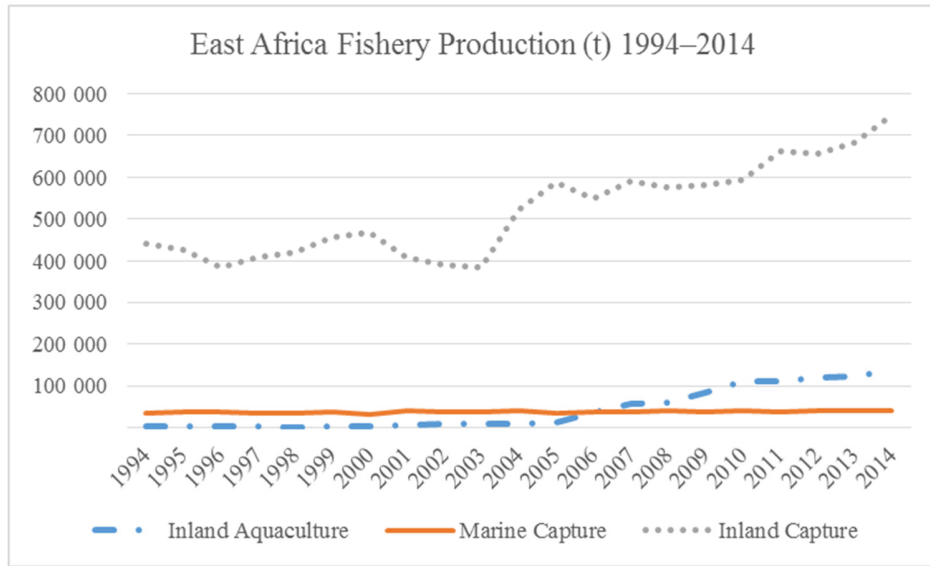
The region contains diverse tropical and subtropical aquatic habitats including xeric wetlands, swamps, large lakes, major river systems, high montane lakes, closed basins and coastal rivers as well as the marine coastal habitats of the Gulf of Aden and the Indian Ocean.²⁹ The fishery resources of many of these habitats are poorly known with the exception of the great lakes such as Lake Victoria.

Small-scale fisheries employ the majority of fishers and fish workers in the East African region and contribute substantially to food security and livelihoods through their role in providing nutritious food and generating local and national incomes. Inland fisheries are particularly important in many countries of the region. There are many aquatic resources, including freshwater and marine resources, that are shared by two or several countries and consequently, the regional aspects of small-scale fisheries are important.³⁰

Inland capture fisheries is growing and is the major producer of fish for the sub-region (Figures 3 and 4). Production from marine fisheries has not increased in decades and aquaculture is increasing slowly; only one country reported marine aquaculture.

²⁹ www.feow.org/globalmap

³⁰ East Africa Consultation Workshop on Improving Small-Scale Fisheries in the Context of Food Security and Poverty Eradication – www.fao.org/3/a-i6751e.pdf



Production by country further reveals the diversity of the sub-sectors in the sub-region (Figure 4).

