

CONCEPT NOTE FOR SIDE EVENT: INNOVATIONS FOR EXPANDING CONSUMPTION OF NUTRITIOUS DIETS THROUGH AQUACULTURE IN KENYA

SUB THEME 5: Ending hunger, securing food supplies and promoting good health and sustainable fisheries

SUBMITTED BY FAO, WFP, UNICEF

Venue: KICC, Tent C Date: 27th November 2018 Time: 09.00 AM – 11.00 AM

1. Introduction

Investments in the blue economy provide a previously untapped opportunity to accelerate progress towards Sustainable Development Goals (SDGs) 2 (No Hunger) and 3 (Good Health and Wellbeing) in Kenya through several pathways. Kenya is well-placed for these investments given the availability of rich water-based resources, as well as its high burden of malnutrition, with one in three people malnourished in one form or another¹. 26 percent of children in Kenya are malnourished, with a big majority living in areas surrounded by oceans, lakes, rivers, and other water bodies; the time is right for leveraging linkages between the blue economy and ending hunger. For instance, aquaculture can be leveraged to provide: a valuable source of nutritious food, such as protein, vitamins and minerals, livelihood and income-generating opportunities, and enhanced purchasing capacity of households in these areas.

Kenya has made significant progress towards global food and nutrition security in the past two decades. However, about one million people remain deficient of essential vitamins and minerals, which in many cases is life-threatening and impacts on economic growth. 510,593 children below five years are wasted in the Arid and Semi-Arid Land (ASAL) and Urban areas alone. The proportions of the population affected by micronutrient deficiency is even more worrying, with 25 percent of Kenya's pregnant women being iron deficient, 61.8 percent of preschoolers suffering from Vitamin A deficiency, 80 percent of school-aged children suffering from Zinc deficiency, and 25 percent of non-pregnant women being iodine deficient². This makes malnutrition and poor diets the number-one driver of the global burden of disease in Kenya, constituting 45 percent of all child deaths³.



In light of these risks, the Nutrition sector, led by the Ministry of Health (MoH), has made several commitments to improving the nutritional status of the most vulnerable women and children in the ASAL, through the Kenya Vision 2030, The Medium Term Plan (MTP), The Kenya Health Sector Strategic and Investment Plan (KHSSIP), the Food and Nutrition Security Policy (FNSP), and the Kenya Nutrition Action Plan (KNAP), all of which aim to contribute to the realization of SDGs, specifically *Goal 2 – Zero Hunger*. The enabling environment in Kenya is thus conducive to building these linkages, especially considering the President's Big Four Agendas for the next five years, with Food and Nutrition identified as a central agenda

¹ IFPRI 2015

² Kenya National Micronutrient Survey 2011

³ GNR 2016

to facilitate the achievement of Vision 2030. In addition, the Government of Kenya (GoK) already identifies fisheries as a key driver for the realization of the country's food and nutrition security agenda.

Aquaculture, the farming of aquatic organisms including fish, mollusks, crustaceans, and aquatic plants, has great potential to serve as this key driver by contributing to food security, nutrition, and economic growth in Kenya. Fish is a source of protein, healthy fats, and a unique source of essential nutrients, including long-chain omega-3 fatty acids, Iodine, Vitamin D, and Calcium. Kenya is endowed with several inland natural water resources, rivers, and lakes, including artificial lakes from man-constructed dams, which are spread across the landscape. Kenya boasts of approximately 640 km of coastal shoreline with an Exclusive Economic Zone of 200 nautical miles, which could be harnessed to enhance aquaculture. Therefore, fisheries and aquaculture play an important role in food security as these products could serve as a direct and indirect source of food for many communities.