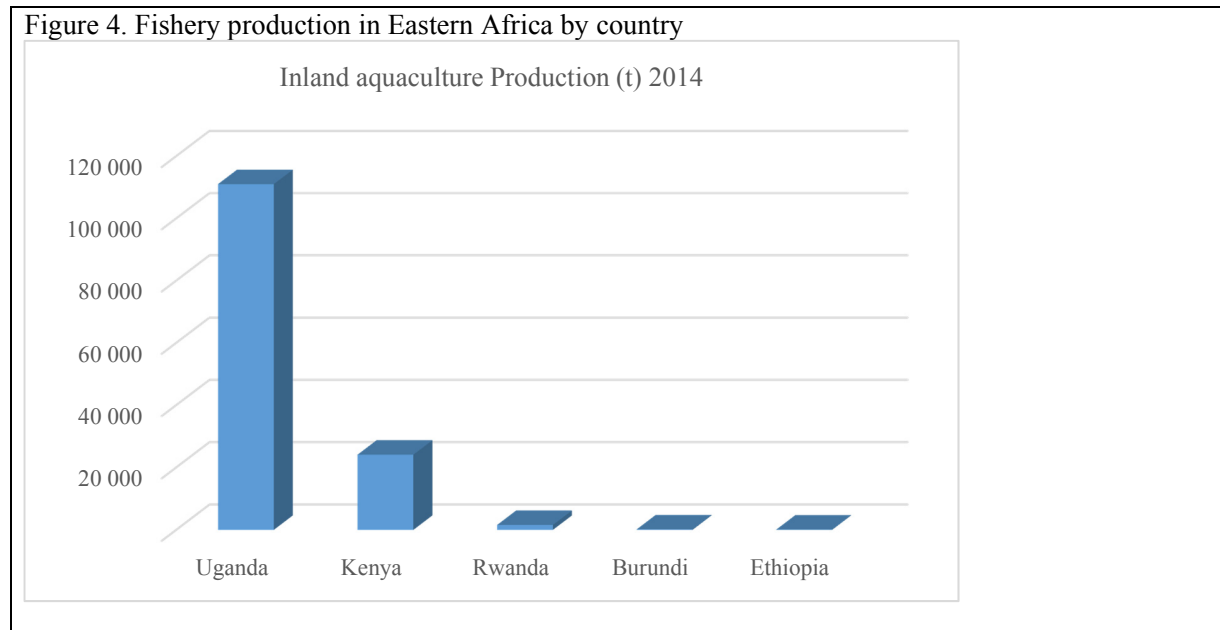
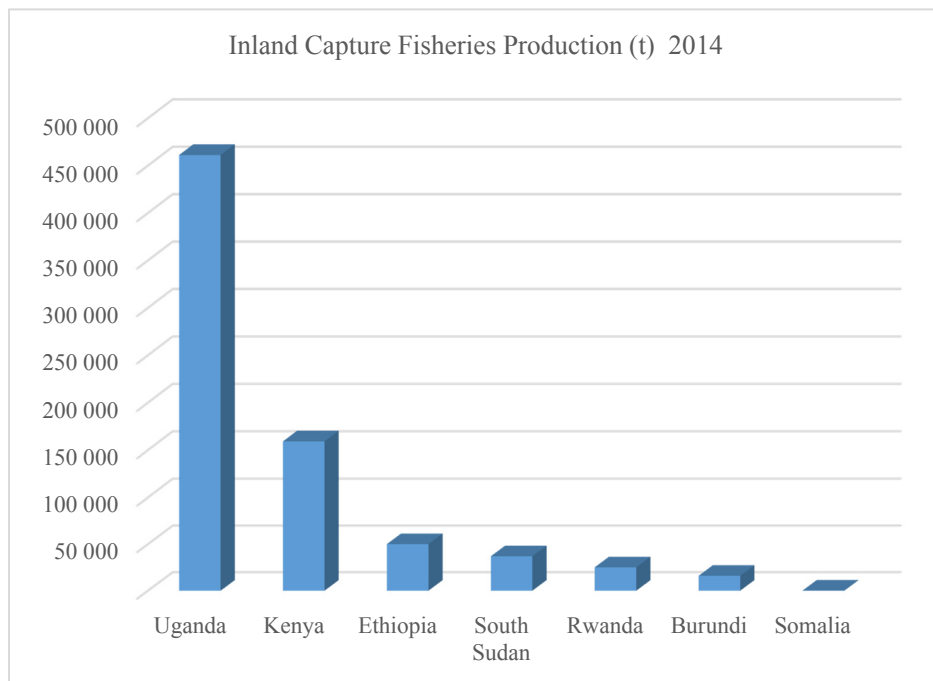
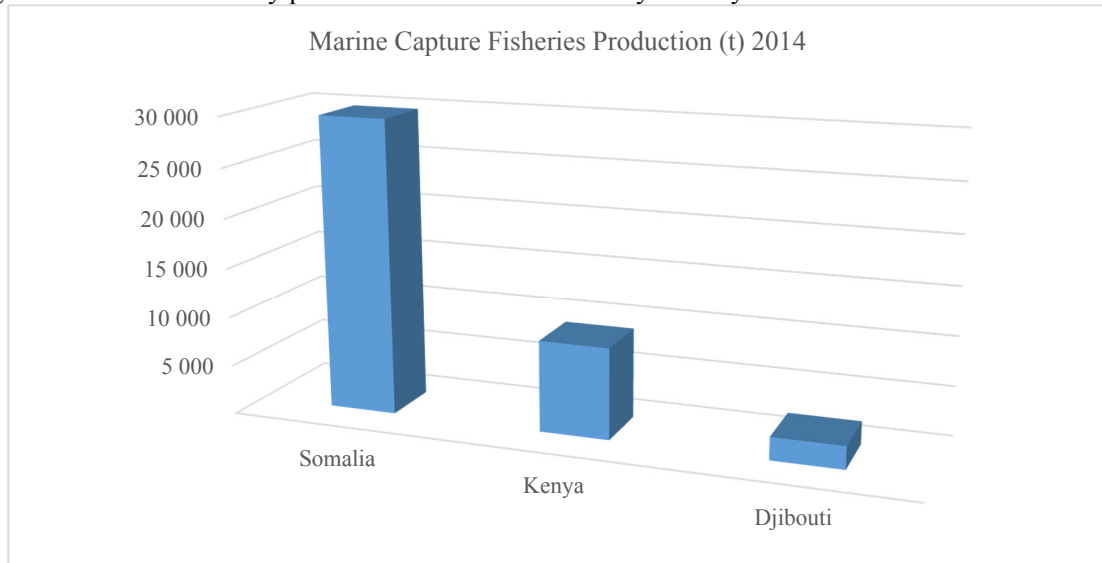
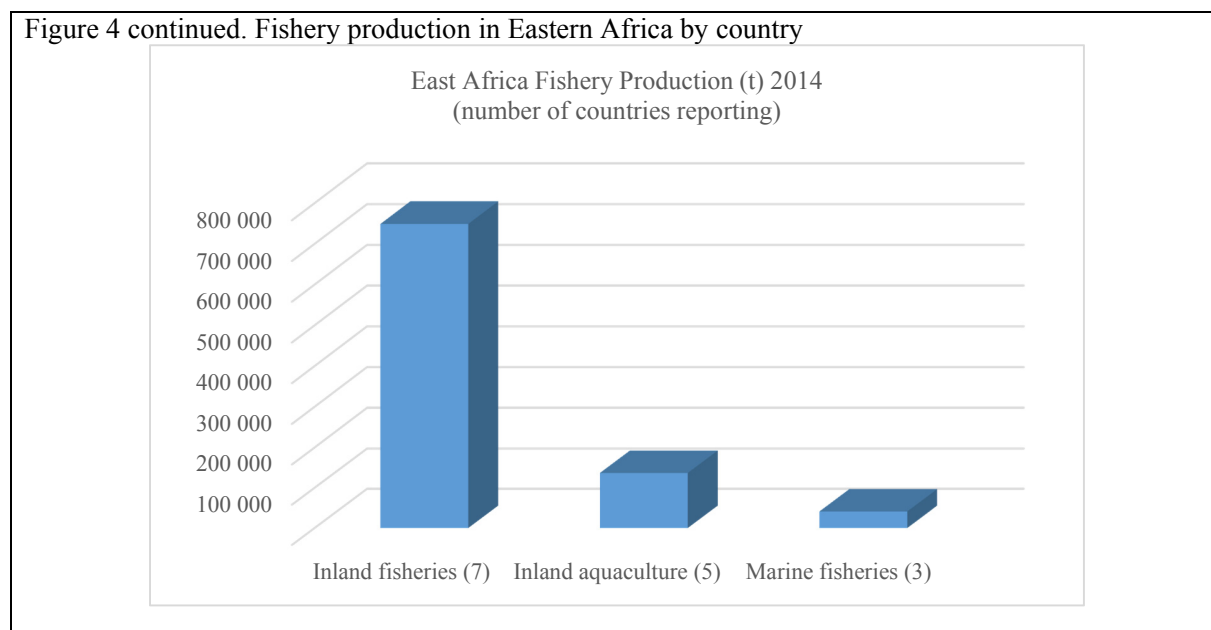


Figure 4 continued. Fishery production in Eastern Africa by country





In 2006 the World Bank, IFPRI and FAO estimated per capita fish consumption in Sub-Saharan Africa to be 6.6 kg/ca/year and expected to decline to 5.6 kg/ca/year by 2025. This is a result of increasing human population and reduced availability of fish. A similar trend is expected in Eastern Africa. The lower per capita fish consumption in the sub-region is in contrast to the overall estimate that fish consumption will increase from around 20 kg/ca/year today to 21.8 by 2025. Demand for fish however, was expected to increase from 10.8 to 15.1 in Sub-Saharan Africa. Clearly there is a need to provide a growing African population with more fish.

In general, there is very little value adding for fish products in the sub-region except for some frozen Nile perch in Uganda and Kenya with the most important products being frozen whole fish, dried and smoked. The majority of fish production is not traded within the sub-region, i.e. it is consumed locally, but Uganda and Kenya have exports of Nile perch. For food security intra-regional trade should be encouraged. Recently some tilapia products and red tuna meat or other processed products based on tuna bi-catch are traded intra-regionally.³¹

The countries face a number of barriers to international trade including complex trade arrangements that do not favor developing countries; key issues are the SPS³² and TBT³³ agreements of the World Trade Organization. Shortcomings exist at institutional level, e.g. lack of EU approved competent authority, limited laboratory capacity, and in the private sector that does not fully comprehend the compliance systems. These same concerns impact intra-regional trade.

The sub-region faces a number of constraints to increased fish production including:

- Lack of information;
- Trade constraints;
- Post-harvest losses;
- Decreasing fish consumption;
- Competition with other sectors for land and water;

³¹ www.fao.org/3/a-az112e.pdf

³² www.wto.org/english/tratop_e/sps_e/spsagr_e.htm

³³ www.wto.org/english/tratop_e/tbt_e/tbt_e.htm

- Policies and regulations (governance) hard to enforce;
- Lack of interest from youth to replace current farmers or to become fishers.

Fishery specific constraints include:

- IUU fishing;
- Overfishing and decreased CPUE;
- Commercial vs small scale fisheries conflicts.

Aquaculture specific constraints include:

- Lack of resources; seed and feed;
- Lack of capacity and extension;
- Competition with capture fisheries.

However, the sub-region also have numerous opportunities including:

- Rich aquatic biodiversity;
- Urbanization and increasing wealth in general will promote more fish consumption;
- Increasing demand from increasing human population and changing of cultural eating habits;
- Technical capacity for aquaculture exists, but elsewhere and needs to be developed in the sub-region;
- Improved and less expensive communication technologies;
- Adoption of the ecosystem approach (EA);
- Other agriculture sectors also need partners;
- Recent international decisions to support livelihoods and development;
- Young workforce, but may not be interested in agriculture or fisheries/aquaculture;
- Recent international convention(s) on sustainable production.

IV. REGIONAL CONFERENCE³⁴ AND OTHER FORA AS GUIDANCE

The Regional Conference for Africa and other fora provided guidance in the general development and management of food and agriculture, with some specific statements on fisheries and aquaculture. The development of any specific BGI strategy for Eastern Africa should take into consideration the findings of these previous fora.