However, despite this availability of fish in counties, consumption of fish and fish products in Kenya has not been optimal. Although most parts of the country are suitable for aquaculture, only about 0.014 percent of the 1.4 million ha of potential aquaculture sites are used for aquaculture, with 95 percent of fish farming practiced on a small scale⁴ level. In addition, fish farming has been practiced mostly in the Central, Nyanza, Western regions, and parts of the Rift Valley and Coastal regions⁵. Tana River and Turkana County Standardized Monitoring and Assessment of Relief and Transitions (SMART) surveys established that only 17.7 percent and 2.3 percent of households respectively reported having consumed fish in the week preceding the survey⁶. Interestingly, amongst the counties near water bodies, only Kisumu and Homa Bay counties experience *medium* stunting rates according to WHO-UNICEF standards at 18 and 18.7 percent, respectively. Nakuru, Siaya, and Vihiga experience *high* (20-29 percent) stunting levels; Baringo, Kwale, Lamu, Marsabit, Mombasa, Tana River, Turkana and Kilifi have *very high* (>30 percent) stunting levels; with Kilifi being the most *Critical*.

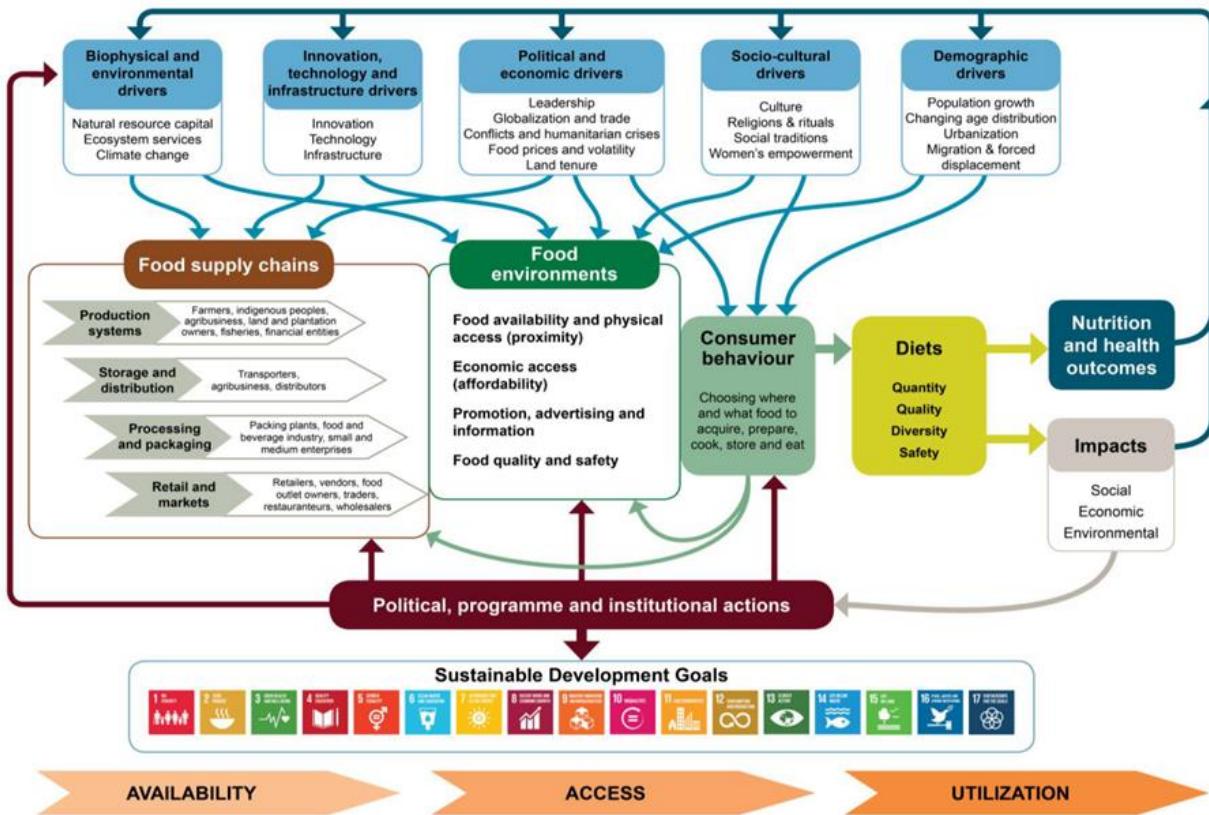
Therefore, opportunities to enhance nutrition outcomes through aquaculture and fisheries within the food system (Figure 2) should be leveraged upon more strategically. Directly, fisheries and aquaculture could complement the diet of rural households in fishing communities by serving as the main source of animal protein. They could also contribute indirectly to food security by enhancing income generating opportunities through local fisheries. This could lead to improved wealth generation along the value chain, reaching other stakeholders and populations. Further, the development of domestic markets, in other ways besides food security, could be important to ensure wealth generation in the country, which could in turn result in higher levels of consumption and increased demand for diversified, safe, and nutritious food. This side event will, therefore, explore these opportunities through the achievement of the following objectives:

1. Improved availability of nutritious food through increased production and productivity of fisheries and aquaculture in Kenya;
2. Nutrition promotion and education on consumption of fish and fish products to enhance dietary diversity in Kenya;
3. Improved household and market access to fish and fish products through enhanced purchasing power and market linkages in Kenya; and
4. Improved utilization of health and nutrition services through the provision of health and nutrition counseling in communities living near water bodies in Kenya

⁴ Otieno, 2011

⁵ Nyonje et al., 2011

⁶ SMART 2018



Panel discussions will also take into consideration socio-cultural, environmental, and innovation drivers, amongst others, in the identification of opportunities and linkages under Sub-theme 5. The side event will adopt the food systems approach outlined above to further explore food supply chains, food environment, consumer behaviors, and ultimately how this could affect diets and, subsequently, nutrition and health outcomes in Kenya.

2. AIM OF THE SIDE EVENT

AIM: To identify and leverage on fisheries and aquaculture-related linkages to promote dietary diversification and improve health and nutrition outcomes *in Kenya*.

It is envisioned that the side event will prompt discussions between GoK, County Governments, UN agencies, the Private Sector, and multilateral donors on new opportunities and engagements to end hunger in Kenya through blue economy linkages.

The side event will be a half day event composed of presentations and a panel discussion to showcase lessons learnt from relevant ministries, County Governments/Regional Economic Blocs, the three UN agencies, and the private sector.

1. Presentations:

- a. Ministry of Health will present a brief highlight on the Nutrition situation in Kenya
- b. FAO, UNICEF, and WFP will present on the potential impact of fisheries and aquaculture on availability, access, and utilization of nutritious foods through a food systems approach. The agencies will also present on their work in relation to sub thematic area 5.
- c. Presentations from Kenyan best practices related to fisheries and aquaculture towards ending hunger and improving health outcomes.

2. Panel discussion: A group of five panelists will discuss the opportunities and innovations in aquaculture to promote good health and dietary practices, particularly in the face of climate change.

3. Participants

Participants will include GoK line ministries, donors, UN agencies, NGOs, academia, policy makers, and private sector representatives. The number of participants is anticipated at approximately 50. Participants of the meeting will be drawn from a range of experts, including: Donors, UN Organization Representatives, (FAO/WFP/UNICEF), Government of Kenya (PS Fisheries and Blue Economy, PS MoH, Head of Nutrition MoH, Head of Agri-Nutrition), Academia, and the Private sector.