The Regional Conference recommended to Support Member states to promote sound institutional and policy and regulatory frameworks, including the Voluntary Guidelines on the Responsible Governance of Tenure, Fisheries, Forestry in the Context of National Food Security and transparent processes for selection of private partners and the projects that will be implemented in the framework of public private partnerships (PPPs).³⁵

The sub-regional consultation for Eastern Africa identified five priority areas and related actions to: (i) promote sustainable use and management of natural resources to address the root causes and impact of drought and climate change; (ii) facilitate agricultural transformation, taking advantage of the youth dividend; (iii) increase agricultural production, productivity of crops, livestock and fisheries sectors; (iv) support the design and revision of sub-regional policies and frameworks; (v) provide technical support for the IGAD Drought Disaster Resilience Sustainability Initiative.³⁶

³⁴ www.fao.org/3/a-mq472e.pdf

³⁵ www.fao.org/3/a-mp575e.pdf

³⁶ <http://resilience.igad.int/index.php/about/background> (Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda).

The CAADP regional investment plans and economic commissions throughout Africa, although facing area-specific priorities, provided further guidance including:³⁷

- Strengthen institutional capacity of regional organizations;
- Ensure effective linkages between sectors;
- Articulate the national-regional nexus;
- Ensure continuing engagement with Non-State Actors;
- Promote alignment and harmonization of development partners.

Three important global developments in 2014–2015 will frame national and regional action and FAO's work in food and agriculture in the future:³⁸

- The 17 Sustainable Development Goals (SDGs) for a universal Agenda 2030 for Sustainable Development adopted in September 2015 at the United Nations in New York (Annex 1).
 - One of the key priorities in the 2016–17 biennium will be to help countries pursue the Sustainable Development Goals (SDGs). In September 2015 the UN's 193 Member States adopted a new global framework for sustainable development: "Transforming our world: the 2030 Agenda for Sustainable Development." The new agenda includes 17 Sustainable Development Goals and 169 targets, which are to be achieved in the next 15 years (2016–2030). The SDGs aim at eradicating all forms of hunger and poverty while making a global commitment to restoring and sustainably managing natural resources. In their scope, the SDGs and targets introduce a new vision of development based on the design of programmes and policies that are integrative and holistic, enabling more innovative development strategies. The SDGs integrate the three dimensions of sustainable development, i.e. the environmental, economic and social dimensions.
 - Countries will select from among the 17 goals and 169 targets to set their own national goals and targets, based on their own national priorities, needs, stage of development and capacities, resources, strategies, and partnerships.
 - Of particular interest to the current strategy are the following SDGs:
 - The SDG 1 tackles poverty in all its forms everywhere, addressing both absolute and relative poverty (SDG Target 1.1 and SDG Target 1.2).
 - The SDG2 calls for ending hunger, achieving food security and improving nutrition while promoting sustainable agriculture, including fisheries and aquaculture.
 - One of the greatest challenges of the future is to increase food production using less water. The SDG6 focuses on clean water and sanitation.
 - SDG12 promotes responsible sustainable consumption and production which on itself will contribute to SDG2. Eliminating food loss and waste is one of the five elements of the Zero Hunger Challenge
 - SDG13 looks at promoting global climate action hand-in-hand with the UNFCCC.
 - SDG14 underlines the importance of the sustainable management of our ocean ecosystems. Worldwide nearly 3 billion people receive 20 percent of their daily animal protein intake from fish, while almost 29 percent of commercially important marine fish stocks are overfished and 61 percent fully fished. SDG 14.b.1 on access to resources is also supported by the voluntary guidelines on tenure.

³⁷ <http://ecdpm.org/wp-content/uploads/2013/10/BN-49-CAADP-Regional-Compacts-Investment-Plans-Development-Implementation.pdf>

³⁸ www.fao.org/3/a-mp576e.pdf

- SDG15 is also linked to FAO's Strategic Objective 2 and promotes the sustainable management of terrestrial ecosystems, forests, mountains, land, soils and biodiversity and includes wetlands.
- The Paris Agreement adopted as an outcome of the UN Global Climate Change Conference (COP21), which aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty.
 - The aim of the convention is described in Article 2, "enhancing the implementation" of the UNFCCC through:³⁹
 - "(a) Holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5 °C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change;
 - (b) Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production;
 - (c) Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development."
- The Rome Declaration on Nutrition and the Framework for Action⁴⁰ adopted by the Second International Conference on Nutrition (ICN2) in 2014, calls for actions and renewed global commitments to eradicate malnutrition in all its forms. In particular paragraphs:
 - 13 b) nutrition policies should promote a diversified, balanced and healthy diet at all stages of life. In particular, special attention should be given to the first 1 000 days.
 - 13 c) coordinated action among different actors, across all relevant sectors at international, regional, national and community levels, needs to be supported through cross-cutting and coherent policies, programmes and initiatives, including social protection, to address the multiple burdens of malnutrition and to promote sustainable food systems;
 - 14 e) food and agriculture systems, including crops, livestock, forestry, fisheries and aquaculture, need to be addressed comprehensively through coordinated public policies, taking into account the resources, investment, environment, people, institutions and processes with which food is produced, processed, stored, distributed, prepared and consumed.

V. POSSIBLE ELEMENTS OF A STRATEGY

Economic sectors using oceans and inland waters include fisheries, aquaculture, agriculture (for irrigation), tourism, shipping, biotechnologies, maritime security, mining, oil and gas, renewable energy, ecosystem services. The strategy however will be restricted to the sectors that can be influenced by government fishery and aquaculture departments. Therefore we omit from discussion tourism, shipping, maritime security, mining, oil and gas, and renewable energy because they would fall under the mandate of other ministries. There will be instances however, where these and other sectors will need to be engaged in order to improve fisheries' and aquaculture's contribution to poverty alleviation and food security, e.g. tourism, irrigated agriculture, hydro-electric and other forms of alternative energy, and freshwater management.

The strategy will involve several accepted approaches to fisheries and aquaculture development and management including the ecosystems approach and the precautionary approach, and will build on recent

³⁹ <https://unfccc.int/resource/docs/convkp/conveng.pdf>

⁴⁰ www.fao.org/resources/infographics/infographics-details/en/c/266118/

guidelines such as the voluntary guidelines on governance and tenure, the small scale fisheries guidelines and the 10 steps to responsible inland fisheries.⁴¹

The ecosystem approach is an implementation tool that contains several inter-related steps:

- Scoping, defining the ecosystem under consideration and its boundaries;
- identification of stakeholders, who are the people that will be impacted by and have input to the project;
- identification of issues, based on stakeholder input;
- prioritization, what are the most important issues actions based on stakeholder input and risk analysis;
- development of a management plan;
- implementation of the plan;
- monitoring and evaluation of the plan;
- Revision of the plan based on monitoring and evaluation, and stakeholder input; and
- Continue.

The strategy will also address the four pillars of food security: i) availability, ii) accessibility, iii) usability and iv) stability. Food, i.e. fishery resources and their products, must be available in the environment, they must be accessible to rural communities (e.g. affordable), the communities must be able to use them and know how to prepare them, and the food source must be stable and reliable over time. The BGI emphasis on sustainability as well as the components on markets and ecosystem services will help address the stability of food security.

Sustainability is often mistakenly taken for ecological sustainability only. For any business, to be sustainable, production of fish and fish products needs to be technically feasible, economically viable, socially acceptable and based on the rule of law. Aquaculturists and fishers need to understand and utilize suitable technologies (imported or locally produced) and to employ them properly into production systems (technical sustainability). To be economically viable (economic sustainability), fish production has to generate good and competitive profits. Otherwise, people will convey their efforts towards better opportunities. To be socially acceptable and equitable, fish production should benefit a broad part of the society/community, including women and youth, rather than a small elite sector. Lack of social acceptance and equity could result in social turmoil, which could lead to the cessation of aquaculture and fishing activities.

Environmental sustainability implies that fish production has to be respectful of the environment. Environmental damage should be kept to a minimum and acceptable. The aim of fishery and aquaculture development should be to optimize current benefits from resources use without compromising the rights of future generations to use those resources (intergenerational equity).

The sustainability of fishery and aquaculture development further requires that practices be governed by adequate, clear and stable legislation and regulations (legal sustainability). Good laws and regulations which are not subject to erratic interpretations and where the rights and obligations of each actor are clearly defined reassure investors. Legal stability is needed to give private industry and investors' time to adapt and adopt laws and regulations. Frequent changes of laws and regulations are not conducive to investment or the industry and they further create a climate of mistrust between government and private industry.

⁴¹ www.fao.org/docrep/016/i2801e/i2801e.pdf; <http://www.fao.org/3/a-i4356e.pdf>; www.fao.org/3/a-i5735e.pdf

The BGI, is guided by the broad principles of responsible fisheries and sustainable development, recent international instruments and the Green Economy (See Box 1). However, some of the principles listed here may be less a priority for Eastern Africa and should be reviewed for relevance to the sub-region.

The BGI will help implement the strategic objectives of FAO namely the alleviation of poverty, increased food security; sustainable production; stable markets, and resilient production systems and communities.

FAO's Blue Growth development objectives in the near term are:

1. to create an enabling environment for people involved in fisheries and aquaculture to utilize resources but also to play an active role in protecting and safeguarding these natural resources for the benefit of future generations;
2. improved governance and management of aquatic ecosystems;
3. conserve biodiversity and habitats; and
4. empower concerned communities (in particular small-scale fisheries communities).

These could also serve as broad objectives for Eastern Africa. To achieve the Development Objectives, the following action items could be considered in the strategy (relevant principles of the BGI from Box 1 are indicated):

1. Improved utilization efficiency of fishery resources (II);
2. Improved production efficiency with reduced impacts on the environment (II);
3. Increased resilience of fishers, fish farmers and the sector (II, , V, VI, VII);
4. Strengthened private sector through public/private partnerships, enabling business environment and other means (IV, VII);
5. Improved equity and efficiency along the value chain (I, II, III, IV, VI, VII, VIII);
6. Improved governance of the sector (I, II, III, IV, V);
7. Improved integration of the sector into other food production, water management and land use sectors (I, II, III, IV, VI);
8. Managed aquatic ecosystems that provide for food, biodiversity and ecosystem services (I, II, III, V, VI, VIII);
9. Improved trade in fish and fish products both within the sub-region and abroad (I, II, III, IV, , VI, VII, VIII);
10. Improved information production and dissemination (II, V, VI, VIII);
11. Improved opportunities for youth and women along the fish production change (I, II, III, IV, VI, VIII).