4. Suggested Agenda

Date and Time: Tuesday 27th November 2018: 09.00AM to 11.00AM

Venue: KICC, TENT C

Organized by: FAO, UNICEF and WFP

MC: Mr. Vincent Ogwang (Assistant Director of Fisheries)

Opening Session (20 mins) 9.00 to 9.20 min	Opening remarks and keynote speeches by: <ol style="list-style-type: none">1. FAO, WFP and UNICEF Representatives – Mr. Gabriel Rugalema, FAO Rep Kenya, on behalf of the 3 agencies (5 min)2. Key note speaker: Prof Julius Manyala from University of Eldoret (5 min)3. Government of Kenya's vision, actions, and expectations on the collaboration with the UN agencies and other partners towards a prosperous and food secure Kenya - Prof. Ntiba, Principal Secretary, State Department of Fisheries on behalf of the Government of Kenya (10 min)
“Setting the Scene” – Co-Host Presentations and Discussion 9:20 to 10:10 AM (each presentation should be maximum of 10 minutes)	<ol style="list-style-type: none">1. Nutrition Situation Overview – Veronica Kirogo, NDU (10 mins)2. The potential impact of fisheries and aquaculture on availability, access, and utilization of nutritious foods through a food systems approach - FAO, UNICEF, and WFP (WFP – Shaun Hughes, Head of Resilient Livelihoods and Nutrition) (10 min)

	<ol style="list-style-type: none"> 3. The main challenges to mainstreaming nutrition in fisheries and aquaculture sector - MOALF&I - Jane Wambugu (Head of Agri-nutrition unit) (10 min) 4. How to harness the contribution of fisheries/aquaculture to the national economic growth, food security and nutrition. FAO-FI – Dr. Manuel Barange (10 min)
<p>Panel discussion: 10:10 am– 10:45 am</p> <p>Moderator – Dr Sloans Chimatiro (African Aquaculture and Policy Expert – former NEPAD and currently with the World Fish)</p> <p>Panel will be composed from a range of experts and practitioners on nutrition and health, aquaculture production value chains.</p> <p>Panelists</p> <ul style="list-style-type: none"> • Werner Schultink – Representative, UNICEF Kenya • Ana Menezes - Fisheries and Aquaculture officer • Mr. Albert Mwangi - Director of Fisheries, State department of Fisheries • Professor Charles Ngugi – Fisheries and aquaculture expert • Ms. Priya Mehra – Director of Sustainability, Victory Farms 	<p>Questions and answers after the 4 presentations (10 min)</p> <p>Introduction of panel members (5 mins)</p> <p>Guiding questions</p> <ol style="list-style-type: none"> 1. What are good aquaculture practices and innovations in Kenya linking production, food security, and nutrition - how can they be up scaled and well mainstreamed in government programs? 2. What opportunities exist in Kenya for the private sector to work together with various institutions dealing with nutrition to end hunger and promote the wellbeing of communities? 3. Africa regional symposium on sustainable food systems for health diet and improved nutrition, which was co-hosted by African Union and UN Agencies in November 2017 (Abidjan, Cote d'Ivoire), urged governments and the UN to take advantage of the African Decade of Action on Nutrition (2016-2025) to ensure positive nutrition outcomes. What steps and investments has Kenya undertaken to promote nutrition-sensitive aquaculture and fisheries in Kenya? 4. How can businesses operating in the blue economy be involved in the health and wellbeing of the populations they work with and that they serve (becoming a “nutrition sensitive aquaculture and fisheries”)? 5. There is an urgent need for research to develop strategies on reducing waste and loss. What should be done to overcome processing and marketing barriers that reduce the availability, accessibility, and affordability of nutritious, quality, and safe fish to poor consumers? 6. What policies and strategies should Government of Kenya put in place to ensure that fish farmers and fishers, including processors, traders, consumers, and the entire populace in Kenya are encouraged to ensure availability and compliance with rules and regulations to protect food systems - including

	the sustainable production, promotion, and consumption of healthy foods, including Africa's indigenous fish species?
Closing remarks and next steps 10:50 am – 11.00 am	PS Ministry of Health - Mr. Peter Tum

Contact Persons

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State Department of Agriculture (Agri-nutrition Unit)	Jane Wambugu	0723245636	cirumbугua@yahoo.co.uk
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Presenters & Moderators

Micheni Japhet Ntiba (PhD)