A comprehensive BGI strategy will involve capture fisheries, aquaculture, ecosystem services contributing to livelihoods; and trade, markets, post-harvest and social support. Although general principles will apply to all four of these components, there could also be component-specific action items.

Action items specific to capture fisheries to consider include:

- Improve data collection and processing on the production, social and economic impact of capture fisheries;
- Decrease IUU fishing and unsustainable fishing methods;
- Improve or establish MCS regimes;
- Reduce conflicts between industrial and small scale fisheries.

Action items specific to aquaculture to consider include:

- Develop capacity through extension and other means;
- Develop zones for aquaculture development;
- Improve access to quality seed and feed resources;
- Improve access to established technologies (e.g. fish health, genetics and system design)

Action items specific to ecosystem services to consider include:

- Improve the knowledge on the full range of ecosystem services relevant to livelihoods and fishery resources;
- Document the value (monetary and non-monetary) of ecosystem services to rural and fish dependent communities.

Action items specific to trade, markets, post-harvest and social support could be:

- Reduce post-harvest loss of fish and fish products;
- Increase intra-regional trade of fish and fish products;
- Develop enabling environment within the sub-region for the development, management and growth of aquaculture and fisheries, and the people that use aquatic resources.

VI. GENERAL AREAS OF WORK

Theory of change

Based on the BGI strategy endorsed/adopted by the sub-region, there will be a transition stage to reach the overall objectives of the strategy. FAO has used a Theory of Change analysis to identify the building blocks and the sequence for creating them to support countries to transition from concept to achieve desired outcomes. The Theory of Change places the potential impacts of Blue Growth interventions in the context of creating enabling conditions, human and ecological system responses and transformational change in best practices and technologies, policies and investments.

The Blue Growth Theory of Change is based on 3 broad phases:

1. Enabling conditions;
2. Intervention for transformational outcomes and outputs;
3. Mainstreaming into policies and action plans.

The work is organized around three linked platforms for transformational change focused on efficient resource use, decent work, energy efficiencies and innovation:

1. **Blue Communities:** Blue Communities will focus on issues such as nutrition, school feeding, eliminating food loss and waste, food safety, food security and protection for small-scale fisheries. The strength of Blue Growth is the ability to adapt and tailor approaches to the specific communities. Systems to monitor changes in communities and designed to capture and share lessons learned is crucial to the learning process to strengthen Blue Communities and should be developed in partnership with the communities.
2. **Blue Production:** This platform seeks to optimize fisheries and aquaculture production while maintaining ecosystem services from aquatic systems. Changes in the business of capturing fish and farming fish will require specific enabling conditions and policies and legal frameworks with a focus towards management of fisheries, spatial planning for aquaculture; incentives for public and private sectors for technical and financial innovation and will need to also target financial institutions to provide the needed financing to change how fishers and farmers operate.
3. **Blue Forums:** This platform seeks to engage the private sector to improve the efficiency of the seafood value chain. Blue Growth actions along the seafood value chain would include improving seafood safety and quality and employment opportunities, and reductions in energy consumption resulting in increased prices and trade volumes for seafood production. These improvements require the development, uptake and upscaling of Blue Growth tools and best practices, not only in the post-harvest and processing sectors, but also in packaging and transport which would be supported by a capacity building programme and targeted support for small and medium-sized enterprises and governments.

Enabling environments, legal and policy frameworks, knowledge sharing of best practices, experiences and case studies, and good communications programmes are key to uptake and upscaling of Blue Growth and would be integral to all the above Blue Forum platforms.

The Blue Growth Theory of Change not only provides a framework on which to plan out a Blue Growth, but also a means to set targets or milestones and to define how change from business as usual to Blue Growth can be measured over time. The targets, milestones and indicators will vary based on national priorities and are best developed in a participatory way with the stakeholders who are key to transformational change and who will be most impacted by the strategy. For the current sub-regional strategy, priorities would be those activities that are common to and best addressed by the sub-region.

Potential activities

The following activities will facilitate the transition and help achieve the development objectives (Number of action items):

- Support member countries in identifying options for addressing key governance issues in achieving responsible fisheries and aquaculture through appropriate regional and national consultation process in order to develop relevant regional and national policies, strategies and action plans (1,2, 3, 4, 5, 6, 7, 8, 9);
- Support member countries, IGOs, NGOs and CSOs in establishing cross-sectoral linkages, institutions and venues for communication and joint policy making (1,2, 3, 4, 5, 6, 7, 8);
- Increase farmers' and fishers' adaptability to climate change impact and resilience to natural disasters and socioeconomic risks through development and promotion of innovative development and management concepts and practices (1,2, 3, 4, 5, 6, 7, 8);
- Reduce negative environmental and social impacts of fisheries and aquaculture through promoting innovative technologies and management practices, establishing effective surveillance and control system, application appropriate planning and management tools and responsible use of resources (1, 2, 4, 6, 7, 8, 9);
- Define and promote elements of an ecosystem approach to fisheries and aquaculture specifically for Eastern Africa (1, 2, 4, 5, 6, 7, 8, 9);
- Develop a strategy for intra and inter regional trade in fish and fish products with improved infrastructure and opportunities expanded for regional value chain development and market access, including by strengthening the legal and regulatory framework (1, 3, 4, 5, 6, 9);
- Support the member governments in improving the access of poor rural fish farmers to quality production inputs, sustainable production technology and market for improved productivity and economic efficiency (1, 3, 4, 5, 9);
- Support studies on the kinds and value of ecosystem services that impact on livelihoods of rural and fishing communities (1, 2, 3, 5, 6, 7, 8);
- Develop and support innovative and novel means to improve information on fishery production, including household surveys, remote sensing, habitat mapping and modelling approaches (1, 3, 4, 5, 8,9);
- Develop private-public partnerships to address new technologies such as biotechnological and information technologies (1, 2, 3, 4, 9);
- Conduct vulnerability studies on communities that rely on aquatic ecosystems and fishery resources to determine best means to improve food production and resilience in the face of changing climates (1, 3, 4, 5, 7, 8, 9);
- Conduct marketing studies to determine what types of products and markets are most appropriate for the sub-region (4, 5, 9);
- Develop youth and women's groups to address equitable and attractive employment opportunities in fisheries and aquaculture (4,5,11);

- Develop a communication plan to promote Blue Growth as an economically viable, environmentally sustainable and socially acceptable strategy to alleviate poverty and enhance food security in Eastern Africa (all).

VII. PARTNERS IN BLUE GROWTH

Implementing a BGI in Eastern Africa will require partnerships and collaboration with a variety of organizations. FAO is a key partner and this partial list of additional potential partners can be expanded with input from countries, IGOs, NGOs, and other stakeholders.

Partners in Blue Growth	Potential role
African Union Commission (AUC)	Policy advice, network, contacts and funding
United Nations Economic Commissions for Africa (UNECA)	Policy advice, network, contacts and funding
WorldFish Center (WFC)	Technical advice and contacts
Global Aquaculture Alliance Platform	Information source for aquaculture and fisheries
Regional Fishery Bodies	Information source and exchange at regional and inter-regional levels on specialized topics; technical expertise; management and advisory information
FAO Decentralized Offices	Information dissemination; small sources of funding through TCP Facility grants; forum for meetings; liaison with governments and intergovernmental agencies
World Wide Fund for Nature	Information and contacts on biodiversity
Ramsar Convention on Wetlands of International Importance	Identification of wetland ecosystems of conservation and social or economic importance in regards to fishery resources and associated biodiversity
IUCN and species survivalist groups	Source of technical expertise on conservation of aquatic biodiversity
Academia	Technical expertise; source of young scientists and established experts in specific fields
International Development Banks, e.g. World Bank, African Development Bank; Islamic Development Bank	Source of funds and technical information on aspects of development

VIII. DELIBERATIONS OF THE WORKSHOP

The workshop will review the above and develop a comprehensive strategy for the implementation of the BGI in Eastern Africa. Prior to the workshop, participants are requested to review and update the FAO Country Programming Framework for their country at: www.fao.org/fishery/countryprofiles/search/fr

As follow-up Countries may wish to develop more specific strategies compliant with the BGI for specific sub-sectors, e.g. BGI Strategy for Aquaculture in Eastern Africa, or for a specific country, e.g. BGI Strategy for Inland Fisheries in Uganda (See also Annex 2).

Overview of the 17 UN Sustainable Development Goals (SDGs)⁴²

- Goal 1. End poverty in all its forms everywhere
- Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture
- Goal 3. Ensure healthy lives and promote well-being for all at all ages
- Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all
- Goal 5. Achieve gender equality and empower all women and girls
- Goal 6. Ensure availability and sustainable management of water and sanitation for all
- Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all
- Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all
- Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation
- Goal 10. Reduce inequality within and among countries
- Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable
- Goal 12. Ensure sustainable consumption and production patterns
- Goal 13. Take urgent action to combat climate change and its impacts
- Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss
- Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
- Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Global Sustainable Development

The SDGs have a series of targets and indicators associated to them to facilitate their implementation.

⁴² www.undp.org/content/undp/en/home/sustainable-development-goals.html

Examples of the Blue Growth Initiative in Action

Asia and the Pacific's Blue Growth Initiative on Aquaculture

(www.fao.org/asiapacific/perspectives/blue-growth/en/)

At the 32nd FAO Regional Conference for Asia and the Pacific held in Ulaanbaatar, Mongolia in March 2014, member countries endorsed the regional initiative on sustainable intensification of aquaculture for blue growth – improving fish supply for food and nutrition, increasing livelihood opportunities and contributing to blue growth of economy through more efficient and sustainable use of aquaculture resources.

The objectives of the regional initiative are:

- Improve the utilization efficiency to aquaculture resources.
- Improve production efficiency with reduced impacts on the environment.
- Increase the resilience of farmers and the sector.
- Improve the equity and social acceptability along the aquaculture value chain.

Major areas of work of the regional initiative

- Support member countries in identifying options for addressing key governance issues in achieving sustainable aquaculture growth through appropriate regional and national consultation process, develop relevant regional and national policy, strategy and action plan.
- Increase farmers' adaptability to climate change impact and resilience to natural disasters and socioeconomic risks through development and promote innovative aquaculture management concept and practices.
- Reduce negative environmental and social impacts of aquaculture intensification and through promoting innovative farming technologies and management practices, establishing effective aquaculture bio-security and disease surveillance and control system, application appropriate planning and management tools and responsible use of resources.
- Support the member governments in improving the access of poor rural aquaculture farmers to quality production inputs, sustainable production technology and market for improved productivity and economic efficiency.
- Improve management of forestry (mangrove), water, land and tenure that will contribute to sustainable intensification of aquaculture.