Principal Secretary
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Professor Ntiba is the Principal Secretary of the Ministry of Agriculture, Livestock, Fisheries and Irrigation, State Department for Fisheries, Aquaculture and the Blue Economy of Kenya. As an academic, he has spent a number of years at the University of Nairobi as a Senior Lecturer, and later as an Associate Professor in the Department of Zoology. His research efforts conducted with numerous institutes and laboratories such as the Kenya Marine and Fisheries Research Institute, and the Centre for Environment, Fisheries and Aquaculture Science (CEFAS), Lowestoft Laboratory, has largely focused on the biology of marine fishes, and marine and mangrove ecosystems. Prior to his appointment as the Principal Secretary at the Ministry of Agriculture, Prof. Ntiba also served as the Executive Secretary of the Lake Victoria Fisheries Organization (LVFO). Prof. Ntiba holds a BSc in Biological Sciences and a Masters degree in Hydrobiology from the University of Nairobi. He went on to receive his PhD in Fisheries Biology from the University of East Anglia, UK.

Werner Schultink (PhD)



Representative
UNICEF Kenya
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Mr. Schultink joined UNICEF in April 1999 and has held a number of senior positions both at Headquarters in New York, where he was a Senior Nutrition Advisor, Associate Director and Chief of Nutrition and in the India Country Office, where he led the Child Development and Nutrition Section. Before joining UNICEF, Mr. Schultink had extensive experience working with the German Agency for Technical Cooperation from 1990 to 1999. He served as an advisor on issues of curriculum development of post-graduate courses and research management in community nutrition. He attended the Agricultural University of Wageningen in the Netherlands and obtained his Ph.D. degree in Human Nutrition in 1990. His doctoral research led him to Benin where he studied seasonal variations in the nutritional status and energy requirements of rural Beninese women. Mr. Schultink has written extensively about nutrition issues in the developing world in both academic journals and specialized books. Mr. Schultink assumed his duties as UNICEF Kenya Representative on 7th June 2016.

Gabriel Rugalema (PhD)



Representative
Food and Agriculture Organization of the United Nations, Kenya
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Mr. Rugalema was appointed as the FAO Representative in Kenya in June 2016. Until his appointment he served as the United Nations Resident Coordinator ad interim and FAO Representative in Sierra Leone. His academic background includes Crop Sciences, Natural Resources Management and Sustainable Agriculture and Development Studies. In 1989, he started his career as a researcher and trainer in the Agricultural Extension Centre at the Sokoine University of Agriculture in Morogoro, Tanzania. From 2001 to 2002, he served as a Senior Policy Adviser on HIV and Development for the Joint United Nations Programme (UNAIDS) in Pretoria, South Africa. In 2003, he became Capacity Building Manager, HIV and Education, in the International Institute for Education Planning at UNESCO, Paris, France. In 2004 he joined FAO and worked as Senior officer and later as

Principal Advisor and Strategy Team Leader at the Gender Equity and Rural Employment Division, in Rome until 2011. Gabriel is particularly interested in the humanitarian development nexus vis-à-vis food security, gender, equity, rural employment, education, HIV/AIDS amongst others, which he has significantly contributed to in his career to date.



Manuel Barange (PhD)

Director

Fisheries and Aquaculture Policy and Resources Division

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Professor Manuel Barange has been the Director of the Fisheries and Aquaculture Policy and Resources Division at the Food and Agriculture Organization of the United Nations since 2016. Previously he was Deputy Chief Executive and Director of Science at the Plymouth Marine Laboratory, UK. From 1993-1999 he was Head of the Surveys and Fish Behaviour Division of the Sea Fisheries Research Institute in Cape Town, South Africa. Manuel is an Honorary Professor at the College of Life and Environmental Sciences, University of Exeter, UK. Manuel's expertise includes a broad range of oceanography, marine biology and fisheries science and management topics. In recent years, he has increasingly focused his research and activities on the impacts of climate change on marine ecosystems and their services, and on the interactions between natural and socio-economic drivers in determining the direction and magnitude of change. He has over 120 academic publications and has edited books on "Climate Change and the Economics of the World's Fisheries" (Elgar Publishers) and "Marine Ecosystems and Global Change" (Oxford University Press). In 2010 he was awarded the UNESCO-IOC Roger Revelle Medal for his accomplishments and contributions to ocean science. Manuel is a review editor of the IPCC Special Report on Oceans and the Cryosphere, and has served in advisory boards for companies and research institutions in Europe, Africa and the Near East.