Blue Growth in Kenya¹

Blue Growth Initiative (BGI) has the goal of building the resilience of coastal communities and restoring the productive potential of fisheries and aquaculture. It is working in ten countries in Africa and Asia (including Kenya) to support activities that will bring about transformational change in the management and utilisation of marine and coastal resources and habitats, and help to reconcile economic growth and needs for food security with ecosystem conservation and sustainable use.

The general objectives of the BGI in Kenya include: (1) building the knowledge base of ecosystem services in support of food and livelihood security; (2) engaging stakeholders in a dialogue to build common understanding and joint action; and (3) identifying community-based tools and methods to improve ecosystem services in support of food and livelihood security and development of implementation plans.

The BGI provided justification for project development in Kenya. Under the BGI umbrella, FAO, in collaboration with the Government of Kenya, is implementing two projects for the coast of Kenya. The objectives of these initiatives are to: (i) increase knowledge of water basin to coral reef ecosystem services supporting food, nutrition and livelihood security; (ii) identify the drivers of ecosystem services deterioration as well as the management options to improve them; and (iii) foster investment in coastal sustainable mariculture and promote its development under the ecosystem approach to aquaculture. Under the BGI programme, two field assessments were undertaken aiming at:

- Identifying key points of intervention along the fish value chain, and recommending specific actions to optimize the utilization of catch, with the goal of increasing the productivity and profitability of the sector.
- Assessing the potential for development of mariculture in Kenya, including recommendations on enhancing seed production.

The BGI further provided guidance on ways forward. A stakeholders' workshop identified future activities for the implementation of three broad objectives under the BGI for Kenya

- For objective 1 – *building a knowledge base of ecosystem services in support of food and livelihood security* – the following activities are proposed:
 - initiate a capacity-building programme for the application of zoning;
 - Geographic Information System (GIS), methodology, and tools under an ecosystem approach perspective;
 - build the capacity of fisheries and aquaculture stakeholders to participate in the revision process of national fisheries and ocean policy and to contribute to other land/water management policies under review, which needs to be at a high national level.
- For objective 2 – *engaging stakeholders in dialogue in order to build common understanding and joint action*. The activities include:
 - identifying/mapping potential hotspot conflict areas for water and natural resources in the Kilifi and the Tana River Delta;
 - identifying key stakeholders involved in conflict management of natural resources in coastal zones;
 - training identified stakeholders in negotiating mechanisms to reduce conflicts for natural resources in coastal zone; and
 - introducing a capacity-building programme on an environmental impact assessment.
- For objective 3 – *identifying community-based tools and methods to improve ecosystem services in support of food and livelihood security and the development of implementation plans*. The activities include:
 - promoting sensitization campaigns on mangrove conservation and ecosystem restoration in the basin and in both priority coastal areas (Kilifi and the Tana River Delta).

Similar projects could be proposed under the BGI to address specific issues in the sub-region.

¹ FAO 2015. www.fao.org/3/a-i5997e.pdf Report of the FAO workshop launching the Blue Growth Initiative and implementing an ecosystem approach to aquaculture in Kenya, Mombasa, Kenya, 27–31 July 2015. FAO Fisheries and Aquaculture Report No. 1145. Rome, Italy. FAO 2016. Available at: www.fao.org/3/a-i5689e.pdf. Valuing coastal ecosystems as economic assets: The importance of mangroves for food security and livelihoods among communities in Kilifi County and the Tana Delta, Kenya.

ANNEX 3

Consultative Meeting on the “Blue Growth Strategy for the Development of the Fisheries and aquaculture Sectors in Eastern Africa” FAO Conference Room 1, Addis Ababa, Ethiopia, 29–31 March, 2017

Participant List

NO.	Name	Organization	Title	Country
1	Mr Theophile Nyandwi	Federation des Unions des Cooperatives des pecheurs au Lac Kivu	President	Rwanda
2	Mr Gregoire Dusabemungu	Agriculture Board/Ministry of Agriculture and Animal Resources	Researcher in Aquaculture and Fisheries in Rwanda	Rwanda
3	Ms Leonie Nzeyimana	Ministry of Fisheries	Aquaculture Director Ministry of Fisheries	Burundi
4	Mr Jean de Dieu Niyimpaye	Ministry of Fisheries	Small Scale Fisheries Director Ministry of Fisheries	Burundi
5	Dr Yohana Budeba	Ministry of Agriculture, Livestock and Fisheries	Permanent Secretary (Fisheries)	Tanzania
6	Mr Sheha Idrissa Hamdan	Ministry of Agriculture, Livestock and Fisheries	Director of Planning Policy and Research	Tanzania
7	Dr Edward Rukuunya	Ministry of Agriculture Animal Industry and Fisheries	Ag. Director Fisheries Resources	Uganda
8	Dr Dismas Mbabazi	Aquaculture Research and Development Centre Kajjansi (NaFIRRI)	Head Aquaculture Research and Development Centre Kajjansi	Uganda
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