Julius O. Manyala (PhD)

Associate Professor

University of Eldoret

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Julius Manyala is an Associate Professor in Fisheries at the University of Eldoret. He started his career in 1986 as an Assistant Fisheries Research Officer. Between 1991 and 2011 he was actively involved in several scientific research projects such as the Kenya-Belgium Project in Freshwater Ecology, Lake Victoria, the IFS Grantee, the EU Funded Lake Victoria Fisheries Project (Phase I and II), and the Biodiversity Indicators for National Use (2004-2006). He has worked in different capacities at national, regional and international Organizations such as World Bank, GIZ, LVEMP II and SWIOFP. Manyala is a member of the National Working Group on Dagaa Fisheries, facilitated the development of the Prawn Fisheries Management Plan for Malindi-Ungwana Bay from 2006 to 2010 and currently he is facilitating the preparation of the Lamu Archipelago Fisheries Lobster Management Plan. Since 2000 he is involved in the CRSP-USAID Programme and the Host Country Principal Investigator for the AquaFish CRSP Pond Characterization Project and AquaFish Innovation Lab Projects in Kenya on fish feed formulation and Aquaponics. Manyala has published his work widely in international and refereed journals as well as for popular consumption by the general public.



Sammy Macaria

Head of Aquaculture

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Sammy Macaria specializes in research and development of fisheries and aquaculture policy, management and sector planning with emphasis on structural, institutional and socio-economic aspects including historical trends underpinning poverty alleviation strategies and policy and technological reform processes. He has a wealth of experience with over 20 years of consultancy and has held different ranks at the Ministry of Agriculture, Livestock, Fisheries and the Blue Economy. Currently he is the Acting Program Coordinator (PC)-Aquaculture Business Development Program (ABDP), Ministry of Agriculture, Livestock & Fisheries for the State Department for Fisheries, Aquaculture & Blue Economy.



Charles Ngugi (PhD, EBS)

Associate Professor

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Charles Ngugi is holder of PhD in Fish Biology and an Associate professor at Karatina University, School of Natural Resources and Environmental Studies, Department of Natural Resources. He has 38 Years in Research, Academic and as a government official for the Fisheries Secretary in the Ministry of Agriculture Livestock and Fisheries. His has 17 years of consultancy experience with USAID, FAO, Deloitte and DFID. His recent assignment with FAO was under the project "Promoting agricultural diversification to reduce poverty, fight nutrition and enhance youth employment opportunities in Eastern Africa" to facilitate trainings and hand-on good farm management practices to young farmers. He is a member of several Professional associations - The World Aquaculture Society, Aquaculture Association of South Africa, Aquaculture Network of East Africa and a Patron Kirinyaga Fish Farmers Association. He has worn a number of awards: Presidential Award: Elder of the Burning Spear (EBS), Second Best Small Scale Commercialized Farmer in Kenya 2016, Long service and distinguished staff award from Moi University. He is part of the 2009 Edition of Who's Who in the World of Distinguished Leading Achievers in their area of profession from around the globe.



Shaun Hughes, (MBE)

Head of Resilient Livelihoods and Nutrition

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Shaun Hughes joined the WFP Kenya office in 2016 after a 2-year assignment as WFP's Head of Programme in South Sudan. He led the design of the new Kenya Country Strategic Plan (CSP) 2018-2023 and now manages the integrated Food Systems programme. Prior to WFP, Shaun spent 12 years as a Senior Humanitarian Advisor in the UK Department for International Development (DFID), undertaking postings in Ethiopia, Sudan and Zimbabwe and rapid deployments to Pakistan, Libya, Sri Lanka and elsewhere. He began his international career as an English and French teacher in West Africa. Shaun holds a bachelor's degree in Law and French from the University of Birmingham and a Diplôme d'Études Juridiques from the Université de Limoges. He holds postgraduate certifications in Food Access Systems from New York University's Global Institute of Public Health, and Nutrition in Emergencies from the London School of Hygiene and Tropical Medicine. In 2014 Shaun was awarded the Member of the Order of the British Empire (MBE) in the Queen's Honours Roll for humanitarian services in Africa.

**Ana Menezes (PhD)**

Aquaculture Officer

Aquaculture branch, FAO Fisheries and Aquaculture Department

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Ana Menezes is a national from Mozambique with an academic and professional background in agriculture engineering, aquaculture and environmental sciences. She has more than 25 years of professional experience in aquaculture development and environmental management in the agriculture sectors, especially in Eastern and Southern Africa. Her career started in 1987 as an aquaculture researcher for the Fisheries Research Institute in Mozambique. Prior her appointment with FAO in 2012, she worked with UNEP as the National Environmental Officer from 2009 to 2012. She works extensively in the Africa region assisting the FAO representations, development and government partners with the planning, development, implementation and evaluation of fisheries and aquaculture projects, especially in the development of commercial aquaculture. She assists FAO Member Countries to develop sound policies, strategies, plans and programmes as well as strong institutions for a sustainable aquaculture development. She is a strong advocate of the integration of an Ecosystem Approach to Aquaculture (EAA) to the small-medium scale commercial aquaculture and improvement of the interactions between different sectors of the agricultural sector.

**Sloans K. Chimatiro (PhD)**

Country Director

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Sloans Chimatiro is a fisheries and aquaculture specialist with more than 20 years' experience of research in fisheries and aquaculture, as well as fisheries administration, policy reform and management. He helped formulate the NEPAD Fisheries and Aquaculture Action Plan in 2005 that was endorsed by African Union Heads of State and Governments during the Abuja Summit in August 2005, as a precursor to the current AU Fisheries Policy. Between 2006 and September 2014, he was the Head of Fisheries at NEPAD, where he was responsible for (i) the development of the African Union Policy Framework & Reform Strategy (or the Common African Union Fisheries Policy); and (ii) assisting African countries and Regional Economic Communities and Regional Fisheries Bodies to design and implement fisheries policy and governance reform. Currently he works for the WorldFish as (i) Coordinator of a Pan-African FishTrade Program, and (ii) Country Director for Zambia and Tanzania. He is the President of the Pan-African Policy Research Network for Fisheries & Aquaculture (an African Union Policy Body). Before joining NEPAD Agency in 2006, he was the Director of Fisheries in Malawi.



Ms. Priya Mehra

Director of Sustainability

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Priya Mehra is Director of Sustainability for Victory Farms, the fastest growing aquaculture company in Africa. Through innovative pond and cage technologies Victory Farms is working to ensure sustainable protein for all, starting with Kenya. By dramatically reducing the cost of tilapia throughout the region, Victory Farms is on track to improve protein intake and food security. This year, Victory Farms will provide 2.4 million high protein meals of fresh tilapia. Next year, 10 million. The company's vision is to become the most sustainable tilapia farm in the world and already makes a positive impact on each of the UN SDGs. Priya joined Victory Farms with over a decade of experience working in development and sustainable investing, specifically in global health, climate change and innovative finance. She was formally COO of Morgan Stanley's Institute for Sustainable Investing in New York and Policy Advisor to UN Secretary-General Ban Ki-moon. She also has Africa experience having worked in one of the largest medical distribution companies in East Africa, Pyramid Pharma, based out of Dar es Salaam. She has an MBA from IMD in Switzerland as well as a Master's in Public Health from Johns Hopkins.
